Deconstructing the Hype Around Knowledge Work and Putting Clothes on the Emperor's Back

Tom Butler
University College Cork, tbutler@afis.ucc.ie

Follow this and additional works at: http://aisel.aisnet.org/amcis2000

Recommended Citation
http://aisel.aisnet.org/amcis2000/91
Deconstructing the Hype Around Knowledge Work and Putting Clothes on the Emperor’s Back

Tom Butler, Department of Accounting, Finance and Information Systems, University College Cork, Ireland, tbutler@afis.ucc.ie.

Abstract

It is widely believed that knowledge work is a relatively new phenomenon and constitutes the main form of activity in post-industrial organisations. While the term remains undefined, it is taken to refer to the knowledge that individuals apply while performing business activities in ‘knowledge-intensive’ firms. Here, the subjective knowledge of individual social actors’ is applied to objective organizational knowledge as the raw material of the production process. Thus, knowledge is considered to be both an input and an output of business processes and to also underpin the process by which knowledge inputs are transformed to outputs. This conceptualization is incorrect, and in order to illustrate why, the socially constructed nature of individual knowledge and its relationship to knowledge-produced data is subjected to critical analysis. Cooley (1975) was one of the first to employ the term ‘knowledge worker’; however, his conception encompasses both white and blue-collar workers, professionals and craftspeople alike. This paper echoes Cooley’s perspective in many respects; however, it seeks to extend and apply it in a contemporary context. Accordingly, the first section of this paper explores the constitution of individual knowledge and deconstructs commonly held beliefs on knowledge by examining its relationship to data and information. However, in order to help researchers and practitioners understand better the phenomenon, the third section presents a conceptual model and taxonomy of knowledge in organizational contexts. This paper’s motivation is to eliminate the hype that surrounds the concept of knowledge work and to propose an understanding of the phenomenon that is more in tune with the ‘reality’ of organisational life as evidenced by the author’s experience as a practitioner and his empirical research on information and communication technologies (ICT) infrastructures in the newspaper industry. Thus the fourth and penultimate section of the paper draws on this research in support of its thesis and, also, to inform its conclusions.

Keywords: Information (AD01), Hermeneutics (AI0116).

Individual and Social Context of Knowledge: An Ontological Perspective

Boland (1987) gives account of five misguided fantasies that surround the concept of information viz. that it is structured data; that an organisation is information; and that information is power, is intelligence, or is perfectible. This observation could be extended to the concept of knowledge. For example, conventional wisdom dictates that knowledge is processed information and as such is capable of objective representation. In order to dispel such notions, a consideration of the ontological basis of knowledge is now undertaken.

It is clear from Gadamer’s (1975) hermeneutics that data, information and knowledge are loosely coupled: depending on the ‘worldview’, ‘lived experience’ and ‘tradition’ of the recipient, the same data can yield different knowledge and understanding. Consider, for example, Heidegger’s argument that Dasein’s ‘Being-in-the-world’ is characterised by a ‘preunderstanding’ or ‘foreknowledge’ of the nature of being and its constituent phenomenon. Consider also, Heidegger argument that Dasein, as the mode of being characteristic of all humans, always understands itself in terms of its existence and the possibilities it presents. Any ‘breakdown’ in Dasein’s understanding of phenomena results in the search for data that will enable phenomena to be interpreted in a new light, and thereby repair the ‘breakdown’ by developing an enhanced understanding. Thus, as Brown and Lightfoot (1998; p. 293) argue “knowledge occurs in the wake of the breakdown. It proceeds slowly, perhaps without clear direction”. In Gadamerian terms, the process of acquiring new knowledge-informing data is governed by the hermeneutic ‘circle of understanding’ which involves the cycling back and forth between the actor’s existing ‘horizon of understanding’ and that suggested by the phenomenon of interest. A dialectic of question and answer, of thesis, antithesis and synthesis, operates to help the actor interpret new data in light of the old. Hence, a new understanding is arrived at when a ‘fusion of horizons’ occurs between the interpreter’s horizon of understanding and that of the phenomena under consideration (Butler, 1998). Thus knowledge is, first and foremost, an enigmatic and personal phenomenon in that it arises from the practical experience of social actors; in order to delineate the dimensions of such experience, the work of Aristotle is presently explored.

Phronesis and Techne as the Core Constituents of Practical Knowledge

Gadamer (1975) and Dunne (1993) drew on Aristotle’s Nicomachean Ethics to extend further our
understanding of individual knowledge. Aristotle presents what he considered to be the core components of practical knowledge—*phronesis* as experiential self-knowledge and *techne* as skills-based technical knowledge. The conduct of social affairs involves the application of *phronesis* in a thoughtful and competent manner; this Aristotle refers to as *praxis*. The social activity that has as its concern the ‘making’ or ‘production’ of social artifacts is called *poiesis* and involves the application of *techne*. A *techne* is knowledge of how to perform task-based activities in pursuit of some practical end: this end may be tangible or intangible. Thus, *techne* provides professionals, craftsmen, and scientists with an understanding of the why and the wherefore, the how and with-what of their concerns. The skills of qualified craftsmen, artists, musicians, surgeons, computer programmers, physicists, accountants, and so on, all fall into this category. On the other hand, a social actor’s ‘self-knowledge’ (*phronesis*) is a synthesis of his temporal experience of social phenomena and his ability to take or perform practical action in relation to such phenomena. All this has important implications for the way in which individual knowledge is viewed in research and practice, as will be seen in the concluding sections. However, it is clear from Aristotle that *phronesis* and *techne* possess a social nature; accordingly, the social context of knowledge construction is now explored.

**The Social Construction of Knowledge Work**

Researchers point out that social action is the dominant means of knowledge diffusion in organisations (Berger and Luckmann, 1967). However, it must be noted that individual knowledge is inseparable from the social context and practices that give rise to it and which shape and influence its acquisition (Berger and Luckmann, 1967; Bruner, 1990; Brown and Duguid, 1991). Following this line of argument, Tsoukas (1996) argues that a social actor’s knowledge lies, first and foremost, in the social and occupational practices in which he or she engages; knowledge is in effect socially constructed (Berger and Luckmann, 1967). It is clear, however, that while knowledge is embodied in the social actors that comprise the various 'communities of practice' that constitute organizations, no one actor, or group of actors possess all the knowledge required to effect social action. This gives rise to the notion that knowledge in organisations is dispersed (Hayek, 1945) as actors may not be in a position to observe, at first hand, the knowledge embedded in the actions of others or communicate linguistically with them (Kogut and Zander, 1992). Social actors therefore resort to texts and other media, such as IT, to augment their limited cognitive capacities (Bruner, 1990); these mechanisms provide conduits or repositories for the spatial and temporal transfer of knowledge-informing data between actors (Boland and Tenkasi, 1995). They are not, as this paper argues, knowledge repositories, and therefore cannot be managed as such. It is clear, however, that social narrative is the dominant mechanism for understanding acts of meaning in social contexts: hence, this issue is next explored.

The cultural psychologist Jerome Bruner (1990) illustrated the role of narrative in all human understanding (see also, Brown and Duguid, 1991). Accordingly, Gadamer argues that language is essential component of communication and understanding, but Heidegger (1976; p. 205) maintains that:

> Communication is never anything like a conveying of Experiences, such as or opinions or wishes, from the interior of one subject into the interior of another... In discourse Being-with becomes "explicitly" shared; that is to say, it is already, but it is unshared as something that has not been taken hold off and appropriated.

Thus, strictly speaking, language is not normally used for the exchange of information, as is commonly assumed, instead it merely calls attention to some aspect of the shared existence of social actors. As Taylor (1993) argues, human knowledge and understanding are based upon the unarticulated background of the ‘ready-to-hand’, that is, the taken-for-granted understandings that constitute the web of human relationships. This has profound implications for the commonly held conception of knowledge. Accordingly, Winograd and Flores (1986; p. 74) point out that "knowledge lies in the being that situated us in the world, but not in a reflective representation." Thus individual knowledge is possible because of the social practices actors engage in. However, it is clear that social practices are not an aggregation of individual experiences; rather they constitute the set of background distinctions that underpin individual action. In addition, actors are socialised into institutional practices and this involves internalising the set of background distinctions that constitute such practices (see Brown and Duguid, 1991; Taylor, 1993). Knowledge is therefore open-ended and its creation goes far beyond the mere processing of knowledge-informing data.

**Working on Data not Knowledge**

Von Foerester (1984: p. 193) states “information is the process by which knowledge is acquired.” However, texts, documents, computer files, databases etc. merely provide data. Why? Individuals become informed through the process of interpretation and the application of individual ‘foreknowledge’ (Introna, 1997). Therefore as a text (and social action is here included) is read and interpreted it informs. So, from a hermeneutic perspective texts and narratives contain data that when interpreted inform to the recipient. Hence, information is abstract and ambiguous in its depiction, data is all that can be
represented, stored, transferred and manipulated by media such as ICT. Ultimately, all that can be said of knowledge then is that it is always in a process of becoming, extending beyond itself (Fransman, 1998). This ‘becoming’ refers to different interpretations or meanings attributed to data derived from the multi-voiced dialectic that takes place within and between social actors who are embedded in cultural contexts that are historical, on the one hand, and that are oriented toward the future, on the other (Bruner, 1990).

A Conceptual Model and Taxonomy of Individual Knowledge in Organizational Contexts

It has already been established that the two basic components in a social actor’s knowledge are phronesis and techne. Coupled with the tacit knowledge that arises from the unarticulated web of social relationships, these types of individual knowledge combine to provide social actors with a unique stock of knowledge and ‘worldview’. Nordhaug’s (1994) taxonomy of organisational competencies is of particular interest here as it indicates the focus and application of individual phronesis and techne in institutional ‘communities of knowing’. It has therefore a particular relevance to the present study as it contributes to the formulation of taxonomy of individual knowledge within organisational settings (see Figure 1). By way of representing the various dimensions of phronesis and techne in finer granularity, the taxonomy of knowledge presented captures what is regarded as organisational knowledge from an individual perspective. In Figure 1 the term specificity refers to the degree to which an individual's knowledge is general or specific1 to

(a) the execution of organisational tasks; (b) the organisation itself; and (c) the industry the organisation competes in. For example, meta-knowledge, which is general background knowledge and which possesses a significant tacit component, can be used in the performance of a range of organisational activities—social and technical. Examples of meta-knowledge are individual literacy, knowledge of a foreign language and so on. This type of knowledge is also generally available within the firm and the industry as a whole: nevertheless, the widespread possession of such knowledge by individual actors is important for an organisation’s general ‘stock of knowledge’. Industry-based knowledge is also a general type of knowledge, widely available to individuals in their role-related organisational activities, across both firms and industry. It is not specific to either organisations or any individual organisational tasks as such; it is, however, highly industry specific. Examples of this type of knowledge are knowledge of the industry structure, its current state of development, and of the key individuals, networks, and alliances in an industry. Intraorganizational knowledge is highly firm and industry specific but is not specific to organisational activities or tasks. In effect, this component of social actors’ knowledge is firm-specific meta-knowledge. Examples are: knowledge about colleagues, knowledge about elements of the organisational culture, communication channels, informal networks, knowledge of the firm's strategy and goals, and so on. Standard technical knowledge is task specific, industry and firm non-specific and involves a wide range of technical, operationally oriented knowledge that is generally available to all categories is a fundamental tenet of human capital theory (see Nordhaug, 1994).

---

1 The classification of knowledge into general and firm specific
actors. Examples are: knowledge of financial and management accounting practices, knowledge of computer programming and standard software packages, and knowledge of craft and engineering principles and methods. **Technical trade knowledge** is task specific, industry specific and is generally available among firms in an industry: examples of such knowledge are knowledge of automobile construction methods, knowledge of the techniques of computer hardware construction, and so on. Finally, **unique knowledge** is specific across all dimensions and applies to the possession by social actors of knowledge—self-knowledge and skills-based knowledge—of unique organisational routines, production processes, and IT infrastructures, to mention a few. Although an in-depth empirical analysis is beyond the scope of this paper, the following empirical example highlights its relevance as for IS researchers.

**There is nothing new under the Sun …and this includes Knowledge Work!**

The newspaper business could be described as the archetypal knowledge industry. Today, as 100 years ago, the raw material of this industry is data, gathered as it is from multifarious knowledgeable sources and processed using the experiential knowledge and skills of newspaper editors, journalists, copy editors, imaging specialists, printers etc. During the 1970’s and early 1980’s technologies appeared that radically altered the manner in which newspapers were produced: this transformation continued on into the late 1990s. In a previous study (see Butler and Murphy, 1999), the author examined the impact of information and communication technologies (ICT) on the business processes of two organisations—News International Newspapers Ltd. and Examiner Publications Ltd.—who were, and still are, industry leaders in the application of ICT in the UK and Ireland respectively. Here, it was reported that in the late-1980s, and again in early 1990s, new IT-based editorial systems, based on GroupWare-like Windows-based technologies, gave journalists and editorial staff the WYSIWYG and based knowledge capabilities to edit and compose newspaper pages online. Associated activities in the advertising, imaging, printing and distribution also saw radical change. Thus, the basic production processes in both firms were transformed, and by the late 1990s, sophisticated web-enabled database technology saw newspaper workers have speedy access to vast organizational data archives—both text- and image-based.

According to conventional wisdom, now that newspaper workers increasingly employ ICT to perform their business activities, they can be accorded the title knowledge workers. Is this assertion accurate? This paper argues not, and presents evidence to the effect that before the introduction of ICT newspaper workers were in effect knowledge workers. Yes, newspaper workers now possess ICT-related technical skills in addition to the existing **standard technical** and **technical trade knowledge** associated with their profession. However, all that has happened in newspaper firms in the wake of the introduction of ICT is that the **phronesis** and **techné** of skilled craft workers, in what were the composition, typesetting, engraving and print room functions of the organizations studied, were, for all intents and purposes, redeployed to the editorial and imaging processes; although it is true that some activities were automated out of existence. Yet, outmoded as they may now appear, it is undeniable that these labour intensive functions relied on the application of sophisticated **meta-knowledge, industry-based knowledge, intraorganisational knowledge, standard technical, technical trade, and unique knowledge** (see Cooley, 1987). A closer look at the editorial process will help illuminate the arguments made here.

Today, editorial staff still plan the format of each newspaper edition page-by-page, story-by-story, taking into consideration such issues as the layout and positioning of copy, photographs and advertisements, while sub-editors prepare final copy etc. Using sophisticated page make-up systems social actors no longer perform these activities using pen and paper (although the initial page-layout activities often are). However, the ability of ICT to integrate tasks formally performed by skilled blue-collar workers into the editorial processes has undoubtedly made this process much more complex than previously. Comments by a senior sub-editor in one of the firms studied sheds light on the issue.

Before we acquired the page make-up system we did the page layout using pen and paper—you know, roughly specifying where titles, photos, ads and copy would appear on each page. I suppose that over time editors and copy ‘subs’, like myself, built up mental images of how pages should look and we used our tacit experience of the of the page makeup process to help us to draw up layout specifications for the compositors in the case room who then manually composed each page. You know, they cut and pasted the bromide text galleys outputted from the old System VI computer onto the boards that would be used to generate printing plate negatives. Looking back, the manual lay out and integration of news and feature items with photos and ads was a challenging task, much more so than now. The new editorial system makes all this a lot easier and allows several of us to work cooperatively on the same page at the same time. The flexibility provided by the new system also allows us to accommodate late-breaking news items and photos. We are also able to optimize the word length of articles and the placement of news items/features, so as to maximize page content and/or maintain the what is referred to as the ‘house style’…that was a big headache before, not any more.

2003
It is clear from this statement that experiential knowledge and skills (*phronesis* and *techne*) of newspaper workers lay at the foundation of newspaper production prior to the introduction of today’s sophisticated technologies. What we see happening with the introduction of ICT is that new skills have been acquired, but existing experiential knowledge and skills were still of value. A further quote will illustrate this point.

When the case room was closed, the guys who came over made the transition easily enough: they made great copy ‘subs’ and image specialists, some became reporters. They knew how to get the most from the new system because of their practical experience in doing the page makeup manually. In fact, we have asked [the software vendor] to modify the system as a result of our experience with it.

Nevertheless, it was clear in both cases that the introduction of new technology had some negative consequences, as the editor of one paper pointed out:

Strangely enough, the downside of the new system is that because it has made us more productive, we are expected to do more and more. OK, so making our print deadlines is much easier, but because the system allows us to print supplements etc., there are more deadlines to be met...I often wonder if we haven’t traded quantity for quality in all this. What do I mean? Well, the overall physical quality of our newspapers, in terms of their overall appearance, has improved beyond all recognition. Our titles look better, there are far less typos, and so on. But now its all form and no content: that is, when I started we put more time into the quality of the content, you know, the copy. Back then I suppose we were not swamped with so much information and so on coming in over the wire. We print more pages now, more information for the masses; and we sell more papers, but I feel that quality of our journalism has been eclipsed by the technology we use.

Thus, while ICT has made certain outmoded and labour-intensive skills redundant, it also provided an opportunity for the experiential knowledge of social actors to be applied in new innovative ways using the technology. Nevertheless, the power and utility of the technology, in terms of its ability to increase productivity, had the unintended consequence of lowering the journalistic quality of the titles. Mike Cooley (1987) made this very point in his ground-breaking book *Architect or Bee?* Here, Cooley offered a critical analysis of the human price of technology, and while some of Cooley’s fears have been vindicated, others haven’t. For example, as previously illustrated, technology has been an occasion for both the development of new experiential knowledge skills and the transfer of older experiential knowledge and skills to new arenas. In the context of the taxonomy presented herein, it is clear that the *standard technical* and *technical trade knowledge* have been transformed in both firms. All this has meant a considerable change in the *unique knowledge* of both social actors and firms. For the firms studied, this has led to the development of a sustainable competitive advantage in their chosen markets.

**Conclusions**

An understanding of *phronesis* and *techne* is, we believe, essential to an understanding of knowledge work. If the observation that *phronesis* and *techne* constitute the practical components of individual knowledge is accepted, then any who apply them in institutional settings can be considered knowledge workers. However, this definition could apply also to workers in pre-industrial and industrial settings. Certainly, the appearance of ICT in the post-industrial age has led to the development of IT-related knowledge and skills by many workers. One example here is professional workers employing personal productivity tools, such as spreadsheets and DSS; another is scientists and practitioners developing skills in the use of sophisticated technologies to develop new understandings of natural or social phenomena. But this in itself does not make these individuals any more or less knowledge workers than their industrial or pre-industrial predecessors. What does, then? Many clearly feel that the quantity and quality of data that can be stored, accessed, communicated, analyzed and processed by contemporary workers using ICT renders the work they perform a special status—i.e. knowledge work. Maybe it does. And maybe this is why academics and practitioners now accord to data the status of knowledge. In contrast, the argument presented in the second section of this paper illustrates that knowledge, unlike data, cannot exist outside the heads of knowers, and that such knowledge has an explicit social context. In the context of ICT, so-called knowledge workers work on data, not knowledge. However, it is clear that all-pervasive Taylorist prejudices against workers has led to a focus by decision makers on the management of, what has been posited as, ‘objective knowledge’ in and by ICT rather than attempting to leverage the ‘subjective knowledge’ of workers—which is the real and only source of organizational knowledge. Thus, like the emperor in the fairytale, practitioners have been duped by consultants and academics into believing that there is something special in the ‘knowledge management paradigm’. What can and should be managed are workers and the data they create, collate, and disseminate: but stating the obvious wouldn’t make many consultancy dollars or help have papers accepted for publication. How then can researchers in the IS field begin to understand what is happening in organizations where workers employ information and communication technologies in innovative ways? Taken in the context of the theoretical argument articulated in the foregoing...
sections, the model and knowledge taxonomy presented in the fourth section should act to ‘inform’ researchers who seek to understand the know-how, -why, and -what of social action in organisational settings. Accordingly, it highlights areas where experiential and skill-based knowledge are of value in organizations and recognizes the relative importance of task and firm specific knowledge.

References