

Chapter XIV

Distributed Knowledge Management in Healthcare

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ABSTRACT

This chapter introduces and reviews the concept of distributed knowledge management within the Healthcare environment and between Healthcare and other partner organisations. As management should not be mistaken for control, distributed should not be identified with multicentered. Trade-offs between managerial centralism and social contextuality should be allowed. Although the core issues in knowledge management are not technological, tools that can support the central versus social dualism of knowledge management are critical to the effective and appropriate use of generated knowledge. Information tools can significantly affect the user experience and local social wiliness to participation and enhance the managerial trends that make use of knowledge networks and shared logistics. They include service-oriented architectures (SOA), artificial intelligence networks (AIN), multiple agent systems (MAS) and the contextual tools of Web 2.0. All of those tools feed their functionality on the semantic detail, the granularity and the trust levels enjoyed by their information sources.

The Working Nature of Knowledge

How much of an individual's knowledge is really personally developed and independent of its environment? Personal knowledge is guided by and in dynamic balance with other community

or organisational knowledge. The definition of knowledge it self points to a higher degree of subjective elaboration of information and data originating in facts, procedures, concepts, interpretations, ideas, observations and judgements (Alavi & Leidner, 1999). We could consider

organisations and communities as the subject in the aforementioned statement thought the internalisation and capture of knowledge by an individual relies strictly on cognitive elements, such as perspectives, beliefs, skills and expertise. Alavi and Leidner identify data and information as being of different nature to knowledge and suggest indeed that “knowledge is information processed in the mind of individuals: it is personalized information (which may not be new, unique, useful or accurate)”. Tuomi (Hoffmann, Loser, Walter, & Herrmann, 1999) proposes an inverse hierarchy that requires knowledge to exist before data can be collected and information can be formulated; knowledge does not exist outside of a “knower” and when “articulated, verbalised and structured becomes information which, when assigned a fixed representation and standard interpretation, becomes data”. The intercurrent theme in the aforementioned definitions is that all the components of what we commonly call knowledge, including information and data elements, have strong contextual attributes. Knowledge, information or data deprived of their contextuality are inevitably hampered by imprecision and loss of therefore their relevance and trustworthiness is directly dependent on the degree of contextual use.

For an organisation the process of knowledge capture and creation is an expression of formalisation of procedures that are well documented and which are usually crystallised in tandem with factual knowledge in a rather abstract manner. This organisational knowledge product is often generalised and involves some degree of abdication of the fine context from where the original information was obtained. The degree of context tolerance a knowledge base suffers is related to the aimed audience spread and it is proportional to the topic’s contextual variability. For example, if for knowledge base we consider an operational manual of a blood gas analyser (devices mostly stationed in high dependency hospital wards), the relevance of the material will be higher to its

audience if that manual is specifically written for specialist intensivists instead that when it is written for an audience that includes non specialist doctors and nurses. Similarly the manual will be more relevant if it is just written for a specific type and version of a blood gas analyser device and in the specific context of an adult medical intensive care unit in a specific hospital. In the contrary if the manual is abstracted to include all the types of blood gas analysers in any sort of high dependency unit in the country, its contextuality to machine and environment specifications is compromised and its relevance reduced. The latter type of organisational content abstraction although useful for the purpose of aim acquisition and standard level consolidation in procedures and outcomes it is fairly irrelevant to the end user both in terms of process and factual knowledge. That is why overarching guidelines and protocols are often reproduced and adapted to local applications, in an activity that can be compared to a vertical Delphi cycle. Closing this cycle, from the social stage to the central stage, is only possible by centripetal knowledge collection and comparison techniques, like audits, quality schemes or surveys.

Organisational Knowledge and Distribution

High-level consolidation of organisational knowledge and information is useful to the enterprise and the society. It can offer the basis for auditing, monitoring, comparisons and standardisation. This sort of collective knowledge is social, since sociality is the precondition for something to be a meaning (Bonifacio, Bouquet, & Traverso, 2002). Groups and people continuously negotiate common perspectives of local, contextual knowledge (perspective making) (Boland JR & Teknasi, 1999) and try to understand in each domain how the matter looks like from a different perspective (perspective taking) (Boland JR & Tenkasi, 1999), (also respectively called single and double loop learning (Argyris & Schoen, 1978)). High-level

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