

Empowering Role of Enterprise Information Portals in Knowledge Management

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Keywords

- knowledge management
 - enterprise information portals
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The increasing role of enterprise information portals (EIPs) in different applications of information including knowledge management (KM), makes it a necessity to elaborate the issue in a more serious and scientific way. The contribution and role that these kinds of portals have in empowering KM made us to provide a theoretical framework through offering a conceptual basis for present and future KM trends. This paper broadens a perspective through which EIPs capabilities in KM come under consideration by those who are busy with their content management tasks. The perspective regarded here is more theoretical rather than technical.

The exchange of knowledge, materials, energy and people; the blending of cultures; and the dissipation of geopolitical boundaries are to a great extent the result of trans-national business operations. Accessing, evaluating, managing, organising, filtering, and distributing information in a manner that is useful to end users, involves KM in blending a company's internal and external information and turning it into actionable knowledge via a technology platform [1].

Among different kinds of technologies invented or provided for the mentioned above objectives, perhaps no one would be more helpful than the Internet. The Internet and its various applications have made many tasks easier than what they were in the past, including KM. For many companies and their staff nothing is important more than managing the information or knowledge they possess. The World Wide Web has come to help these people and meet their information needs in an easy way. Usually every company has its own website on the Internet offering online information services to its members and clients. The more useful such web-based services would be, the more added values will be shifted towards users and more profits will be brought for the company in long term. So what kind of solution would be the best for such a purpose?

There have been many examined methods or solutions, but the increasing usage of EIPs has proved companies with the most appropriate way of offering web-based services on a given subject to a defined class of users. EIPs' applied characteristics which empowered role of KM.

There are three categories of business processes [2]:

- i. Operational Business Processes
- ii. Knowledge Processes
- iii. Knowledge Management Processes

Operational processes are those that use knowledge but, apart from knowledge about specific events and conditions, do not produce or integrate it.

There are two knowledge processes: knowledge production, the process an agent executes that produces new generalising knowledge, and knowledge integration, the process that presents the new knowledge to agents comprising the producing agent.

According to Firestone, knowledge production process is made up of four task clusters (or sub-processes) [2]:

- i. Information Acquisition
- ii. Individual and Group Learning
- iii. Knowledge Claim Formulation
- iv. Knowledge Claim Evaluation

Knowledge integration is made up of four more task clusters [2], all of which may use interpersonal, electronic or both types of methods in execution:

- i. Knowledge and Information Broadcasting
- ii. Searching/Retrieving
- iii. Knowledge Sharing (peer-to-peer presentation of previously produced knowledge)
- iv. Teaching (hierarchical presentation of previously produced knowledge)

Among the eight sub-processes above, it is important to remember that individual and group learning is itself knowledge processing. Individual and group learning produces knowledge claims for consideration at higher levels of analysis of knowledge processing. But at both individual and group levels, learning is knowledge production, and depending on the group level, all the four task clusters are involved at this level.

3

Knowledge Outcomes

Knowledge processes, of course, produce outcomes. From a managerial point of view, knowledge is an encoded, tested, evaluated and still surviving structure of information that helps the adaptive system (agent) that developed it to adapt.

Two types of knowledge are important in organisations [2]:

- (1) Tested, evaluated and surviving beliefs or belief predispositions (in minds) about the world, and
- (2) Tested, evaluated and surviving, sharable (objective), linguistic formulations (knowledge claims) about the world.

There are also other outcomes of knowledge processes, the most important of which are knowledge claims about (1) and (2).

The various outcomes of knowledge processes may be viewed as part of an abstraction called the Distributed Organisational Knowledge Base (DOKB). The DOKB has electronic storage components, but it is more than that because it contains all of the outcomes of knowledge processing in documents and non-electronic media. And because it includes beliefs and belief predispositions as well, it also includes all of the mental knowledge in the enterprise.

4

Operational Business Process of Knowledge Management

Operational business processes are performed by agents who use previous knowledge in Distributed Organisational Knowledge Base (DOKB), both mental knowledge and knowledge in organisational repositories to make decisions. Sometimes the DOKB and an agent's perceived situation does not provide the answers it needs. A problem has arisen—an epistemic gap between what an agent knows and what it needs to know to participate in the business process. Such a problem initiates knowledge processing, specifically a new knowledge production process. Once the problem is perceived, there is a need to formulate tentative solutions. Those can come from new individual and group learning addressing the problem, or from external sources through information acquisition, or from entirely creative knowledge claim formulation, or, of course, from all three.

Where the tentative solutions come from and in what sequence are of no importance to the self-organising knowledge processing pattern of knowledge production. The only important thing about sequence here is that knowledge is not produced until the tentative solutions, the previously formulated knowledge claims, have been tested and evaluated in the knowledge claim evaluation sub-process.

Those agents receiving knowledge or information do not receive it passively, it represents an input that may create a knowledge gap and initiate a new round of knowledge production at the level of the agent receiving it. Integration of the knowledge, therefore, doesn't signal its acceptance. It only signals that the instance of knowledge processing initiated by the first problem is over and that new problems have been initiated for some by the solution. For others, the knowledge integrated is knowledge to be used—either to continue with executing the business process that initiated the problem or at a later time when the situation calls for it [2].

5

Knowledge Claim Evaluation

KCE is at the very center of knowledge processing and knowledge management. Think about it. Without KCE, what is the difference between information and knowledge? How do we know that we are integrating (broadcasting, searching/retrieving, sharing or teaching) knowledge rather than just information? And finally, how do we know that we are doing knowledge management and not just information management?

Knowledge management extends traditional business intelligence in the following ways:

- i. Integrated Access to Structured and Unstructured Data
- ii. People: Tracking and Analysing How People Use Information
- iii. Process: Delivering information to those who need it when they need it, building intelligence into a business process

Portals are positioned to become the means for supporting the information access and delivery required for knowledge management.

Corporate portals have taken the idea of consumer portals like Yahoo and Excite and adapted them for corporate intranets. Those portals partition the 'real estate' of the user's screen, running multiple applications side by side. The burden is placed on the user to sort any semantic inconsistencies between the meaning of information displayed in one part of the screen (via one application) and that on another part of the screen (via another application).

From the perspective of data access:

- i. Unstructured data: Portals enable users to search through corporate documents, primarily via full-text searching. The documents are formatted as HTML pages for display to the user.
- ii. Structured data: Business intelligence query/reporting tools provide the capability to build reports from structured data sources. The reports are formatted as static HTML pages and viewed through a browser-based portal.

6

Knowledge Life Cycle

That pattern is a life cycle, a birth-and-death cycle for problems arising from business processes.

The life cycle of knowledge is referred to as Knowledge Life Cycle (KLC). Every organisation produces its knowledge through the myriad KLCs that respond to its problems: KLCs at the organisational level of KLCs at every level of social interaction and individual functioning in the organisation. It is through the KLCs that knowledge is produced, and the organisation acquires the solutions it needs to adapt to its environment.

Organisations differ in the profile of their KLCs and acquire information in different ways. Organisations also differ in the patterning of their knowledge outcomes.

Knowledge Management is the set of processes that seek to change the organisation's present pattern of knowledge processing to enhance both it and its knowledge outcomes. That implies that KM does not directly manage knowledge outcomes, but only impacts processes, which, in turn, impact outcomes. For example, if one changes the rules affecting knowledge production, the quality of knowledge claims may improve, or if a KM intervention supplies a new search technology based on semantic analysis of knowledge bases that may result in improvement in the quality of models.

Impact of IT Applications on KM

When is an IT application a knowledge processing or management application, as distinct from an information processing or management application? Further, it supports KM to the extent that it supports the nine knowledge management processes.

Some may think that an IT application supports KM if it performs content management, or if it supports collaboration, or if it performs data mining. But the connection between those and other types of applications and knowledge processing and KM is at best indirect, and at worst very tenuous, because each such application may or not provide support for the knowledge or KM processes. In each case of an IT application, therefore, the connection from the application in question to knowledge processing and KM use cases must be demonstrated [2].

Portals, Knowledge Processing and Knowledge Management

The point we have made in connection with IT applications, in general, applies to enterprise information portals. Whether any particular portal product or solution supports knowledge processing and KM is not a question that the answer should be assumed. The answer instead should flow from careful analysis of the extent to which a product or solution supports the eight knowledge processes and/or the nine KM processes . . . and whether, in so doing, it aids knowledge management in enhancing the KLCs within an organisation, and with them the organisation's adaptive capability.

10

The Advent of Portals for Knowledge Management

How will portals support access to structured and unstructured data? Corporate users need to access relevant business data and information, whether structured or unstructured, alphanumeric or text. The problem is that structured and unstructured data have been managed separately with little or no thought to common access. Providing users access to multiple applications under the cover of an information portal also does not solve the problem. The key is providing the infrastructure to support unified access. Advances in content management, along with extensions to SQL-based queries, signal a new era of unified access to heterogeneous data. This will be the third wave of information portals in support of knowledge management [3].

Corporate portals begin to embed more advanced features, deepening the level of access and providing better information sharing.

Case: IBM's ongoing Project Garlic is, aimed at providing a federated search engine that could integrate (based on unified metadata) the results of structured and unstructured queries or searches. The results of that effort should emerge in various stages within IBM's DB2 database, Data Joiner and portal infrastructure software [3].

11

EIPs Facilitate Exchange among Communities of Interest

Although the principles of KM are broadly accepted, how to implement a KM project is a key sticking point. An integrated database or knowledge repository is often the first step along the KM path. Because KM should be part of everything an organisation does and part of everyone's job, the easiest way to implement a KM initiative is through networking. KM can be understood as a four-part, closed-loop process that returns a net gain of EIPs:

- i. Capturing knowledge: Ideas are synthesised in a memo, sales figures are reported in an e-mail and a list of corporate expenditures is placed in a relational database.
- ii. Analysing and cataloguing knowledge: Raw data becomes information when it is placed in a meaningful context. Categorisation is essential to the success of a KM solution because it provides a framework for other users to locate information. FAQs, 'best practices' documents and a corporate directory of experts are examples of codified knowledge.

- iii. Sharing knowledge: EIPs can encourage collaboration. Workers amend and update resources as they use them. That modification leads back to the first step of enterprise learning. Users loop their learning and new information back to a database. In that way, portals are built on knowledge bases that are relevant, focused and available to everyone in the company.
- iv. Creating knowledge: Most fundamentally, KM and information architecture are about enhancing capacities for knowledge creation.

Databases do more than provide a single point of entry for information and a single log-on. The database can be used to link people together and promote interactive problem solving. Integrated databases are important because they make the best insights of each employee available to all. That means that each worker has access to the collective wisdom of the organisation. Project archives, for instance, are an excellent way to encourage virtual teamwork and dialogue. They are clearinghouses where communities of interest have access to current and past project information. A project archive functions as an electronic work space that both stores information and provides a focal point for collaboration [4].

Companies can expect a variety of benefits from adopting EIP software and should detail their expectations when assessing their need for it and selecting appropriate vendors.

Companies considering purchasing EIP software should first consider their strategic goals, assess the availability of supporting capability currently in house, and create an RFP (Request For Proposal) detailing requirements to meet those goals.

As EIP software changes in scope and new entrants enter the market, new knowledge management capabilities will be incorporated into it. Features such as content visualisation, contextual collaboration and expert location will aid employees in finding an answer to their business problem. Delivery of content in the context of a business process will greatly decrease decision time. Additionally, business processes will be analysed, modelled and quickly deployed to allow for continuous improvement without extensive application re-engineering. EIP software can provide companies with a software platform to better manage knowledge and knowledge workers.

12

Conclusion

The turning point of this reality is laid in 'knowledge' and those methods people may use as their own way of 'knowledge management'. Portals in general and Enterprise Information Portals specifically have been appeared in the scope of KM as useful tools for design. Many of KM objectives that were met in the past through traditional ways are now being satisfied easily by EIPs. The main issue is that how these portals should be designed and how they should be used about the most profit. Nowadays many well-known companies are established to design and offer different kinds of EIPs with various capabilities. The major principles or criteria

that should be kept in mind while selecting portal software include: Retaining expertise of key personnel, increasing customer satisfaction, improving productivity, decreasing IT administration costs, decreasing product development cycles and supporting e-business initiatives.

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