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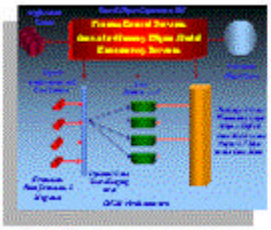

DKMS Briefs

Joseph M. Firestone

DKMS Brief No. Two: Prophecy: META Group and the Future of Knowledge Management

A META Group Verdict

META Group's prophecy on Knowledge Management (KM) is:

"SEARCHING FOR KNOWLEDGE (MGMT.) IN ALL THE WRONG PLACES

Despite significant knowledge management (KM) hype, we predict the "death" of KM as a discrete (product/service) entity after 2001. Indeed, successful KM must be integrated into specific business processes (e.g., sales, R&D) to support knowledge workers managing those processes. Users should avoid discrete consultancy KM offerings (currently, most are not tied to applications). While some firms (KPMG, Andersen Consulting) talk about integrating KM into broader offerings, only upstart AnswerThink has advanced further in this area. Longer term (2001/02), most service companies will integrate KM as a component of the business/information fabric. Bottom Line: Users must avoid generic/standalone KM service offerings and focus on KM needs of specific business practices and knowledge workers."

On the surface this seems like a moderate and sensible position, neither surprising nor unexpected. After all, aren't data management and information management integrated into specific processes? Why should KM be any different? Well, there are reasons. So let's dissect META Group's prophecy and see what the reasons are.

Will KM Be A Discrete (Product/Service) Entity?

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"death" of KM as a discrete (product/service) entity after 2001. Indeed, successful KM must be integrated into specific business processes (e.g., sales, R&D) to support knowledge workers managing those processes. Users should avoid discrete consultancy KM offerings (currently, most are not tied to applications). . ."

So this statement seems to mean that after 2001 no one will be interested in knowledge management systems applications, or knowledge management systems consulting apart from KM integrated in other applications such as sales, R & D, or accounting. At first blush this sounds right. After all, sales, R & D and other specific business processes do need knowledge and that knowledge needs to be managed, so it is easy to agree (and I do) that KM will be applied to these processes.

But to say that KM will not be a discrete product/service entity as well, is to say that KM itself is not a

business process, deserving of applications supporting that process, and of consulting relating to these. Does this conclusion make sense? Not to me, and not to anyone who thinks that KM is a distinct organizational business process.

To us, KM is a business process whose purpose is to produce, maintain, and/or enhance an organization's knowledge base. Like any other business process it has valued outcomes. Its outcomes are changes in an organization's knowledge base. We don't have to define knowledge base here [1]. But the production, maintenance, and enhancement activity constituting KM can be specified as planning, acting, monitoring, and evaluating sub-processes.

KM Planning means setting goals, objectives, and priorities in producing, maintaining, and enhancing knowledge; making forecasts about impact on the knowledge base as part of prospective analysis; performing cost/benefit assessments of alternative decision options as part of prospective analysis, and prospectively revising or reengineering the KM process. **Acting** means performing the KM process or any of its components. **Monitoring** means retrospectively tracking and describing the KM process. **Evaluating** means retrospectively assessing the performance of the KM process as a value stream.

Individual discrete KM applications are software products that support various aspects of these sub-processes. A comprehensive KM application is one that attempts to support all four sub-processes. What must such an application do?

In the Planning sub-process, it must do four things:

- ***First,*** it must help planners to clarify, and perhaps even create, a hierarchy of goals and objectives in producing, maintaining, and enhancing knowledge
- ***Second***, it must support planners in placing the goals and objectives in an action-effects context where objectives may be viewed as actual or potential effects of actions
- ***Third,*** it must help planners identify and assign role responsibilities for controlling the KM process that planning is a part of, in this instance knowledge management
- And ***fourth***, it must support delivering and disseminating planning results, in this instance, planning-related knowledge to the acting sub-process to support decisions

In the Acting sub-process, it must do five things:

- ***First,*** it must provide IT support for cataloging knowledge resources external to the knowledge base, but either external or internal to the organization
- ***Second*** it must support building the IT and office backbone for knowledge management
- ***Third*** it must support directly creating, maintaining, or modifying the knowledge base. An important aspect of this requirements area is Knowledge Discovery in Databases or KDD
- ***Fourth*** it must support delivering, disseminating, or communicating the knowledge base to other business processes, to knowledge managers, and to knowledge consumers
- ***Fifth*** it must support educating, training, or re-skilling organizational personnel so they can manage the knowledge base, use it, and extend it.

In the Monitoring sub-process it must do three things:

- ***First,*** it must support selecting, retrieving, and displaying descriptive knowledge from the knowledge base
- ***Second,*** it must support selecting, retrieving, and displaying impact-related knowledge from the knowledge base
- ***Third,*** it must support selecting, retrieving, and displaying predictive knowledge from the knowledge base

Finally, in the Evaluating sub-process it must do four things:

- ***First,*** it must support assessing actual knowledge-related outcomes against KM tactical objectives

- ***Second,*** it must support assessing forecast outcomes against forecast objectives
- ***Third,*** it must support assessing knowledge-related benefits and costs of past and current KM activities relative to their impact
- ***Fourth,*** it must support assessing knowledge-related benefits and costs of future KM activities relative to their forecast impact

This is an extensive set of requirements for defining comprehensive discrete KM applications. It is also a distinctive set of requirements since it is focused on an organization's knowledge base and on producing, maintaining and enhancing it over time.

You may notice that except for the focus on knowledge, as opposed to data or information, the sub-processes and requirements look similar to alternative sets that might be developed for data or information. But this surface similarity hides the very important difference that KM sub-processes and requirements focus on managing the production, maintenance, and enhancement of ***validated information,*** rather than information in general, or just data [2]. This change in focus is the essence of the difference between such a KM application, and a comprehensive database application such as a data warehousing system, or a comprehensive information management application which might be a more advanced information warehousing application.

Previously, I introduced a name for such a KM application and provided a formal definition [3]. The name is ***Distributed Knowledge Management System (DKMS).***

A DKMS is a system that manages the integration of distributed objects into a functioning whole, producing, maintaining, and enhancing a business knowledge base. A business knowledge base is the set of data, validated models, METAmodels, and software used for manipulating these, pertaining to the enterprise, produced either by using a DKMS, or imported from other sources upon creation of a DKMS. A DKMS, in this view, requires a knowledge base to begin operation. But it enhances its own knowledge base with the passage of time because it is an adaptive, self-correcting system, subject to testing against experience.

The DKMS must not only manage data, but all of the objects, object models, process models, use case models, object interaction models, and dynamic models, used to process data and to interpret it to produce a business knowledge base. It is because of its role in managing and processing data, objects, and models to produce a knowledge base, that the term Distributed Knowledge Management System is so appropriate.

The DKMS is the discrete comprehensive application that supports the KM process. To evaluate the META Group prophecy of the "death" of discrete KM product/services after 2001, we need to consider whether DKMSs are likely to die. Not only do I think that this prophecy is incorrect, I also think DKMS applications are at the very beginning of their life cycle. As I indicated in some recent papers [4], DKMSs are just now evolving as applications with distinctive architectures. And since they promise to solve the continuing problems of enterprise wide integration of knowledge assets, I think, in stark contrast to the META Group, that they will be with us for the foreseeable future, and will be the foundation for very large product and consulting businesses.

Are There Really Only a Few Consulting Companies Integrating KM Into Their Business Fabric?

"While some firms (KPMG, Andersen Consulting) talk about integrating KM into broader offerings, only upstart AnswerThink has advanced further in this area. Longer term (2001/02), most service companies will integrate KM as a component of the business/information fabric."

While this seems true at first blush, we should remember that KM is a relatively new organizing concept for applications and consulting. The concept may be "hot" as a slogan right now. But there is not even consensus on a definition of the concept; so it is hard to know whether KM is or is not getting integrated in consulting. I believe KM is getting integrated piecemeal and organically, through the adoption of many of its necessary

elements.

More specifically, first, the widespread adoption of object technology is a necessary condition for the emergence of KM, because knowledge components are much more easily expressed as objects than in other forms.

Second, another key factor is the increasing popularity of Knowledge Discovery in Databases and Data Mining, and the integration of KDD capabilities with distributed DSS systems. This factor is very important because of the emphasis in KDD on validating information to arrive at knowledge. By integrating KDD with distributed DSS we are also committing DSS to knowledge production through information validation, and this is a central aspect of KM.

Third, the emergence of partially web-based distributed object computing through Java, CORBA and DCOM is another necessary condition for supporting KM, because much of KM involves gathering information from various sources, transforming it, moving it, validating it, and displaying it; and distributed object technology is necessary to do this well.

Fourth, is the emergence and evolution of more complex data warehousing/DSS systems. These systems require data management, of course. But increasingly, they also require information management and knowledge management. In the first column in this series, and in an earlier white paper [5], I presented a Distributed Knowledge Management/Corporate Knowledge Factory Architecture, as new alternatives to current data and information-based architectures. This architecture represents evolutionary development in data warehousing to allow management of the Dynamic Integration Problem [6].

Fifth, there is also the development of enterprise integration applications [7]. These bode very well for KM, because many KM use cases need a high level of integration to be properly performed.

In short, I think the truth is that many consulting companies involved in these technological developments are adopting the elements of KM. It may seem that KM is not being widely incorporated, because few companies are recognizing their evolution toward it. But evolving they are, and as the paradigm of KM continues to emerge, they will understand that their evolution conforms to this paradigm, and that they are no longer doing just data management, or even information management, but actually KM which transcends and includes both.

Should Users Avoid Generic KM Service Offerings?

"Bottom Line: Users must avoid generic/standalone KM service offerings and focus on KM needs of specific business practices and knowledge workers."

If you accept the view that KM is not a business process, this "bottom line" makes perfect business sense. But if you believe KM is such a process, you'll want application and service offerings that address an organization's KM process in both its generality and specific detail. That is, you'll want enterprise wide KM as well as specific practices KM, and you'll want to improve KM across all of its planning, acting, monitoring, and evaluating sub-processes. And finally, you'll want to implement DKMS because it is the ultimate KM application for supporting KM as a business process. Of course, you'll want both specific and generic KM service offerings to help you with all this.

What's The Real Future of KM Product/Service Offerings?

I've said enough to indicate that the real future is not the passing of KM as just another fad, but its acceptance as one of the major orientations in Business Process Applications and consulting. DKMS applications and consulting related to them will eventually follow the path of DBMS applications. We will have horizontal DKMS applications and area specific DKMS applications applied to Sales, Marketing, Financial areas,

Manufacturing, and all the specific areas to which data warehousing is applied now. In the horizontal DKMS area we will begin to develop DKMS templates analogous to the DBMS templates (that's what products like Oracle, Sybase, DB2, etc. really are) we use now. But the new DKMS templates will offer a much wider range of services than our DBMSs do. What they will look like is more closely approached by the cross-vendor product suites we currently see in data warehousing. But they will be much more integrated, make much more comprehensive use of object technology, and will provide much more KM process control than these suites do today.

References

[1] See Below P. 4 and "Basic Concepts of Knowledge Management," White Paper No, Nine at http://www.dkms.com/White_Papers.htm.

[2] I've discussed the distinctions in DKMS Brief No. One: The Corporate Information Factory or the Corporate Knowledge Factory?" at http://www.dkms.com/White_Papers.htm.

[3] I introduced the DKMS concept in two previous White Papers "Object-Oriented Data Warehouse," and "Distributed Knowledge Management Systems: The Next Wave in DSS." Both are available at http://www.dkms.com/White_Papers.htm.

[4 Ibid. also see "DKMS Brief No. One: . . ." and "Architectural Evolution in Data Warehousing," White Paper No. Eleven, at http://www.dkms.com/White_Papers.htm.

[5] Ibid. "Architectural Evolution . . ." and "DKMS Brief No. One. . ."

[6] Ibid. "Architectural Evolution . . ."

[7] See Template Software, "Integration Solutions for the Real-Time Enterprise: EIT - Enterprise Integration Template," Dulles, VA, White Paper May 8, 1998, at http://www.template.com. See also DAMAN's InfoManager (inquire at http://www.damanconsulting.com), and Ibex's DAWN workflow product along with its ITASCA active database (at http://www.ibex.ch/)

Biography

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