

MANAGEMENT OUTLOOK



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THE ROLE OF BUSINESS INTELLIGENCE IN KNOWLEDGE MANAGEMENT

Some industry buzzwords gain market acceptance, while others end up on the scrapheap. Business intelligence (BI) has gained acceptance (even though there are many definitions for it), but knowledge management (KM) has had a mixed reception. Knowledge management has struggled because organizations have often tried to implement large enterprise-wide knowledge management projects and failed, and also because of the complexity bringing together the many components and technologies involved.

I believe that knowledge management is at last viable and that business intelligence has an important role to play in knowledge management projects. The objective of this article is to explain why. Before proceeding further, I should point out that most of us, including myself, tend to be somewhat careless when using the terms *data*, *information* and *knowledge*. I will try and be as consistent as I can when using these terms in this article. Every time I try and define these terms in articles and presentations, however, I always get comments and e-mails disagreeing with my definitions. It is okay to disagree, but hopefully my definitions will at least ease the discussion in this article.

If you have read my previous newsletters, you will know that I view an IT system as supporting three types of applications and applications processing: business transaction (BTx) applications, business intelligence applications, and collaborative applications.

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BTx applications are responsible for running day-to-day business operations and store *data*, or *facts*, about those operations in a *data repository* that is typically managed by a database system. The database system allows applications and users to store, access and manipulate the BTx data.

Business intelligence applications analyze business operations and produce *information* to help business users understand, improve and optimize business operations. This information may be produced by analyzing and reporting directly against BTx data, but is more commonly done by processing the data stored in a data warehouse. A data warehouse provides the ability to gather data from various BTx data sources and integrate it into a single data repository. Like a BTx data repository, the data warehouse data repository is managed by a database system, which uses languages such as SQL and XQuery for data access and manipulation.

Business intelligence applications in the past have simply analyzed detailed data warehouse data and produced high-level summarized data, or *measurements*, about business performance. The recent trend, however, is toward the use of business performance management (BPM) applications that put these measurements into a business context, i.e., they relate the data measurements to business goals and objectives (See Figure 1). Putting performance measurements into a business context improves the busi-

ness decision-making and action-taking processing because the results become *actionable*. If you know that today's sales figures are 10 percent below target, then you can decide how to fix this problem and take the appropriate action.

Putting the measurements into a business context creates business *information*. This information may be embedded in enterprise portal web pages, documents, spreadsheets, presentations, audio, video, e-mail and so forth. It may be stored and managed in a data repository, but it is more commonly stored in a *content repository*. A content repository supports additional business semantics (i.e., business metadata) like author, date produced, etc., compared with a data repository. It also adds facilities like versioning, workflow, templates and search tools. Like a data repository, a content repository is managed by a database system.

When business users receive information from a business intelligence system they use their expertise or *knowledge* to make decisions and take actions. The decision-making and action-taking process may involve interaction with other users. This interaction is supported by collaborative applications and processing. This approach to decision making can be considered to be a *non-programmed* approach. If, however, the knowledge of the business user can be captured as a set of best business practices in the form of a set of business rules, then the decision-making and action-taking process can be *programmed* or *automated*.



When business users make decisions and take actions they use their business knowledge to tie the actionable information to the business processes and activities they are responsible for in their role in the organization. The ability to relate information to business processes is very important. Unfortunately, this aspect of the decision-making process is poorly supported by BI applications and BI vendors because the developers of these applications and software have a data-centric viewpoint of business operations, rather than a process-centric perspective. This deficiency, however, is starting to be addressed.

The ability to relate actionable information to business processes also provides the

foundation for other ways of automating decision making and action taking. Less experienced business users (support representatives in a support center, for example) could be given a guided-analysis workflow (developed by business experts and based on best business practices) that helps them interpret actionable information, discover additional information, and make the right decision to fix business problems, optimize business processes and satisfy customer needs.

The diagram in Figure 1 demonstrates how knowledge management can help business users improve business processes. You can see from the dia-

gram that business intelligence plays a central role in knowledge management. For a traditional BI system to fully support a knowledge management environment, however, it must provide, or work in conjunction with, capabilities like business process management, business planning software, collaborative software, portals, content management systems and be able to support more timely data feeds (See Figure 2). The result is what I call a *smart BI framework* (See Figure 3). The term smart knowledge management framework could have been used, but as I have already mentioned, the knowledge management term has some baggage associated with it. SOURCE: COLIN WHITE

Figure 1. The Knowledge Cycle.

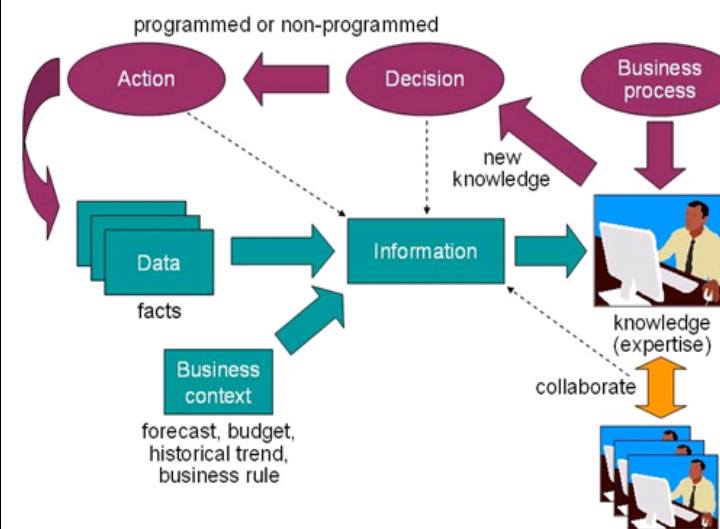


Figure 2. Knowledge Management Technologies.

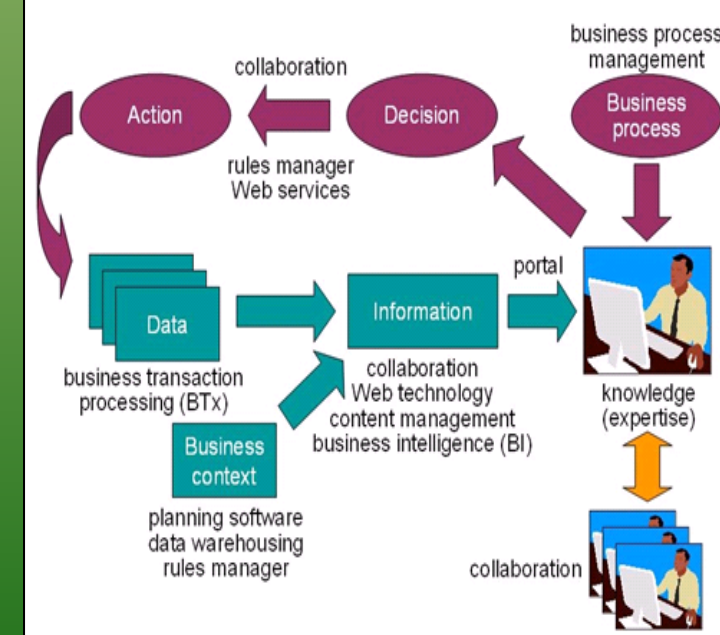
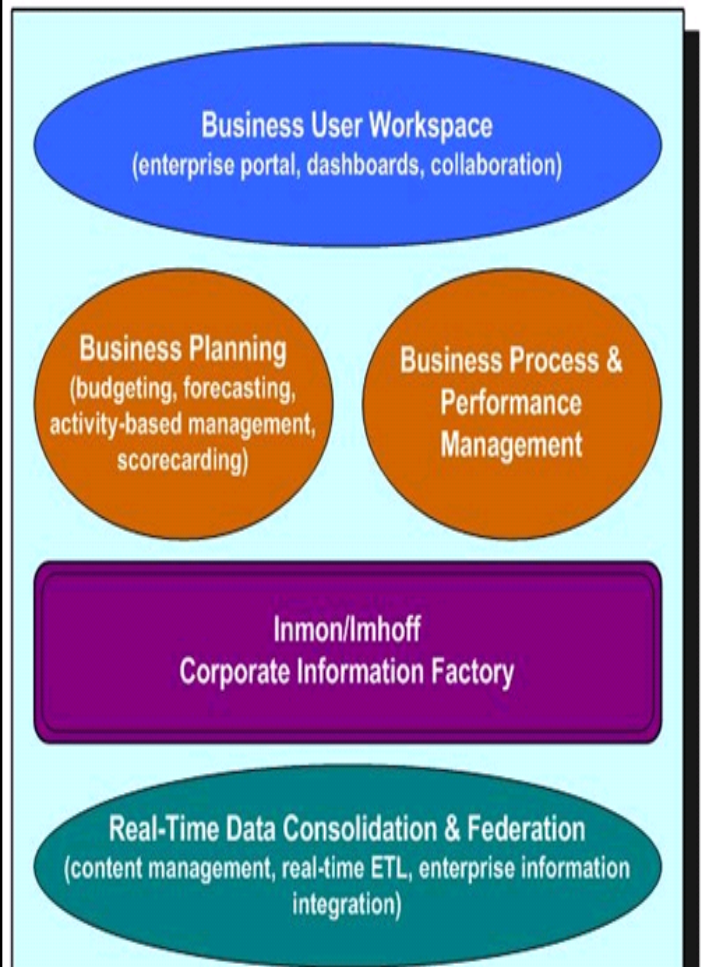


Figure 3. The Smart BI Framework.

The Smart BI Framework

Extending the Corporate Information Factory to Support the Smart Business



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