



Computer Associates

Building a Strong Foundation for Knowledge Management

An IDC White Paper

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Knowledge management (KM) initiatives are becoming popular, yet misunderstandings remain about KM's goals and critical success factors. IDC research shows that retention of key expertise is the major business driver for KM. Supporting this goal requires a thorough understanding of which operational area(s) and processes will be affected and which individuals need to be involved. The organization's level of preparation, the establishment of metrics, and the selection of technical applications are also critical success factors. When considering technology, organizations should first look to establish the infrastructure to capture and manage their information and knowledge assets: *KM infrastructure*. Then organizations should look to technologies that leverage this knowledge base — *KM access* — requiring the central management of user access via an enterprise information portal (EIP). Computer Associates' KM effort focuses on key technologies for KM infrastructure and KM access.

Knowledge Management Defined

KM is a formal "process" that evaluates a company's people, organizational processes, and technology and develops a solution to get the right information to the right people at the right time to improve productivity. KM solutions consist of software and services in support of this process.

IDC Opinion

How comprehensive is Computer Associates' knowledge management solution?

Computer Associates recently aligned its product offerings along three solution areas, with six primary focus areas for FY02. One of these focus areas, *portal and knowledge management*, provides technologies and services for managing knowledge across industries. With its applications, tools, system management software, and technology implementation services, Computer Associates is building a strong foundation for knowledge management.

KM Solutions: Software

The software can be classified into knowledge management infrastructure and knowledge management access:

Knowledge management infrastructure is the base or platform upon which KM solutions are built. It consists of the population and management of the repositories for unstructured data (document and content management), structured data (data warehousing generation and management), and business processes (models and best practices). Also part of the infrastructure is groupware to provide the support for collaboration (needed for knowledge sharing) and messaging (including email and other forms of interpersonal communication).

Knowledge management access builds on the KM infrastructure to provide individual and group access to a knowledge base. It consists of EIPs and advanced searching and Web-based query for providing access to both structured and unstructured data, augmented by KM tools. Intellectual capital management software builds and manages employee competencies inventory; supports process improvement, definition, and capture; and monitors and measures improvements in process. Other KM tools provide insight into how individuals and groups access information and monitor what information they create for the purpose of profiling sources of tacit knowledge.

KM Demand

IDC forecasts the market for KM software to grow from \$1.8 billion in 2000 to \$5.4 billion in 2004, a compound annual growth rate (CAGR) of 22.2%. The KM access segment, including intellectual capital management, is forecast to grow from \$0.8 billion in 2000 to \$3.4 billion in 2004, a CAGR of 43.4%. The rapid growth highlights the increased understanding of the business benefits associated with the implementation of a KM solution.

The information required by employees to perform their jobs needs to be easily and quickly accessed to reduce the time and effort involved in decision making. The data may be locked in legacy systems, inaccessible and ineffective data warehouses, or in the heads of key personnel. Providing a strong KM infrastructure, beginning with intelligent design, will reduce information management costs and increase knowledge contributions and collaboration. Adding an EIP to access the information managed via the KM infrastructure enables ebusiness process participants to access applications and information, improving their effectiveness. As business processes are executed, expertise is retained for the benefit of the organization.

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A recent IDC survey of IT buyers involved in a KM initiative has found that companies are primarily seeking to retain expertise of key personnel and improve customer relationships (see Table 1). Capturing and sharing knowledge is a process IDC calls *intellectual capital management*. This process improves the return on human capital by making this know-how available throughout the enterprise. Improving customer relationships is a broad goal, but, in the context of a KM solution, it happens by analyzing customer data and then acting on this data. Continuously adapting and improving customer-focused business processes based on these customer requirements will improve relationships and, ultimately, profits.

Table 1
Knowledge Management Business Drivers

Q. What are the two most important reasons for adopting a KM initiative?

	Number of Respondents	Percentage of Respondents
To retain expertise of personnel	294	51.9
To increase customer retention/satisfaction	244	43.1
To improve profits/grow revenue	212	37.5
To support ebusiness initiatives	140	24.7
To decrease product development cycles	130	23.0
To provide project workspace	66	11.7
Other (specify)	54	9.5
Total	566	201.4

Key Assumption:

- Business benefits were presented for selection by the respondents to the survey.

Message in the Data:

- Respondents were qualified as IT buyers involved in a knowledge management initiative.

Source: IDC and Knowledge Management Magazine, 2001

Using KM Technology to Achieve Business Goals

The two primary categories of KM software, KM infrastructure and KM access, need to be integrated across the enterprise to provide the means to manage information and the capability to use the information. Content management, data warehousing, and collaborative applications, including email, provide much of the KM infrastructure needed by enterprises. EIPs are being rapidly adopted to integrate access to applications and information to meet the requirements of a KM initiative.

Computer Associates Delivers KM Technologies

Computer Associates (CA) delivers a wide range of software products in the areas of KM infrastructure and access. Individually, the products solve pieces of the KM puzzle, but using them together in a KM solution is more beneficial.

KM Infrastructure Software

CA's KM infrastructure software offers solutions for building data warehouses, managing metadata, and defining and improving business processes.

Data Warehousing

KM infrastructure software from CA provides companies with a way to manage the data warehousing process and the related metadata. Data warehousing is a process that brings together business transaction data from multiple sources into an integrated, time-based data store for the purposes of decision support and analysis. Managing the process requires the ability to manage the major tasks or steps that comprise the process:

- **Warehouse design.** This step involves designing a data model for the warehouse, organized to support query and analysis. CA provides the widely used *ERwin* tool for building the models and *ModelMart* for enabling team collaboration in model development.
- **Warehouse generation.** This step involves extracting, cleaning, and transforming transactional data from multiple sources and loading the data into an integrated analytical data store or warehouse. CA provides integrated solutions, including *DecisionBase Transformer* for data transformation support and bidirectional replication of data between heterogeneous databases.
- **Warehouse management.** This step involves managing the data store itself, including maintenance procedures and monitoring usage to ensure maximum performance and availability. CA software supports major administrative functions such as metadata management, performance tuning and monitoring, usage tracking, query management, job scheduling, backup/recovery, and security.

Metadata Management

Metadata management software manages key information about data, such as data definitions, including change control and dependencies of systems upon the data, through a metadata store or repository. CA provides the *PLATINUM Repository*, integrated with its major products for warehouse design, warehouse generation, and warehouse management, and it also supports change control and provides dependency tracking of major systems in their use of enterprise metadata.

Business Process Design

It is important for organizations to understand the processes that drive their business as part of their overall KM strategy. CA's *BPwin* enables a company to model, document, and improve its business processes. Its integration with *ERwin* can help ensure that the company's data architecture effectively supports its business processes.

CA also provides tools addressing specific types of processes, such as those used in application development. These tools capture and evolve a development organization's *best practices* and enforce their repeated use. Without such a tool, successful application development processes may be lost due to attrition.

KM Access Software

CA's KM access software offers solutions for accessing information and applications; analyzing, predicting, and reporting on business data; and improving customer relationships.

Enterprise Information Portal

For accessing information and applications, the company offers its EIP software, Jasmine Portal, which administers views into applications and information based on user roles. This role-based administration decreases the administration costs associated with deploying customized interfaces to ebusiness process participants in and outside the enterprise. Furthermore, user productivity and knowledge sharing increase as access to corporate data and the ability to publish to information stores is broadly enabled. CA's infrastructure software can be accessed along with other software and information through the portal.

Jasmine Portal is a Java-based EIP software product. It meets IDC's definition of an EIP by providing the following functionality inherently or through integration with third parties:

- Structured data management
 - Enterprise reporting
 - Metadata management
- Unstructured data management
 - Document review and workflow
 - Proactive information delivery
 - Document directory creation and management
- Search
 - Search across directories, documents, Internet, and reports
- Collaboration
 - Online meeting rooms
 - Internet chat and messaging
 - Community management
- End-user administration
 - Role management
 - Default end-user views

- Security
 - Authorization, authentication, and administration
- Personalization
- Application and information integration

Business Intelligence

For analyzing, predicting, and reporting on transactional data, CA provides a suite of business intelligence software tools that handle transactional data captured in legacy databases or data warehouses. This suite includes production and end-user reporting tools, as well as reporting solutions that can be embedded into a company's applications. For detailed analysis, CA provides a relational online analytical processing (OLAP) solution that can handle very large databases of information. And rounding out the CA business intelligence suite is an ad hoc query capability and an executive information system (EIS) application development solution.

End users can analyze data pertinent to their roles within the enterprise. Improved decision making and adaptability to changing trends benefit the organization deploying these technologies. These CA technologies are best leveraged when integrated with CA's EIP, Jasmine Portal. However, these benefits can accrue only when business intelligence is applied to a specific business process, such as customer relationship management (CRM).

Intelligent CRM and Predictive Analysis

CRM processes are the leading targets of KM initiatives, according to IDC research. The best-performing employees are frequently the ones who use information most effectively to achieve their objectives, such as sales reps knowing which customers to target or customer service reps knowing how to deal with challenging cases. Gradually, this expertise is being captured in packaged applications, supporting the KM goal of intellectual capital management.

CA's intelligent CRM and predictive analysis software is designed to analyze and react to customer behavior, comprising an important part of the CA KM solution. These application suites deliver information to the right people at the right time to improve customer relationships. Encompassing operational, analytical, and predictive CRM, CA's Intelligent CRM Suite offers an integrated approach to end-to-end customer management. For the information to be actionable, it must anticipate how customers will act in response to specific rules, policies, or recommendations that can be applied to govern and personalize operations. CA's Neugent technology (for predictive modeling) and Aion technology (for driving rules and policies) are a powerful combination that can be leveraged in building actionable, intelligent CRM solutions.

KM in and of itself can fail to meet broad goals. When it is applied to specific processes or goals, the benefits are easily measured and investments in supporting technology can be readily justified. While much of the design work that takes place in a KM initiative will address specific processes, it is important for a KM software vendor to offer more packaged solutions. CA's Intelligent CRM Suite achieves this goal.

Computer Associates: KM Opportunities and Challenges

The growing KM marketplace is a tremendous opportunity that CA is actively embracing. CA is delivering an impressive set of technologies for KM infrastructure and KM access that supports the goals of preserving expertise and increasing employee productivity.

Yet there are important challenges that must be met as well. The market still requires significant education on KM. The proliferation of definitions of KM, coupled with a historically academic approach, has caused confusion in the market. Through education and increased competition, CA will be well prepared to address the increase in customer demand for KM solutions.

While CA offers many of the technologies needed for managing knowledge, it needs to add technologies to its portfolio. Content management is one such example. CA can remain open to integrating and partnering with content management vendors as other KM software vendors are doing now. CA will surely explore the building or acquiring of additional technology as needed in the future.

Another area CA can exploit is leveraging its metadata management solution, PLATINUM Repository, into the overall KM picture. This area is not currently well served in the KM marketplace and may be a means for CA to further differentiate itself as a KM solutions provider. Further, partnerships can be established to augment its services offerings. CA provides services for implementing its technologies but not for helping firms deal with the organizational change and training critical to the success of a KM initiative. CA has chosen to partner with services firms that can fill this gap.

Conclusion

The market for KM solutions is strong and growing. A single vendor has not yet delivered a comprehensive technology suite to address the business needs of the KM technology buyer. The functionality within the KM infrastructure and access market segments is broad and will converge over time.

Computer Associates' KM solution provides an extensive array of technologies and services today that will position it among the technology leaders in the KM marketplace. CA is leveraging its background in security, system management, and business intelligence to good advantage and is building a strong foundation for the future of KM.

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