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On Bob, MP3 and Business Imagination

By Andy Moore, Editorial Director, KMWorld Specialty Publishing Group

There's a great ad campaign running right now by IBM. The ad shows two lists: on one side of a line is a list of the things that "We Know"—e-Business, Global Infrastructure, Implementation, Middleware, Consulting, yadda yadda.

On the other side of the line is the list of what "They Know." The first thing on the list: "Bob." It struck me as funny at the time, and I tore it out of the magazine and stuck it up on my bulletin board.

Since then I've thought about it a little more. I think the point the ad is trying to make is that Your Technology Vendor (in this case IBM, but it could be anybody) should be entrusted to handle all the icky technical stuff, so that you, Mr. Businessman, can stick to your knitting, run your business, serve your customers and work without distraction to better manage your supplier relationships.

OK. This is good. One can easily see the intrinsic value in engaging third-party expertise to address the many systems and processes that support your primary business functions. And thus leave the business of doing business to those who know it best. That's the classic argument in favor of outsourcing, and is undeniably compelling.

Impediments to Success

It's also, of course, the classic condition that has created the widening disconnect in many organizations between your business processes and the tools you acquire to run them. Because as layers of complexity are introduced between you and the thing you're trying to accomplish, your ability to connect directly with all your touch-points—to know "Bob"—is severely diminished.

In our many attempts to "improve" the relationships we have with suppliers and customers, there have been many artifacts left in the way. These monuments to progress—complex systems, difficult software, non-integrated silo-systems—were

purchased with the best of intentions, but often result in the most difficult of environments for information workers to thrive.

As is often the case, the trick is sometimes to "unlearn"—to reevaluate the beliefs and practices that once seemed like inviolable business rules. This struck me the other day as I listened to a "technology for dummies" radio show. The subject was MP3—the audio compression format that allows your kids to trade songs by bands you never heard of with lyrics you can't understand with other kids you don't know.

Being the massive geek I am, I listened. MP3 came out of the same standards-development group that developed MPEG



Andy Moore

Andy Moore is an editor by profession and temperament, having held senior editorial and publishing positions for more than two decades. As a publication editor, Moore most recently was editor-in-chief and co-publisher of KMWorld (formerly

ImagingWorld) Magazine. Moore now acts as a contract editorial consultant and conference designer. As KMWorld's Specialty Publishing Editorial Director, Moore acts as chair for the current series of "Best Practices White Papers," overseeing editorial content, conducting market research and writing the opening essays for each of the white papers in the series.

for motion video. But MP3 is very different than MPEG; image compression can be accomplished because there's lots of redundant data in a scanned image. If there is a blue sky, you don't need the full data on each pixel, just one, and how many identical pixels there are.

***"Our monuments to progress—
purchased with the best of
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But music isn't like that ... there's too much variation. To solve this, the MP3 people did something kind of astonishing. They knew that much of the data in digitized music—in fact, in all sounds—goes unnoticed. It's not that you can't hear something below, say 60 kilohertz at such and such a decibel level. You can. But through the thousands of years of evolution, humans have learned to *ignore* certain sounds. We've learned that they just aren't important and we don't bother letting them register in our brains.

So the MP3 guys had the cunning imagination to simply ignore what is unimportant to the satisfactory reproduction of

music. Just as humans have learned to “unlearn” superfluous sounds, they created software that “unlearns” what’s just not important.

The Many vs. The One

“(Content Management) is a new frontier, one that is owned by the entire organization, not just the IT group,” says Martyn Christian, Senior Vice President, Corporate Marketing, FileNET Corp. “Line of business managers are more intimately involved in identifying and justifying solutions to their business issues. Hence, the purchasing decision requires thoughtful input from a cross-functional group of individuals.”

The challenge really is one of the blurring definitions and roles of those “individuals” Martyn mentions. We are just growing out of a “post-industrial, pre-information age,” where the assembly-mentality toward information capture and dissemination was ingrained during years of filing-clerks and in-boxes. The job of the individual in an organization was pretty insignificant in those days; it was the accumulation of efforts, like in a beehive, that drove the enterprise.

Now, it’s the reverse. It is often the opportunity for the One, not the Many, to make a difference. The call center agent who satisfies the disgruntled customer. The tele-sales agent who gets the order and pushes it through shipping, same day. The service engineer who talks a customer through a software problem. How do you develop an information system that can be ready for any contingency, and immediately useful to the many individuals who make up your enterprise?

“The accurate ‘indexing’ and categorization of this content across multiple product lines, geographies and operations is exactly what Content Management systems are designed to do,” says FileNET’s Martyn Christian. “This organization of market and competitive research in a CM system can lead to quicker and easier

access to information from anywhere in the world via the web. If a company can react more quickly to competitive pressures because of this access, they will win market share.”

In a way, all these solutions are moving from different directions to the same intersection: choosing what’s useful from what can safely be ignored.

An Evolving Company

Intelliseek began its life (way back in 1997) trying to solve just that problem, creating “a platform of technologies that gathers information from disparate sources and presents it in one homogeneous view” remembers Sundar Kadayam, Co-founder and CTO, Intelliseek, Inc. A tall order then, as now, but they did good work and created a base-technology that serves them and their customers today.

When the economy got tougher and general IT spending slowed, Intelliseek morphed its technology into a new paradigm that says a lot about the conditions under which we do business today. “B-to-C crumbled, then B-to-B crumbled . . . the remaining market for us was the enterprise,” says Sundar.

Evaluating Content

Intelliseek noticed that its customers and prospects were learning to play with new rules. Two related realities emerged: 1. the simple overabundance of information of all kinds; and 2. the questionable worth of that information—its reliability, relative importance and its potential impact on their customers’ businesses.

“Enterprises needed a corporate intelligence service,” remembers Sundar. “They needed a text mining layer with analytics for analyzing everything from rumors to gossip, to rich product ideas and innovative content. Because companies didn’t know

about rumors, they lost millions of dollars. At the same time there are many useful things that people are saying..”

So Intelliseek now focuses not just on absorbing information from multiple sources, within and from without an enterprise. It actually “evaluates” the quality, validity and trustworthiness of the information. Intelliseek recently merged with PlanetFeedback, a firm that provides feedback delivery and analytics (traditionally the sort of thing you get from focus groups; now increasingly the domain of chat rooms, user groups and self-organized “watch-dog” sites). Now Intelliseek can quickly distinguish what you *need* to know from what would be merely *nice* to know from what you can safely ignore.

Toward Business "Imagination"

There are a lot of sounds out there that can be ignored, and some that may be telling you something other than what you expect.

“Consumers may compare your car to the one competitor’s car when they are thinking about interiors, but compare your car with an entirely different one when they are talking about price points,” explains Intelliseek’s Sundar Kadayam. A negative discussion thread in a user group may hint at an emerging dissatisfaction with your company. But it may just as easily suggest a design change that will revolutionize your product, and your position in the marketplace.

“It’s one thing to collect information about customers,” says Sundar. “It’s quite another to interpret it.”

“Organizations as a whole need to be educated on the value of electronic content management, and the benefits to each member of the team as well as to the organization. How is it going to make their job easier? How will it help the organization produce a better widget? How does it help them gain market share?” adds FileNET’s Christian.

These two companies have clearly different approaches, and yet arrive at strikingly similar conclusions. It’s all a matter of perception, and your ability to imagine the possibilities.

In fact, I hereby change the title of this White Paper. From now on, “B.I.” should stand not for “Business Intelligence,” but “Business *Imagination*.” I think we’ll all be a little better off. ■

"There are a lot of sounds out there that can be ignored, and some that may be telling you something other than what you expect"

Andy Moore has often been a well-known presence in the emergence of new technologies, from independent telecommunications through networking and information management. Most recently, Moore has been pleased to witness first-hand the decade’s most significant business and organizational revolution: the drive to leverage organizational knowledge assets (documents, records, information and object repositories) and the expertise and skill of the organizations’ knowledge workers in order to create true learning organizations. He can be reached at andym@mint.net and welcomes feedback and conversation.

Delivering a Competitive Advantage Through ECM

By **Martyn Christian**, Senior Vice President, Corporate Marketing, FileNET Corp.

In today's information economy, content is more dynamic, more complex, and shared by more people throughout the enterprise than ever before. A desire to leverage this content across the enterprise and with customers is no longer a nicety for competitive differentiation—it is now a requirement of doing business. The challenge of managing content across the enterprise has become increasingly clear—as well as the necessity and benefit of integrating that content with business processes.

Most recently, Enterprise Content Management (ECM) emerged as the definitive term to describe the next evolution in the document and content technologies market. Within ECM, the business requirements of the entire enterprise are considered, including business processes and the key role of unstructured content in business. ECM solutions promise to deliver what other previous technologies could not—substantial business value.

ECM Delivers Business Value

As more enterprises look to the Web to conduct their business, ECM solutions become even more critical. In order to stay competitive, enterprises must improve their business processes on the Web by making what happens behind the click more effective and efficient. ECM technologies offer enterprises the ability to streamline business processes, link people who participate in those processes via the Web, and leverage unstructured content as a strategic asset.

“Organizations that can best leverage their intellectual assets (i.e., content) will be best positioned to run efficiently (e.g., avoid duplicated efforts, exploiting best practices, identifying/leveraging subject matter experts, exposing the information employees, partners, and consumers need to make decisions); those not moving into this model will increasingly be at a competitive disadvantage,” claims Andy Warzecha, senior analyst at the META Group.¹

Most enterprises reap substantial benefits when they incorporate the Web into their business by exposing parts of their business processes and relevant information to participants in their business operations. For instance, when an insurance policyholder participates in the claims process by providing information necessary to move the claim toward resolution, the organization benefits from a lower transaction cost and increased customer satisfaction. It also makes sense for an insurance company to allow others, such as agents or business partners, to participate in the claims process. Exposing business

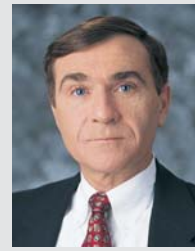
“Most enterprises reap substantial benefits by exposing parts of their business processes and relevant information to participants in their business operations”

processes to both the policyholder as well as other parties, and incorporating unstructured content, such as scanned police reports, photographs from claims adjusters or e-mail correspondence with agents and policyholders, dramatically improves the efficiency of the claims process.

ECM tools ensure that business-critical information is delivered to the right people at the right time. Business processes within an enterprise are not hindered, and unstructured content and sources of information are integrated in a holistic, single view, providing the opportunity to make valuable business decisions.

Role of Process Management

As Web-enabled business practices and processes, plus unstructured content become more complex, key demands such as the need for centrally managed, enterprise-wide con-



Lee Roberts
CEO and Chairman

Since joining FileNET in 1997, Lee Roberts, CEO and Chairman, has led the company's transformation from a leading document management supplier to one of the industry's top Business Process Management and Enterprise Content Management provider companies. He has made his mark with a

number of initiatives aimed at leveraging FileNET's extensive customer base, global marketing presence and vast research and development resources. Under his leadership, the company has launched two new core product families—Panagon and Brightspire, and added Acenta, a family of industry-focused applications to its offerings. Roberts joined FileNET after 20 years at IBM in a variety of sales, marketing, product management and general management roles.

tent management will continue to sustain the ECM market. Additionally, today's enterprises are recognizing the need for more elaborate workflow or eProcess and Business Process Management features found in ECM solutions. Enterprises that once concentrated on building a Web site quickly realized the inadequacy of Web Content Management systems, and that having a Web front alone was not enough. To compensate, significant resources were spent to develop custom workflow and Business Process Management solutions to support growing business requirements. This need for a less costly, more complete package solution is driving demand for ECM offerings.

In today's environment, competitive companies must remain agile—quick to adapt. Flexibility for changing business needs and evolving business practices will continue to be a market driver. Market leaders in the ECM arena include traditional document and content management vendors, as well as a number of new players. According to IDC's ranking of worldwide content and document application software vendors, FileNET is recognized as the market leader, eclipsing the next largest vendor in revenue by more than 50%.² The ranking reviews revenue and market share for 1998 to 2000.

When ECM Makes Sense for Your Business

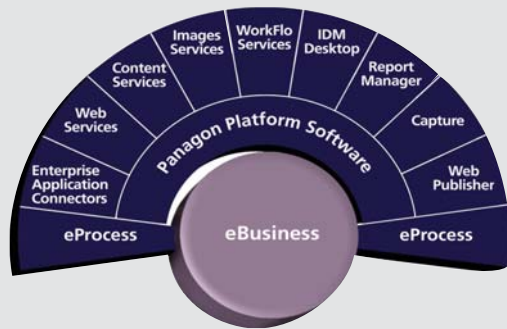
Requirements for an ECM solution depend on the specific business challenges of an enterprise. A thorough assessment of an enterprise's specific business processes or application is necessary before undertaking an ECM initiative. Ask yourself the following questions to determine if your

Managing A Customer Self-Service Portal

Leading ECM Provider

FileNET, with its Panagon™ product line, leads the Enterprise Content Management market. With Web-based processing and content management capabilities, Panagon offers today's enterprises an ECM solution with the ability to reach customers or business partners globally by expanding their content and processes beyond the corporate wall, and to evolve to meet changing business needs at the same time.

"Collaborative commerce, greater volatility and volume in eBusiness over globally distributed value Webs, and an imperative to manage not just content but its associated processes and metadata, presents a daunting challenge," commented Thomas Koulopoulos, president and founder, Delphi Group, an industry analyst and consulting firm. "FileNET's strong legacy in content management and eProcess, along with the substantial technology of the Panagon platform, provide the right mix for FileNET to be a leading player in the ECM market over the long-term."



ECM Solution in Action

As one of the world's three largest lighting companies, OSRAM SYLVANIA implemented FileNET's Panagon ECM solutions to manage its customer self-service portal. The challenge was to build mySYLVANIA.com, a Web site that would let its industrial distributors find product information easily and order lighting equipment directly. The project was not as easy as first thought—some SYLVANIA products have as many as 35 documents associated with them, including specification sheets, schematic drawings, photographs, material safety data sheets, mortality specifications, and other critical information.

OSRAM SYLVANIA's mySYLVANIA.com Web site, a multi-featured, interactive, online lighting workplace for its commercial partners and end users, is built on FileNET's Panagon Web Publisher, Panagon Content Services with Rendition Server, and Panagon Web Services. The site is a personalized workplace where SYLVANIA partners and customers can quickly and easily purchase products, browse a catalog, check product availability, and obtain instantaneous order status online. In addition, SYLVANIA customers are able to check the status of their accounts and vendors are able to verify payment for their services.

By giving distributors access to this information, calls to the company's service staff are minimized. When engaged, representatives can immediately access relevant information from the Panagon solution.

"The Web has revolutionized the way we interact with our partners and customers," said Armand Gendreau, director of IT projects and core applications support of OSRAM SYLVANIA. "Now we can provide them with up-to-the-minute information instantly by using electronic content. Using Panagon to manage this content, we can assure our customers that they receive the latest product information. We can also give them better service by bringing together a complete information package. The result is better information, delivered faster, with less corporate overhead—clearly a winning scenario for both OSRAM SYLVANIA and its partners."



organization could benefit from an ECM solution:

- ◆ Does your enterprise execute business processes, and more importantly exceptions, in a well-organized, efficient manner?
- ◆ Does your organization effectively use the information it collects via the Web or in paper form by delivering it to the appropriate people in a format they can easily and quickly use?
- ◆ Is your enterprise able to bring together information from various sources such as correspondences sent in by the customer,

statements, and information exchanged between businesses, and make it available in a timely manner to the appropriate people within your organization?

- ◆ If the Web plays a role in your business, do you allow external participants to interact in your business processes?

If the above questions are issues that you struggle with today, a well-implemented ECM software offering can deliver real answers to your business requirements. ECM enables enterprises to adapt faster to the growing business need for dealing with

valuable content. As the speed of business transactions and volume of content continue to accelerate, enterprises must act quickly, and explore ECM initiatives to stay competitive. ■

FileNET delivers the Substance Behind eBusiness™ by optimizing an organization's business processes and associated content to deliver a competitive advantage, maximum efficiency and increased profitability. For more information on FileNET's business process management solutions, visit www.FileNET.com

¹ META Group Electronic Business Strategies, Enterprise Content Management, March 5, 2001

² IDC Document and Content Technologies Market Forecast and Analyst Summary, 2001-2005, August 2001

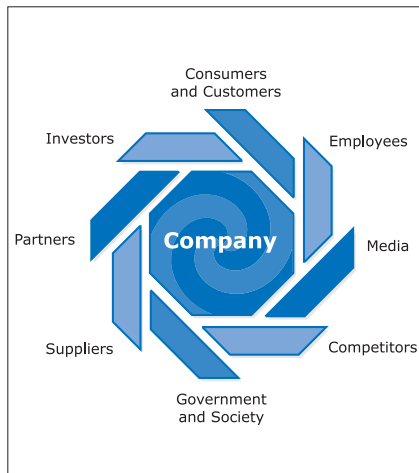
The New Business Intelligence

By Sundar Kadayam, Co-founder and CTO, Intelliseek, Inc.

Modern corporations operate in an incredibly complex and extremely dynamic environment characterized by rapidly changing corporate dynamics, incessant changes in technology and market forces, continuous shareholder scrutiny, and ongoing pressures from competitors and government regulators.

Only proactive, adaptable, knowledgeable and well resourced organizations will survive and potentially dominate the markets of the future. These attributes are the hallmark of an “*intelligent enterprise*”.

An “*intelligent enterprise*” has a finger on the pulse of all influencers of its corporate strategy including customers, partners, suppliers, investors, employees, competitors, media and the government.



It uses this real-time knowledge in making better business decisions and to create and protect better products. It actively promotes a knowledge creation and sharing culture as well as innovation within the organization. It applies this knowledge to reduce operational costs as well as to get and retain satisfied customers.

The “*intelligent enterprise*” is becoming a reality—the enabling technologies are emerging today while the challenging business climate and market conditions are already here. To understand what the enabling

technologies are, we should first look at what are now known as “Business Intelligence” solutions.

Traditional Business Intelligence Solutions

When vendors, analysts and the media talk about Business Intelligence today, they are most likely talking about one of the following types of software:

- ◆ End User Query/Reporting Tools
- ◆ On-line Analytic Processing (OLAP) Tools
- ◆ Data Mining Software
- ◆ Packaged Data Mart/Warehouse Products
- ◆ Executive Information Systems
- ◆ Business Intelligence Portals

These software tools typically support decision making for executives and knowledge workers (not too long ago, their predecessors were called “Decision Support” tools or systems). They can be used to analyze structured data created by E-Commerce applications, Supply Chain Management (SCM) systems, Enterprise Resource Planning (ERP) systems and more.

Traditionally, applications of these Business Intelligence tools have included Financial and Profitability Analysis, Customer Relationships Analysis, Supply Chain Analysis, Sales Force Automation, Marketing Analysis and Product Quality Management.

This is a growing, yet maturing technology with its roots in over 15 years of computing history since the mid-1980s.

The Impact of the Internet

The Internet, as a burgeoning information source, has introduced a wide range of new factors that affect a corporation’s performance.

On the positive side, the Internet, if well leveraged, affords corporations the opportunity to be better aware of the marketplace they compete in, track competitors, explore new markets, evaluate opportunities and risks more efficiently, find new customers, recruit qualified candidates, create better products, test new products faster, streamline communica-



Sundar Kadayam
Co-founder and CTO

Sundar Kadayam is a proven technology specialist and software innovator, with 16 years experience. Before co-founding Intelliseek, he focused on building distributed enterprise software while heading Attachmate’s Advanced Technology Group.

Kadayam’s technology accomplishments are many. He led the development of the first Windows-based communications product for Unisys and DEC enterprise systems. He created the first Universal Communications Architecture for machine-to-machine communications. He helped design the first commercial hypertext systems and developed middleware for PC-to-enterprise system integration.

During the past five years, he has focused his research and development efforts on Internet information retrieval and a new emerging breed of applications to power the intelligent enterprise.

tions with partners and suppliers, increase sales and improve customer satisfaction.

On the negative side, the Internet is a fertile ground for gossip, rumors, information leaks and more. If not effectively and actively managed, these aspects of the Internet can rapidly shake customer confidence, seriously erode brand equity, squander strategic and competitive advantage, and even cause company stock price and valuation to tumble overnight. Bad news, even if it isn’t true, seems to travel at the speed of light over the global Internet.

Traditional Business Intelligence has to grow up to deal with the irrevocable changes and new challenges of the post-Internet world we live in.

The New Business Intelligence

We are at the dawn of a new era where Internet-based data and Intelligence needs to be combined with internal data so that it is effectively applied to the traditional enterprise life-cycle.

Imagine a company where:

- ◆ The Consumer Affairs department knows of brewing product safety rumors, and effectively combats the situation before the rumors hit mainstream media and go global.

Impact: Timely action saves the company millions of dollars in damage to company reputation.

- ◆ The PR department is aware of changing sentiments in the press about company policies, products and key executives as well as those of the competition.

Impact: An aggressive proactive PR campaign boosts sagging image surrounding new company policies.

◆ Brand Managers and Product Researchers have real-time access to consumer feedback on their products and they proactively respond to consumer needs.

Impact: With real-time feedback, Product Researchers skip an entire product improvement cycle, enabling the company to deliver new and improved product to market 12 to 24 months sooner. With aggregated consumer sentiments and brand comparisons, a Brand Manager formulates a new marketing strategy that combines the appeal and polish of higher-price brands while retaining the bottom-line of lower cost—this results in 25% increased sales the following quarter.

◆ Investor Relations has up-to-the-minute knowledge of rumors and events that could cause substantive impact to the company's stock and value.

Impact: Timely dissemination of information to counter a vicious rumor about the financial stability of the company saves the company millions of dollars in potential loss of shareholder value.

◆ The Legal Counsel is able to actively protect company assets like trademarks and service marks by being aware of their use worldwide.

Impact: With up-to-date proof of trademark usage and infringement detection worldwide on the Internet, the company is able to aggressively protect valuable trademarks and logos.

◆ The Intellectual Property division can assess the worth of the company's patent portfolio, actively monitor competitive patents, infringements, and new licensing opportunities.

Impact: Company licenses what was originally thought as a sleeper patent and creates a new multi-million dollar revenue stream.

◆ The Human Resources department has a handle on brewing dissent among present employees, can gauge the company's image among prospective employees, and actively recruits qualified passive candidates.

Impact: New passive candidates are identified, screened and hired in one-tenth of the time, making hiring a competitive advantage for the company.

◆ The Sales organization derives new qualified customer leads that need the company's products or services based on events happening in real-time.

Impact: One new customer lead discovered, results in paying for the IT investment in lead-generation ten-times over.

◆ Employees have instant access to relevant information as well as expertise from the extended enterprise, and this enables them to make better business decisions every day.

New Business Intelligence Solutions

Intelliseek offers a suite of applications and services that enable corporations and other organizations to leverage the *New Business Intelligence* today.

- **Enterprise Search Server (ESS)**—This is Intelliseek's core product. As an out-of-the-box solution, ESS enables "true enterprise search" and intelligent knowledge discovery across the extended enterprise. Large corporations are also deploying ESS today to promote current awareness of their marketplace, as well as to enable proactive gathering of intelligence on competitors.

At the heart of Intelliseek's ESS is an intelligent agent platform that enables the creation of a wide range of specialized applications for *New Business Intelligence*.

- **BrandPulse™**—Enhanced from an initial Corporate Intelligence Service (CIS) that gathered unsolicited consumer feedback, BrandPulse offers a 360-degree view of intelligence on consumers. Built on top of the ESS platform, BrandPulse aggregates multiple channels of consumer feedback (explicit direct feedback to the enterprise and implicit feedback from Internet communities) and offers much-needed analytics and metrics on loyalty, customer service, unmet needs, competitive factors, and brand mavens. Using BrandPulse, many enterprises today get early warning on rumors, as well as the timely marketplace intelligence to create, nurture, and protect brand equity.

- **ExpressFeedback™**—This new offering from Intelliseek permits companies to establish a 24x7 direct feedback channel with their customers. Created using valuable insights obtained from operating the world's largest feedback infomediary (PlanetFeedback.com, an Intelliseek division), ExpressFeedback offers a world-class, ready-to-deploy feedback engine that provides valuable analytics on customer sentiments and issues via the BrandPulse system.

Intelliseek is actively pursuing key industry partnerships that will soon unveil applications to power the *Intelligent Enterprise* for:

- Active Recruiting
- Real-Time Lead Generation
- Trademark Protection and Management
- Patent/Intellectual Property Management

Toward the Intelligent Enterprise

Given the increasing complexities faced by the modern corporation, marketplaces of the future will be dominated by *intelligent enterprises*. These organizations sense and respond to all factors that influence its corporate strategy including customers, partners, suppliers, investors, employees, competitors, media and the government.

Leading-edge companies are taking advantage of *New Business Intelligence* solutions from Intelliseek to leverage knowledge equity within the enterprise, to promote current awareness and intelligence on competitors, as well as to create, nurture and protect their brands. These solutions are high-impact, easy to deploy, and have a clear, proven ROI.

Impact: With 2000 knowledge workers "searching for information" 30% of their work day, the company sees a positive payback of \$13 million on an IT investment of approximately \$1 million in "True Enterprise Search".

Leading-edge companies are already deploying a new breed of applications to provide this *New Business Intelligence*. These applications are in stark contrast to the glitz and hype of the Web of yesteryear. These applications are grounded in sound value propositions and bottom-line ROI. They leverage existing enterprise investments by integrating with existing systems,

and allow for a measurable payback for new IT investments made in them. One industry consultant calls this "*leveraged high-impact intelligence*." ■

A small, but growing number of cutting-edge technology companies, old and new, are delivering these "high impact" applications for *New Business Intelligence*. Intelliseek is an early leader in this exciting new era of enabling the "Intelligent Enterprise." Our solutions solve the fundamental problem of "information overload" by searching relevant, targeted and personalized content from the Internet, intranet and extranets to empower companies with comprehensive, up-to-the-minute consumer, competitive intelligence and industry information. The knowledge necessary to create, protect and build business in today's marketplace. www.intelliseek.com

Enabling Knowledge Management In Today's Knowledge Economy

By Peter Auditore, Vice President, U.S. Marketing, Hummingbird Ltd.

The most daunting challenge facing business management is delivering information to the virtual organization worldwide—information anytime, anywhere, and on any device. Technologies of the web are the foundation of today's intranets, and over the past six years business, government, and education have discovered the power of Internet and web technologies as a new computing paradigm for information sharing and collaborative computing. The enterprise information portal represents the next significant evolution in the advancement of organizational Intranets and graphical user environments (GUEs). This excerpt from a white paper entitled "Enterprise Information Portals: Enabling Knowledge Management in Today's Knowledge Economy" provides a concise overview of these elements and provides a high-level discussion around knowledge management in the e-economy.

What is Organizational Knowledge?

There are three types of knowledge within any organization: individual, group and enterprise, and that knowledge can be generally classified along the lines of being explicit, embedded and tacit.

- ◆ **Explicit Knowledge**—knowledge represented in documents, books, email and databases.
- ◆ **Embedded Knowledge**—organizational knowledge found in business processes, products and services.
- ◆ **Tacit Knowledge**—undocumented knowledge that is captured during business processes by knowledge workers.

The overall challenge that many organizations face today is identifying where that knowledge resides and how to leverage it across the enterprise, group and/or individual. The majority of KM initiatives today usually revolve around identifying/discovering, classifying and indexing explicit knowledge in information systems, such as an enterprise document management system, and/or business content management

system. In many cases KM systems also include access to structured information found in databases.

What is Knowledge Management?

As an organizational initiative, knowledge management is usually manifested in the form of a business system that is enabled by an array of technologies. Today the convergence of knowledge management and business intelligence is underway in many organizations and KM enabling technologies are a vital part of any customer's relationship management system. From an organizational perspective CRM, intellectual capital management (ICM), communities of interest or best practices (BPM), and competitive intelligence all fall under the umbrella of knowledge management.

One of the greatest difficulties in defining KM is the level of complexity inherent in many of the definitions themselves, and in their scope. This is perhaps the most difficult and confusing aspect of understanding what KM is and how it can be implemented from an organizational and/or business unit perspective. Below are descriptions of what can be considered the five technology blocks of enterprise knowledge management:

1. **The Enterprise Information Portal**—The EIP, or corporate portal can be the focal point of an organization's KM initiatives and can facilitate a comprehensive range of functionality, including single point of access to relevant structured and unstructured information, community of interest building, and collaboration.

2. **Information Management Systems**—A system in place which facilitates the organization, indexing, classification of documents, content, and digital assets such as video and audio files, illustrations, records, policies and procedures etc.

3. **Federated Search**—The ability to search across all organizational structured (databases) and unstructured (documents, records, emails, video & audio files, etc.) in-

formation sources. This is a seminal enabling technology that facilitates discovery of intranet and Internet information and data sources.

4. **Business Intelligence**—Formerly known as decision support, many BI systems were designed for specific business objectives such as data warehousing financial information for routine data analysis, standard report writing, adhoc querying, OLAP and data mining. Many BI systems are now being deployed to deliver on the promise of CRM initiatives, which are significantly more complex than data warehousing of financial data.

5. **Collaboration**—Electronic mail is still the most collaborative technology in most enterprises, however, a new class of collaborative technologies is emerging that can greatly facilitate workplace collaboration and the creation of communities of interest/best practices. These technologies enable virtual workspaces and workrooms that allow members to share documents, emails, schedules and collaborative document creation, in effect enabling collaborative eCommerce.

The Knowledge Portal

Enterprise information portals are bringing together the worlds of knowledge management and business intelligence into a new desktop environment—the knowledge portal. In the millennium the knowledge portal will play a key role in empowering the virtual enterprise and the virtual employee by providing a personalized single point of easy access to relevant information—enabling better, faster decision-making. Knowledge portals or EIPs are also beginning to help organizations capture and leverage their intellectual assets by facilitating assembly of communities of interest, best practice and expert systems within a single intuitive user interface. The EIP should be viewed as an evolving technology platform, and in the future EIPs will incorporate streaming video and audio to include e-learning and e-training components, thereby potentially reducing overall organizational training costs.

Organizational And Cultural Aspects of Implementing KM

Although KM has become a strategic initiative in many organizations, it presents many significant organizational challenges to all levels of management including line of business managers and IT professionals. The confusing nature of the KM market is in part due to the broadness and complexity of the enabling technologies, and how it is defined and implemented in different organizations. KM's limited success in the past has been primarily the result of organizations taking a

Key Knowledge Management Enabling Technologies

B2E Enterprise Information Portal

Provides a single point of access to all relevant information and applications, while also functioning as a gateway to communities of interest, best practice etc. EIPs can also function as a platform for knowledge networks.

Federated Search

The ability to search across all organizational structured (databases) and unstructured (documents, records, emails, video & audio files, etc) information sources.

Taxonomy, Classification and Indexing of Information Sources

Indexing of information resources and establishment and/or automation of an information taxonomy for industry-specific or organizationally specific information.

Document/Information Management Systems

Organization and archiving of documents, emails, files, illustrations, policies, procedures, records, audio files, video files etc.

Collaborative eCommerce Application Environments and/or Workspaces

Enable organizations to easily create virtual project team rooms, and/or communities of best practice by allowing team members to collaboratively develop and store documents, tasks and schedules in a secure virtual environment.

Simultaneous Collaboration

Allow workgroups and project team member to share information in real-time.

Business Process Mgt. and Community of Interest Building

Facilitates best practices and community of interest building by leveraging an EIP front end with threaded discussion groups and collaborative technologies through an EIP.

Intelligent Agents—web crawlers, “knowbots”

Enable relevant information derived from automated searching to be pushed to the desktop or added to a repository.

Network News & Threaded Discussion Groups

One of the first technologies of the web to be employed as a KM system for sharing information on projects and topics. Can also serve as a key technology for facilitating e-mentoring.

Chat/Instant Messaging

A technology that evolved from Internet Relay chat, enables real-time person-to-person interaction.

Automated Community-building Software

A new class of software that automatically builds communities of interest by profiling email and documents.

Visualization Software for Information Systems

A new class of software that provides more intuitive and easier interface for navigating information systems including web sites. This new way of viewing information can significantly enhance information discovery and access.

Expert Systems

Another new class of software that connects organizational experts with other members of the community by asking questions like who knows about this?

technology-only approach to KM initiatives, rather than addressing the salient cultural and organizational issues.

Leading-edge organizations have created a whole new class of business managers called knowledge managers, knowledge environ-

ment engineers, best practices managers, and/or information architects, to name a few. KM usually starts at the top and typically its most difficult challenge is establishing a culture of simply getting people to work together and share information. By facilitating infor-

mation access, as well as sharing and collaboration, an organization, business unit and/or department can create best practices that ultimately lead to innovation of the business process. Increasing productivity and innovation are the seminal goals of any KM system, which can ultimately lead to increased competitiveness and success in your vertical market segment. If your organization has a non-information sharing culture and senior management is not behind KM then it is likely to fail. Building communities of interest and/or promoting best practices within an organization is more easily said than done, and the major barriers to successful implementation are primarily cultural, not information technology driven.

Successful KM initiatives are usually focused on strategic business initiatives and many organizations implement KM systems when they realize that the absence and/or loss of intellectual assets could negatively impact business. Often organizations search for and realize areas where they are vulnerable and are dependent on the knowledge and expertise of consultants and other knowledge workers. For example a health care organization may have a virtual workforce of consultants in the field and headquarters may have no idea how they do their jobs. Or a political organization may want to capture and archive the knowledge gained during the process of executing a campaign. This may include leveraging all of the information, documents, ads, speeches and illustrations into future campaigns. However, the gold is in the “how to” part of the campaign process.

The table opposite identifies key KM enabling technologies and how they can be applied to address organizational and business unit initiatives. ■

For a complete copy of the whitepaper entitled “Enterprise Information Portals: Enabling Knowledge Management In Today’s Knowledge Economy” go to our website at <http://www.hummingbird.com/collateral/index.php>

Hummingbird develops enterprise software solutions that provide access to all business-critical information and resources, aggregated and categorized through a single user interface. Hummingbird offers these global enterprise solutions through the desktop and the Web using Hummingbird Enterprise Portal Suite, the cornerstone of the firm’s e-Business solutions. Integrated within Hummingbird Enterprise Portal Suite are the firm’s proven technologies for host access, data integration, reporting, document and knowledge management. The company offers its solutions, along with related consulting, education, and support services, in more than 50 countries around the world. For more information, please visit www.hummingbird.com

Processing Structured Data to Help Smart People Get Smarter

By Dr. David Lundahl, President, CAMO Inc.

Most organizational theory explores how organizations function. But little is known about the vast amounts of data that an organization generates and how it is processed into knowledge to significantly increase intelligence and achieve better success.

Further complicating the problem is technology that has given organizations the ability to collect and store vast amounts of information into data warehouses. To build a strong business intelligence solution, organizations need to better utilize this data and integrate it into the knowledge-building process.

To better understand the issues, it is important to define what is meant by structured and unstructured data. The unstructured data of an organization includes e-mail correspondence, text documents, even voice and video. But in large part, most of the information in an organization is structured. This is the quantified information found in financial statements, statistical reports and other sources that include responses to surveys, point of sale information and sales reports. In essence, the non-text data the organization generates.

Structured data is extremely difficult to organize. It is generally fragmented, resting in different silos of the organization. Often, organizations have little ability to aggregate the data and process it in a manner that reveals the core information that constitutes a robust knowledge base.

New and proven approaches to processing structured data are quickly emerging.

Integrated Self-learning

CAMO's approach is to integrate a self-learning system that continually aggregates data and correlates it into a knowledge base. When applied to an organization, intelligence increases exponentially as the "community" adds their own content and feeds knowledge back into the system. The system itself is always learning by continually processing structured data from multiple data sources, both internal and external to the organization. We believe that hybrid methods to integrate artificial intelligence and advanced modeling

techniques are the most powerful ways an organization can process data into knowledge. What results are sophisticated ways to classify customers, define and track multiple market segments, make predictions, optimize processes and simulate market conditions for product concept development.

The CAMO system gets smarter as new data is aggregated, processed and correlated. Correlating data is an important distinction. It means that the knowledge management system automatically discovers the relationships of all the different structured data sets by creating a model for any possible variable, be it a customer's quantified feedback, the various features of a product or any possible circumstance, state, or condition. This means that the analysis may have tens, hundreds or even thousands of models that interact with each other and make correlations that become the knowledge base. The knowledge base may update itself on a continual basis as new data is aggregated and run through the system's self-learning algorithms.

To be of value, the people in the organization must trust and respect the knowledge base that is generated from the structured data. The keys to value are accessibility, usability, extensibility and robustness. Users must be able to easily gain access to various knowledge bases, to navigate and query with applications that intuitively direct the user to information critical for decision support or knowledge discovery. The knowledge base must also build over time, as new structured data becomes available. This process should extend the knowledge and help people continually learn as the knowledge base builds. This building process should lead to robust knowledge bases with applications that provide user access to a broad range of queries for knowledge discovery or coverage of situations for decision support.

The Process

To develop a knowledge base, CAMO processes the organization's structured data into metadata, meaning the data that is correlated to discover the relationships among



Dr. David Lundahl
President

Dr. Lundahl is a leader in the field of business intelligence, responsible for leading the creation of CAMO's patent-pending artificial intelligence and advanced modeling technology. He co-founded InfoSense, a company that pioneered and commercialized new methods for knowledge discovery and decision support. InfoSense merged with CAMO in 1999. While at InfoSense, Dr. Lundahl served as a full professor at Oregon State University, directing the development of the Food Innovation Center in Portland, Oregon. Prior to InfoSense, Dr. Lundahl spent much of his career improving the product development processes for such companies as Brown Foreman Beverage Worldwide and Frito Lay.

the multiple data sets. The metadata is integrated into applications that allow organizations to discover knowledge or establish decision support systems that match the business process.

Custom applications are then built to use the metadata that generate explicit knowledge, which is displayed in a graphic format. Individuals then extract the visual reports to learn and add their own intelligence to the knowledge base. Through collaboration, the explicit knowledge is shared by the individuals and circulated throughout the organization, becoming tacit, or deeply embedded and understood.

As the organization accepts the knowledge, they contribute to it, according to their own knowledge and expertise of the business process. This creates a multiple increase in intelligence as people from throughout the organization learn and contribute to the knowledge core.

Data warehousing, great analytics or extensive data collection are part of the process but not what determines the success of a corporation's business intelligence investments. For maximum results, building a knowledge base is crucial. But without understanding how to process organizational data into knowledge, organizations run the risk of developing a knowledge management system that lacks the robustness and the attributes needed to gain considerable market share in the general marketplace. ■

Dave Lundahl welcomes feedback and conversation. He can be reached at david.lundahl@camo.com

Founded in 1984, CAMO develops process optimization software, knowledge discovery and decision support solutions. The company has 200 employees and more than 1,800 customers in 46 countries in the food, chemical, pharmaceutical and manufacturing industries. Headquarters are in Woodbridge, NJ with additional offices in the United States, India, the United Kingdom and Norway. For further information, please visit our web site at www.camo.com

CAMO, helping Smart People Get Smarter!

Consumers Benefit From B.I. Solution at LowerMyBills.com

By David E. Silver, President and CEO, NetAcumen

The Internet is rapidly shifting from an independent business platform for entrepreneurs to a strategic channel for communications and commerce, allowing companies to transform business operations and improve corporate performance. Utilizing the Internet as a business platform requires that enterprises have a clear understanding of customer impact and a demonstrable return-on-investment to validate expenditures on Internet-related initiatives. NetAcumen provides software applications and services to quickly and cost-effectively enable companies to measure and improve the business performance of their Internet-related operations and better utilize the Internet channel across their enterprise. Examples of business-critical metrics provided by the NetAcumen solution include: relative profitability of marketing campaigns; efficiency and effectiveness of on-line service and support offerings; and web site usage by target audiences. The case study below illustrates one customer's success with the NetAcumen Solution.

LowerMyBills.com is the first independent and unbiased online service to provide visitors with a free, one-stop solution to find the lowest rates and most competitive plans for all their monthly bills. Visitors can research, compare prices, and switch plans for long distance and wireless phone services, Internet service providers, credit cards, loans, insurance providers, and public utilities.

Scaling for Growth

LowerMyBills.com's business depends on rapidly delivering the right customers to its best partners. That means optimizing incoming traffic, maximizing conversion rates, and improving product selection on the web site.

LowerMyBills.com tried using basic web reporting tools on top of its existing system,

but was disappointed by the results. "We needed to scale our reporting system to handle the volume and complexity of our operations," says Olivier Chaine, vice president of operations. "NetAcumen gave us that power and scalability."

According to Chaine, LowerMyBills.com evaluated products from numerous competitors before deciding on NetAcumen. LowerMyBills.com choose NetAcumen for its onsite hosting capabilities, easy access to reports through the NetAcumen portal, support for custom business rules, and integration with external data. "NetAcumen was the only solution that gave us the level of service and functionality we needed. They provided a true data warehousing foundation that could integrate the clickstream behavior with our enterprise systems, bridging from marketing to fulfillment." Chaine was also impressed by the "commitment to excellence in customer service" provided by NetAcumen's operations department.

New Opportunities

NetAcumen gave LowerMyBills.com a flexible and extensible data warehouse of web log information that integrates clickstream data with transactional and authentication information stored in Oracle 8i. LowerMyBills.com has additional plans to integrate with CRM and marketing automation data in the future.

"At LowerMyBills.com, we are constantly working to improve our campaign effectiveness and conversion rates. NetAcumen allows us to quickly focus on modifications that are helping our visitors convert and identify those that are not," observes Chaine. "For example, there was tremendous interest in our debt solutions area; NetAcumen helped us discover that we were losing many people because our pages were confusing. We redesigned the page and have since doubled our conversion rate in this area."



David Silver
President and CEO

David Silver has more than 15 years of experience managing business intelligence and information technology companies and products. Prior to co-founding NetAcumen, Inc., David was vice president of channel development at Sagent Technology where he brought

analytical application solutions to the marketplace. Before joining Sagent, David was director of product management at ParPlace-Digitalk, and held product management positions at Andersen Consulting and Knowledgeware. David holds a dual degree in Sociology and Mathematics/Computer Science from Emory University.

Demonstrable Results

LowerMyBills.com delivers web reports from NetAcumen to 60% of its employees. These reports are created by the data warehousing group, then made available to users as part of an information portal. "NetAcumen helped us integrate key reports into a portal for use by everyone in the company, giving us a true, cross-organizational view of our data," says Chaine. Users of the system include employees in business development, IT, marketing, web development, sales, and even the CEO, who uses the reports to monitor key performance indicators and prepare for board meetings.

NetAcumen has helped LowerMyBills.com improve the performance of its affiliate program by over 20% percent, increase banner advertising effectiveness by 45%, and save \$20,000 on one recent campaign. Says Chaine: "Our previous solution only provided traffic information, such as page hits. This information was of little value in helping us improve our conversion rate. The NetAcumen architecture allows us to quickly integrate both operational and third party demographic data that is critical to understanding our customers and increasing revenue." ■

Founded in 1999, NetAcumen is a leading provider of Internet channel business performance metrics to Global 2000 companies. The NetAcumen Solution integrates information from web sites, internal corporate databases and third party data sources to provide each department in the enterprise with timely reports on the effectiveness of their Internet-related business initiatives. Using this information, organizations can transform their web sites into key drivers of revenue and profitability. The NetAcumen Solution is available as an ASP service or a software license. NetAcumen is headquartered in Silicon Valley and can be reached at (650) 558-3800 or on the web at www.netacumen.com

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