

CHAPTER 5: Future Trends



While the need to manage content is consistent, the tools to do so are not.



A large, stylized, gold-colored letter 'Y' that serves as a decorative element for the text.

You understand ECM and what it can do for your company. Now, as the saying goes, the only constant is change. What does the future hold in store for the ECM industry—and, more importantly, you? It's safe to say that the effective management of content and information is going to become more important in the coming years.

While it's impossible to predict the exact direction of technology trends, you'll find a sampling of technologies and issues that a variety of experts in the industry think will affect you down the road:

Regardless of what the future holds, one thing will remain the same: no matter the features and functions of ECM tools a decade or later from now, the most important aspect of managing content is to make sure that you get the right tools for your job. Technology for technology's sake doesn't do your business any good—no matter how cool it may be.



Adaptive ECM and the Future of Enterprise Content Management

CONTENT, CONTENT EVERYWHERE...

It's 2012 and as the research director for an up-and-coming biotech firm, you're struggling to understand all the content you have readily at hand. You're long past simply managing and publishing content over the Web. You've set up the processes to monitor your product pipeline—keeping tabs on the progress of clinical trials, regulatory submissions, market initiatives, and customer experiences. Your research teams rely on the corporate intranet to track results, share insights, search for public and proprietary information, and collaborate with colleagues around the world.

This is a smart environment that tracks how you work and recommends solutions to problems before you are even aware of them. It automatically maintains archives of important documents and meticulously keeps records of items that are subject to compliance requirements. The environment knows that when you're on the road, you only want to learn about the urgent issues.

TOWARDS ADAPTIVE ECM

Sounds fanciful? Hardly. The future for enterprise content management (ECM) is rapidly coming into view, fueled by ubiquitous connectivity, pervasive security, self-describing content, and agile manageability. To our way of thinking, this future revolves around a new trend, what we term adaptive ECM.

Adaptive ECM provides flexibility to

both business users and IT professionals within an enterprise. It lets users do their work exactly the way they want to with an utterly invisible and uncompromised platform. At the same time, IT professionals have access to exactly the systems and content management resources they need to ensure a safe, secure, and well managed content infrastructure. They can centrally control content as needed, and facilitate ad hoc information sharing when needed—all in a manner that dials into the operational mandates of their organization.

EXPERIENCING A CONTENT INFRASTRUCTURE

Let's start with our own experience as typical business users. We're immersed in content. Text, photos, full-motion video clips, conversations, and interactive exchanges are all instantly available. Whether we're using a mobile 3G handheld or a richly featured desktop, the devices hardly seem to matter. They simply connect to the expansive content infrastructure and smart systems resources.

This content infrastructure also adapts to the ways we work. We're no longer faced with the artificial divide between information managed by disparate applications. We no longer need to think about structured data on one hand, and unstructured documents on the other. In an era of convergence we unlock whatever content we need, when we need it, regardless of storage device, format, or information silo. We

are able to manage any type of content, produced by any source imaginable. We engage with our customers, partners, and colleagues whenever we want. Furthermore, our IT staff can manage this environment in a flexible fashion that balances the operational needs for security and compliance, while also managing content at the speed of business.

For instance, the research director at the biotech firm can easily structure the tasks for organizing an upcoming symposium—tracking invitations, report submissions, reviewers' comments, and the like—according to the myriad ways that people, processes, and information intersect. The research director is not only cataloguing content in a systematic manner, but also adapting it to his (or her) needs to get a job done. At the same time, the IT staff can easily support these activities while ensuring that organizational mandates for content security, archiving, and compliance are met.

CONTENT COMPONENTS IN ACTION

Behind the scenes, we leverage a rich set of content components that encapsulate industry expertise, application know how, and best practices. Transparent to our experience as business users, we're using “mashups” and composite application technologies to drive powerful content applications.

These components, in turn, are well categorized; they're intelligently organized for

solving our business problems and managing our ad hoc processes. We're exploiting both industry-wide and company-specific taxonomies to automatically tag the information snippets we produce. We create and share our own content categories on-the-fly, to label our immediate tasks at hand.

To return to our example and the research director, he or she naturally adapts to the flow of content. The content infrastructure manages symposium submissions, monitors what the director is doing, and learns from experience. The content applications automatically categorize submissions by research topics and business value—combining a standard scientific taxonomy with a proprietary set of categories, as well as with an ad hoc set of terms, structured as a folksonomy and developed on-the-fly within the research group. When external reviewers add comments, the director can immediately analyze the responses – the content infrastructure automatically assembles content from disparate sources.

We refine our solutions portfolio through continuous improvements. We restructure the flow of content by providing the human insights and analysis at the critical junctures. Through managed empowerment, we build new relationships and innovative business processes. Our application developers can finally keep up with the speed of business.

BUILDING BLOCKS FOR AN ADAPTIVE ENVIRONMENT

What do we need to do to build the environment for adaptive ECM? It is not enough to simply store content within a shared repository. We've been doing this for many years. We are confident that all the managed content is secured by the underlying system. We now need to enhance the capabilities of this shared repository, and transform it into a critical set of resources and services that extend across our enterprise computing environment.

Location, security, and compliance are no longer problems for our global operations. When we engage with company teams around the world, we have immediate access to the information we need. Thanks to caching and virtualization technologies, network latency (when fetching content or invoking services from remote locations) is a distant memory. Through information rights management technologies, we continue to protect all of our sensitive business information, track its use, audit the access, and ensure compliance with our operational procedures and mandates, even when it flows beyond the boundaries of our organization.

We build upon the capabilities of a virtual repository – capable of managing content across our distributed organization. Thus we instantly discover how one remote team organizes its research reports through schema services. We analyze the content stored by other teams through query and search services. We link the tasks we do with those of our business partners through workflow services to produce a seamless work experience.

LIBERATING CONTENT

What are the end results for adaptive ECM? The content resources and services we need to do our work are instantly available, ubiquitous, and accessible just when we need them. The management resources and services our IT staff needs to support our distributed work environment are easy to establish, monitor, and manage to meet the operational needs of our organization.

To be sure, we still maintain the boundaries of our enterprise environment, but in a sensible fashion. Security and compliance remain important concerns when doing business over the network. Yet these boundaries no longer constrain us. Rather they actually guide and liberate our use of content across all aspects of our work environment. Whether we are seeking answers to simple questions, analyzing complex

The EMC Documentum family of enterprise content management solutions provides a comprehensive, fully-unified software platform to manage and leverage content in a cost-effective, controlled manner, providing secured access and re-use across the enterprise. It combines a unified platform with a strong compliance infrastructure to support key business needs including collaboration, interactive content management, transactional content management and archiving. To learn more, visit www.software.emc.com/documentum or call 1-800-607-9546.

situations, or gaining the insights for making important decisions, we have rapid access to the information we need at these critical junctures.

In short, the future for ECM depends on content services and pervasive, secure access to business information regardless of location. The consequences of adaptive ECM are far reaching. When we are immersed in the content we need to do our jobs, we create radically new methods for doing business across the web-enabled enterprise.

Security and Search

Two trends affecting the ECM industry.

By Carl Frappaolo

The enterprise content management industry is never stagnant. While the advent of major and radical changes to the mix of technologies and platforms do not come along every day, features and functionality are continuously maturing and improving. Currently, we are in a stage where we are more maturing than revolutionizing. This is not a bad thing, it gives the market an opportunity to embrace the technologies and fine tune the business benefits derived from them.

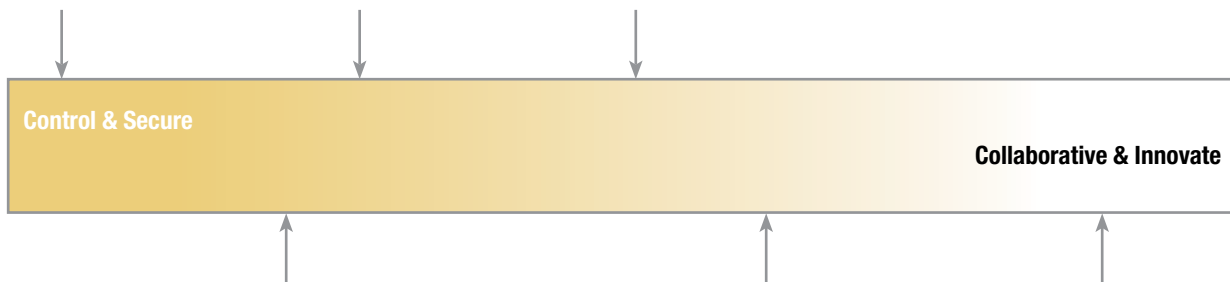
This ECM market projection can begin with a general framework, or overall positioning of ECM. The market is maturing to a point where ECM is being driven by two high level business needs; collaboration and innovation, versus security and risk management.

In many cases intellectual property (e.g., patents, trade secrets, product development files, customer lists) are organizational assets that, if inappropriately shared, can decrease in value and, in the worst case, cause the demise of the organization.

Though not exclusively associated with ECM, enterprise content plays a vital role in each of these business drivers. Content, and the ability to share and collaborate around content, can be a major enabler that drives innovation and knowledge exchange in an

organization. The ability to leverage collective intellectual property is an organizational asset, a point of differentiation, and a competitive advantage. Social network analysis (one relative newcomer to the ECM space) will enable quicker and broader brokering of tacit knowledge resources and help drive collaborative innovation. Focused on such goals, organizations will be tempted to take very liberal views to content security, enabling rapid capture of content, dissemination of content, and broad and deep approaches to sharing/discovering that content. On the other hand, in many cases intellectual property (e.g., patents, trade secrets, product development files, customer lists) are organizational assets that, if inappropriately shared, can decrease in value and, in the worst case, cause the demise of the organization. Furthermore, organizations are painfully aware of the fact that to some degree their content is regulated by industry and government mandates. Compliance and e-discovery are paramount on virtually every organization's mind. Any prudent organization must manage its risk as it relates to content.

Herein lays the ultimate challenge to the organization faced with forming an enterprise content strategy. *Business* decisions must be made with regards to each source of content, in each possible context, as to the potential and desired value in sharing the content versus the potential risk in exposing the content. Based on calculated and informed decisions, a system comprised of policies (including a governance document), enforced through appropriate technologies, should be designed and constructed. This is a powerful positioning or role for ECM.



Consider the illustration above. The bar represents a continuum of the business need concerning collaboration and security. The arrows represent specific needs of the business based on a full needs assessment. When viewed collectively, a full appreciation for the degree to which a strategy and system are needed to secure and control, the degree to which security is not an issue (open content up to unfettered access), and the degree to which regulated and monitored access is required (the darker area) becomes evident. Based on this level of analysis, an ECM technology strategy to support the business strategy begins to develop.

In this example, the organization has determined it has six specific policies or levels of control to provide. There is a slight preference or leaning towards control and secure. In these instances, emphasis will be placed on technologies such as email management, trusted timestamps, content-addressed storage, and records management. The two arrows approximately in the middle of the continuum suggest that policies need to be created that support regulated and monitored access, indicating a need for technologies such as digital rights management, Web content management, and data loss prevention. The arrow at the far right of the continuum represents a need to make some content generally available in a highly collaborative format. This may require technologies such as social network analysis, search, content authentication, and user authentication. The continuum is not the definition of the strategy per se, but a way to visually appreciate the range of functionality requirements from an integrated family of ECM technologies. This mix is likely to include traditional ECM technologies and ECM technologies still undergoing evolution.

Among those in the latter group is search—a perennial favorite of mine. Although search is not a new technology, it continues to evolve and become

more powerful. In addition to ongoing growth in the underlying approaches used to execute a search, search will experience broader application (because of the further maturing of the underlying search engines). Text analytics will become much more mainstream, moving “search” into more of a BI role. Search engines will provide sentiment analysis. Thus, not only will the search find content related to a subject or query, but be able to position it as a positive, negative, or neutral take on the subject. Qualified decisions will be automated by the search engine concerning whether the discovered content is “new enough” to warrant a push to the query owner. Discovered content may be new, but text analysis may determine that the “document” does not contain any new information or opinion on the subject. While the content may be tagged and captured as part of a library, the query owner would not be notified of new content or perhaps notified at a lesser level of criticality (e.g., new content has arrived, but it does not provide added insight).

Text analytics will also provide temporal trails, or chain of awareness insights into content. Perhaps most useful in e-discovery settings, this level of analysis can draw connections between individuals and/or topics and indicate how and why the two connected.

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Future Trends Forecast

EmTag predicts the most significant industry trends during the next eighteen months. A compilation of thoughts from AIIM's Emerging Technology Advisory Group's members.

By EmTAG

SEARCHING, NAVIGATION, AND AUTO-CATEGORIZATION

The onslaught of information in modern organizations is overwhelming. Many organizations are using tools that augment their ability to find information through automated search and categorization because they have no other choice.

VOICEMAIL WILL BE RECOGNIZED AS RECORDS RESULTING FROM VOIP AND UNIFIED COMMUNICATIONS

Implications include increasing compliance/RM nightmares; and advanced search tools and text analytics expanding from current niches (e-discovery, litigation support, DoD/DHS).

ENTERPRISE 2.0

There will be a groundswell adoption over the next two to three years thanks to Web 2.0-type tools inside the firewall. (Because of this, content security and search become even more important.)

THE EMERGING TECHNOLOGY OF DESKTOP APPLICATION CONTAINERS

These application containers allow Web applications to be deployed via browser downloads and permit application access to system resources, such

as the disk drives, which browser applications cannot normally utilize without installing a plug-in.

VIRTUALIZATION OF ECM

With service-oriented architecture (SOA) services and standard APIs, such as JSR-170, we can expect more vertical and custom applications to be available that are independent of the content repository brand.

SECURITY.

The ECM industry is finally starting to pay sufficient attention to information [content] security. The recently reported data exposure at Monster.com illustrates the need. There is an emerging need for tools and techniques to weave secure content management into the daily fabric of business operations. (Read more at AIIM Online: Quick Link 33529).

AUDITABILITY

Thirty-two states currently have strong data breach laws with both civil and criminal penalties. Pending Federal legislation in the U.S. will raise this issue.

ENTERPRISE RECORDS MANAGEMENT

Senior management finally views compliance and associated records management as something that

needs to be funded for large-scale implementation. Investment in enterprise records management accelerates dramatically in 2008 especially as big companies try to extend their file plans and retention schedules to email and MOSS 2007 repositories.

BI AND ECM

There has been a gradual move to consolidate unstructured data. The BI universe has gotten serious about this issue with Business Objects moving forward to acquire technology in this area.

LITIGATION/COMPLIANCE AS AN “ENTERPRISE” DRIVER

The visibility of litigation and compliance as drivers for “enterprise” ECM investments will increase in 2008. An increasing interest in companies with higher regulatory and litigation risk (especially with the new Federal Rules of Civil Procedure [FRCP] rules) to address the “non-records” or temporary/transitory files on files shares, C drives, mobile devices, etc.

THE REDEFINITION OF SOA TO EMBRACE ECM, BPM, PORTALS, AND WEB 2.0

Over the past year, IBM has pretty much redefined SOA from being focused primarily on integration technologies, such as Web services, to now embrace a broad spectrum of desktop, content management, workflow, social networking, and collaboration tools. This evolutionary leap is accomplished by embracing “portal” technologies—which use standard APIs such as JSR-168 (portlets) and JSR-170 (content repository)—as part of SOA. Of course, MOSS is another flavor of portal technology that is also growing in popularity.

AUTOMATED TRANSLATION/TRANSCRIPTION

Some of the transcription/conversion services of today will evolve considerably to provide a richer content set for searching and value-add. Specifically, by unlocking translation/conversion capabilities (audio and video files automatically converted to text-based content for searching and categorization), you unlock an entirely new world of value by allowing people to tap into untapped resources. This also applies to real-time translation capabilities.

THE DIGITAL HOME

With the pervasiveness of broadband, home networking and maintenance increasingly become simpler (e.g., impending release of Windows Home Server), but not simple enough. Wall-plug ethernet appears stable and wireless gets faster (Wireless-N). End-to-end electronic processes for consumer-facing activities are emerging such as SOHO MFPs used for scanning. Implications will include the ever-increasing demand for e-government and e-business, especially concerning ease-of-use.

INDIVIDUAL LINES-OF-BUSINESS WITHIN COMPANIES ARE UNWILLING TO WAIT FOR AN ENTERPRISE-WIDE DM SOLUTION

This is different from three years ago, because almost all high performing LOBs have implemented DM. If you want to have top performance today, you must be willing and able to implement DM.

SEARCH

The focus will shift from search and retrieval to text analytics.

ORGANIZATIONS WISHING TO MAINTAIN COMPETITIVE ADVANTAGE WILL INCREASINGLY OPT TO BUILD AS OPPOSED TO BUYING PRE-PACKAGED APPLICATIONS

Oracle’s e-Suite and SAP will not drastically increase penetration except among government with non-strategic business processes becoming best candidates for SaaS.

EmTAG (Emerging Technology Advisory Group) is a committee of AIIM members charged with monitoring technology advances and assessing their impact on the AIIM community.

The Inexorable Move Toward Magnetic Media for Archival Stores

By Jack Scott

One area of digital storage that should interest records managers and a number of other corporate groups, in addition to IT, is archival storage. Trends are emerging that eventually will place most archival storage on magnetic media; much of it is there now:

- A “perfect storm” of phenomena (Internet, 9/11, compliance requirements, evidentiary importance of email as a corporate chronicle, skyrocketing volume with 24X7 world-wide access requirements)
- Cheap magnetic storage (but not storage management)
- Continued demise of optical technology as a medium for data storage.

The Securities & Exchange Commission (“SEC”) Regulations 17 CFR 240.17a-3 and 17 CFR 240.17a-4 stipulate the records retention requirements for the securities broker-dealer industry. Rule 17a-4(f)¹ (also the “Rule”) was adopted on February 12, 1997, and expressly allows records to be retained on electronic storage media, subject to meeting certain requirements.

In 2001 and again in 2003, the SEC issued Interpretive Releases that amplified the Rule. Although applicable to financial industry broker/dealers, the requirements are becoming a technology standard for archiving (legal record) emails.

By my count, there are now nine vendors with ten hardware products for enterprise-class archival stores with two more unannounced in “stealth mode.” Collectively, WORM-based² products contributed slightly more than three percent of the industry’s storage revenue in 2006.³

In the digital storage Industry, usually characterized by a frenetic pace of announcements, second quarter (2007) was relatively slow, except for archival stores.

- In April, IBM announced new file-system support for the DR 550 along with encryption and new API interfaces for developers. IBM is closing in on EMC’s Centera with this product.

- Not quite three months later, on July 16, EMC announced generation 4 LP Nodes, 750GB disk drives and Adaptive Cooling (this allows the disk RAID groups to spin down when not in use) for Centera. The bottom line is EMC provides fifty percent more capacity in Centera and sixty-seven percent better power efficiency. I don’t know exactly how “power efficiency” is calculated but it is safe to assume that EMC is turning Centera green. My understanding is that Centera, which was first to market for this product class and leads in market share, still could use some scalability enhancements, but it is significantly faster than optical disk in most applications.
- Optical disk (excluding DVDs) continues losing market share to the magnetic storage vendors. The best example is Plasmon Inc, whose strategy has been to leverage the optical disk-for-data part of the industry as far as possible, primarily with its UDO (ultra -dense optical) which now contributes more than half its revenue. Plasmon also markets DVD libraries and drives and magnetic disk front-ends.

Just as archival storage passed from micrographics to optical, it is now passing to magnetic media with the proper engineering modifications in controller micro-code and on the physical media itself.

I am frequently asked if there is any “revolutionary” technology that is likely to alter this picture; my short answer is “NO.” Solid state storage (semiconductor-based such as flash memory or possibly even bubble technology) is making its way up from the bottom (PC disk storage), but I believe it will be years (if ever) before solid state economics are superior to mechanical disk economics for archival storage, a precursor to their adoption. Evolutions in WORM magnetic tape and tape libraries continue to make them attractive for archiving. I am not aware of any advanced technologies that will allow optical recording to compete with magnetic technologies for broad-scale archiving, thus the demise of optical will continue.

This part of the market is destined to explode as we store more e-records including Web pages, video recordings, photographs, emails, and digitized voice records. I am told that the Revised Rules of Civil Procedure (December 1, 2006) are likely to generate more requirements for archived records.

Jack Scott was the managing partner and co-founder (and now a director) of Evaluator Group, a Denver-based research and consulting firm specializing in digital storage on magnetic disk and tape products until he retired from that position in July 2006, after 45 years experience in the storage part of the IT industry. He is a member of AIIM's EmTAG (Emerging Technology Advisory Group) and the Strategic Advisory Board for ITIM (Information Technology Infrastructure Management) Trade Association. He is a director of Cheetah

International, a captioning and court-reporting software and service vendor.

¹ Adopting Release 34-38245, 62 FR 6469 (Feb. 12, 1997).

² WORM, an acronym meaning Write Once-Read Many, the underpinning technology for SEC 17(a) 4 compliant products.

³ By my calculation, all nine vendors and ten WORM-based hardware products produced about \$985M vs. total storage revenues of \$28.6B in 2006, according to IDC.

Peter's PDA

By Bob Larrivee

The world is shrinking, or so the saying goes. Shrinking in terms of how quickly we can respond and move into action in our business lives. 24/7/365 service is available and more commonly used to keep competitive thanks to those little devices known as PDAs. Not only can we communicate through these devices using our email and text messages, they are also cell phones should we choose to actually speak with someone. They are the Swiss Army Knives of technology!

Now enter compliance. As technology moves farther and faster than ever, it also opens the potential for risk. Take poor Peter for example. Peter is sitting in an airport awaiting his flight when he receives an email on his PDA. The email came to him with a document attachment containing the medical reports for one of his patients. (Did I not mention that Peter is a doctor?) Being the diligent physician, using the technology he has in hand, Peter opens the document to review the results. Normally, this is not a problem however Peter is greeted by a friend and being the well mannered person his Mother raised, Peter puts his PDA down on the seat next to him in order to stand and greet his friend properly.

While Peter and his friend are talking, the PDA slides off the seat and onto the floor below. Almost simultaneously, the call is made for Peter to board the plane. He quickly gathers his belongings, boards the plane, and belatedly realizes his PDA is missing. Upon landing, his PDA is nowhere to be found. Peter must now report the lost device to his service provider for replacement and service cancellation, but is comfortable in knowing that the

patient record still exists in his email account so recovering that information is not a problem once he has Internet access with his computer.

The question now is one of patient privacy and how does this loss play under HIPAA? You see, not only did Peter have this particular patient's information in his PDA; he has many records that are stored there because he did not have a policy or process to delete this information regularly or when it was not longer needed for immediate action. Another question to ponder relates to ethics and whether Peter is bound to report this information loss to his patients and perhaps the Medical Board. Breach of security is a real issue and the potential for this is increased through the use of PDAs as a business tool.

That is not to say we shouldn't use these devices in business. Technology is wonderful, including, of course, PDAs. With their increased capabilities, they are modern day marvels that help us become more organized, more efficient, and more effective in our daily lives. The challenge we face is one of maintaining compliance with regulatory statutes. PDAs are a delivery channel that must be taken into consideration as an integral part of any ECM or ERM environment. As such, they must be included in the overall security scheme of your organization and looked upon as not only a tool but a risk. Imagine if this information were found in the wrong hands, what might happen. Imagine if this was financial information with account numbers, names, and more. Imagine if something disastrous were to happen as a result of this information loss. The responsibility lies with the organization to set policy in place and with each one of us to ensure those policies are met. Use the PDA, but use it wisely.

Bob Larrivee (blarrivee@aiim.org) is director, AIIM Education Services and an EmTAG Member.

Business Intelligence Meets ECM

An integrated approach to managing and accessing data will help organizations become even more efficient and competitive.

By Janelle Julien

Information, whether it is structured or unstructured content, is the most valuable asset of any business. The inability to find data in an accurate, consistent, and timely manner can hamper decision-making.

ECM capabilities manage traditional content types (images, office documents, graphics, drawings, and print streams) as well as the new electronic objects (Web pages and content, email, and video and rich media assets) throughout the lifecycle of that content.

In the mid-1990s, Howard Dresner at research organization Gartner, Inc. predicted, “The key to thriving in a competitive marketplace is staying ahead of the competition. Making sound business decisions based on accurate and current information takes more than intuition. Data analysis, reporting, and query tools can help business users wade through a sea of data to synthesize valuable information from it—today these tools collectively fall into a category called ‘business intelligence’.”

WHAT IS BUSINESS INTELLIGENCE?

While there are several competing definitions and viewpoints for business intelligence (BI), Whatis.com defines it as “a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions. BI applications include the activities of decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis,

forecasting, and data mining.”

Developing a BI plan is vital to an organization’s success. Business intelligence (also called decision support systems) goes beyond collecting information. Unstructured content can offer significant business value, and BI vendors offer capabilities for enterprise search to extend access and analysis of unstructured data through text analytics, federated search, etc.

BI focuses on collecting and analyzing structured information that is relevant to an organization’s past, present, or future operations. According to business intelligence consultant Kevin Conley, “Business intelligence is about getting the right data to the right people at the right time.” BI enables informed decision-making based on real-time analysis in lieu of relying on intuition or an educated guess.

An effective BI system uses applications and technologies to secure varying levels of user access to a data warehouse, maintain enough data space, and plan for data retention. Techweb.com defines business intelligence software as software that “enables users to obtain enterprise-wide information more easily, and is more sophisticated than typical decision support tools, because they more tightly integrate querying, reporting, OLAP, data mining, and data warehousing functions.” With these tools, decision-makers can predict such variables as customer behavior, market conditions, and trends. Other elements of a BI system include customer relationship management (CRM),

budgeting tools, and business activity monitoring (BAM).

Dashboards, a popular business intelligence tool, track metrics and key performance indicators. Borrowed from the concept of an automobile dashboard that displays important information to the driver, business dashboards display important data through tables, charts, maps, traffic lights, etc. A dashboard is a user interface that organizes and presents information in a way that is easy to read. It facilitates faster and constructive strategic decisions by automatically displaying relevant data. For example, while reading email, the dashboard searches for data relevant to that activity and presents it.

Common variations include the digital dashboard, enterprise dashboard, and executive dashboard, which “visually ascertain the health of a business enterprise via key business indicators.” These “at-a-glance” displays gather real-time data from multiple sources to provide alerts, action notices, and summaries of business conditions. Dashboard technology can be customized in various ways and named according to function (i.e., Financial Dashboard). Such elements as stock quotes, email, sales leads, and incoming customer calls can be incorporated into an enterprise dashboard. Dashboards are ideal for organizations that need to manage performance in such areas as revenues, sales, human resources, technology, finance, quality control, and compliance.

“There is more demand for real-time information, especially for operational managers,” says Dave Caldeira, IBM’s vice president of Platform Product Marketing for Enterprise Content Management. “There’s the ongoing pressure to be flexible. For them, dashboards and alerts from data sources about multiple events make that possible.”

HOW IS BI DIFFERENT FROM ECM?

BI is the ability to evaluate any information across the spectrum of time relevant to business transactions for decision-making. Information can come from a variety of sources (structured and unstructured) and spans real-time. This enables people to react to immediate market conditions or history.

According to BI consultant Claudia Imhoff, Intelligent Solutions, there has always been a push for a full understanding of anything like a business product or campaign. The first twenty years of BI’s focus was on structured information about a customer, product, etc. “What has always been problematic is the ‘semi-structured’

information: data like a doctor’s notes about a patient or information about CRM relations. No one knew where this data resided or how to format this information.” Until recently, there had been no technological way to access “semi-structured” information, but the last several years have seen a technological shift with the emergence of data integration vendors.

On the other hand, ECM provides services to control content for such factors as cost efficiency and compliance in the context of the business. “ECM has a lot of metadata that can move unstructured data into structured formats,” says Alexandre Pierre, senior product manager, Open Text. “BI tools use more business-oriented metadata client information. This helps IT and users access that metadata information, which is usually not report friendly.” For example, ECM technology can provide highly secured access to metadata, while BI tools can provide a list of documents that links to a customer between certain dates accessed by a specific user.

“While BI traditionally has analyzed structured data to answer questions about business performance, ECM has been concerned with managing unstructured content,” says Louella Fernandes, principal analyst at Quocirca Ltd. “The volume of unstructured content is rapidly increasing, and will be further accelerated by the use of Web 2.0 technologies such as wikis, blogs, and RSS feeds in the enterprise.”

With BI solutions, end users can access information that is buried or not easily accessible (i.e., within databases) without IT involvement and in a timely fashion. This empowers them with the ability to understand what’s going on in a daily business and make informed decisions. “BI is a different layer of structure,” says Caldeira. “It provides a higher level of insight into business operations. These views are necessary to make management decisions. Think of BI situated above ECM but alongside content-enabled apps.”

PLAYING TOGETHER: BI & ECM

The value to the business of unstructured and structured content are intrinsically linked; to gain a full understanding of the business requires reporting and analyzing both structured and unstructured enterprise content.

“If a sales person wants to analyze his sales performance versus a forecast for a particular customer,” says Fernandes. “He or she may also want to view all the communication between that customer and anyone else in the company, as well as news articles, financial

reports on that company to more fully understand the opportunity that this customer represents.” For businesses who want to gain more value from their data, and engage more users to access the information they need, Fernandes recommends taking an integrated approach to BI and ECM.

However, while BI solutions are good at identifying real value within information, the ECM solution is where the real benefit of sophisticated search capabilities can be gained. This can be realized by “offering ‘value search’ capabilities within an ECM solution in addition to the more generalized search capabilities that may be available with BI solutions,” says Fernandes. It’s possible that search technology will become more codified, pulling specific information from unstructured documents to enable BI tools to work more effectively against the information. “BI can then normalize all the information and report against it as if it was formal data from a database.”

Cheryl McKinnon, portfolio manager for Open Text’s Livelink ECM says, “Users need a tool that can address information for day-to-day activities while collecting the correct information. People need to access the data behind the content. ECM and BI can do that by bringing forward this information to give context to the data.”

Charlie Brett, managing principal, Xerox Global Services, predicts that BI implementations will integrate with ECM implementations, because not too many companies will buy BI tools and BI vendors may not pull ECM technology into suites. BI applies to both the private and public sectors. Says Brett, “Specifically within intelligent law enforcement where there’s lots of information, because it’s logical to use BI tools against large amounts of text.” He also notes that there is a growing trend toward enterprise information integration (EII), which is intrinsic to finding patterns within information.

When it comes to content analytics, Caldeira contends that it’s far more essential in the compliance world, because of the risk inherent in unstructured data residing in ECM systems (complex documents, email, etc.). “It’s necessary to mine the information to understand the risk for compliance,” he says. As such, the process would involve legal/compliance concerns along with a risk management application versus a simple records management application. “Evaluation is necessary to find historical patterns of a possible problem in order to have a real-time reaction. This could be a unified event mechanism, qualifying a specific role/user with interaction to content, or a system can monitor the ‘event,’ flag

for evaluation of risk, compliance.”

Pierre also stresses that different BI reports can be integrated into the ECM world. These reports can monitor user access, address compliance concerns by building and storing reports that give snapshots of a state during a day automatically, or provide an audit trail so that administrators and end users can learn how to fine-tune systems and ECM repositories, and identify bottlenecks.

Organizations that prioritize compliance requirements have been the early adopters for BI solutions, non-regulated environments have been slower to adopt. “It’s necessary to educate users about the benefits of BI tools like BAM,” says Caldeira. “When BPM becomes widely adopted, customers tend to automate the ‘low-hanging fruit’ or repeatable transactions that are easily defined, identified, or rules-based. Now people must deal with the exceptions to the rules. Human judgment is involved. Managers have become the high-skilled knowledge workers who need more sophisticated tools for decision-making.”

Educating users plays into the strategies of BI vendors that tout “BI for the masses” or operationalizing BI to any operational manager to get information in the context of business not just analysts. BI solutions become necessary for the highly skilled knowledge worker to execute their jobs.

However, despite the promise that the coexistence of BI solutions and ECM technologies brings, Imhoff urges patience to both end users and vendors. “We’re still in the infancy of getting all of this coordinated; people will get frustrated with failed expectations. In order for this to work, it will require forethought and deep thinking about the architecture that’s going to support both environments.”

McKinnon also notes that BI reporting and analytical capabilities can make a connection between managed content and ECM repositories. “There needs to be a new perspective on managed content,” she says. “It’s about more than running reports. [BI] gives a graphical view of the content and allows the decision-makers to make the necessary adjustments.”

What does the future hold? It may still be too early to predict, but the driving message is that there will be a merging of integration and content.

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