IBM `Information Management` software

Using the eTOM to Develop an Enterprise Content Management Strategy

Executive Summary

Enterprise content management (ECM[1]) has evolved to a level of sophistication and importance where it can now address a broad range of business process requirements identified by the TeleManagement Forum's[2] enhanced Telecom Operations Map (eTOM)[3]. ECM can effectively manage the critical corporate content associated with many of the eTOM business processes in a cost-effective manner. ECM can also integrate (using a services oriented architecture) with existing BSS/OSS to reduce costs, increase efficiency and improve the customer experience. A provider can use the eTOM to systematically identify business areas that can benefit through use of an ECM platform and applications built upon it.

All of the business activities identified in the eTOM's Enterprise Management area are highly dependent upon the efficient and effective management of critical business documents. Corporate planning and strategy documents, intellectual property, research, financial records, employee files and the people who create, disseminate and manage these documents can greatly benefit from the consistency, security and efficiency that an ECM platform provides in managing the lifecycle of these documents. Providers who are challenged to meet corporate, industry or governmental compliance requirements will find that an ECM platform can also address those concerns as part of the overall ECM strategy.

Marketing and supply chain management – two business activities that fall under the eTOMS's Strategy, Infrastructure and Product area – can benefit from the application of ECM as each of these involve the iterative and collaborative development of ideas, analyses, plans, materials and business agreements that determine a major portion of a provider's future direction and activities. Establishing a central and secure repository for a marketing organization's content can facilitate easier collaboration and faster production of marketing materials and execution of marketing plans. Likewise, supply chain development and management involve significant evaluation and analysis prior to finalizing a contract. Applying ECM capabilities to supply chain processes can enable a provider to far more efficiently manage key activities such as supplier selection and the contract management lifecycle, and provide the added advantage of auditing and reporting on the efficiency of these processes.

[1] *Throughout this paper the term ECM includes the business processes associated with the creation and /or management of content.*

[2] *TeleManagement Forum, www.tmforum.org*

[3] *For a detailed overview of eTOM consult www.tmforum.org/browse.aspx?catid=1647*

ECM is particularly relevant to two areas of the eTOM's Operations area. Customer relationship management can be significantly enhanced by ECM's ability to manage the growing volume of "unstructured" customer data such as contracts, correspondence and billing statements. The combination of this information with customer data maintained in the CRM system provides a "single view of the customer" that enables faster resolution of customer inquiries and a greater level of customer satisfaction. The high volume of transactions involved in supplier and partner relationships can be executed more efficiently – from procurement through payment – through the application of ECM and integration with ERP systems.

By adopting an enterprise strategy, a provider can address a wide range of business process requirements with a single platform thereby lowering the overall total cost to meet these needs in comparison to implementing multiple isolated point solutions. A well developed ECM strategy can positively impact a variety of a provider's operations and services; therefore, evaluation of an ECM vendor should also consider the vendor's established industry competency and the vendor's overall ability to offer software, hardware and services specifically tailored to the communications industry.

Why Adopt an Enterprise Strategy for Content Management?

AIIM, the Enterprise Content Management Association[4], defines enterprise content management (ECM) as "the technologies used to capture, manage, store, preserve, and deliver content and documents related to organizational processes. ECM tools and strategies allow the management of an organization's unstructured information, wherever that information exists." Implicit in this definition is the idea that unstructured information – the volumes of information created daily such as email, Microsoft Office documents and Adobe PDFs – is pervasive in an organization.

Enterprise Adoption Supports Thousands of Employees

A North American provider has aggressively adopted an enterprise content management strategy. Approximately 140,000 employees utilize the capabilities of an enterprise content management platform. There are more than 30 business process management applications built on this platform to manage the documents and processes associated with long distance services, web hosting, real estate, finance, customer service, accounting, fleet management, human resources, and IT planning and provisioning.

[4]   www.aiim.org

A critical step in developing an enterprise content management strategy is the careful identification and assessment of the departments, activities, processes and interactions whose efficiencies could be significantly improved through the application of ECM. The result of such analysis will reveal the common requirements across many of these areas (hence the rationale for implementing an enterprise content management platform) as well as the special requirements which can efficiently be met by building applications on an ECM platform or by integrating ECM functionality with existing BSS/OSS. An ECM platform strategy can also simplify application deployment and lower the total cost of ownership for a geographically distributed enterprise.

eTOM Facilitates Development of an Enterprise Content Management Strategy

Enterprise assessment of content management needs can be aided by the enhanced Telecom Operations Map. The eTOM is the TeleManagement Forum initiative to develop a business process framework for use by service providers and others within the telecommunications industry. The eTOM describes a provider's key processes and analyzes them to different levels of detail according to significance and priority for the business.[5] It serves as a blueprint for process direction and provides a neutral reference point which can be used to analyze a provider's business processes — both internal and external.

Providers may already have several content management repositories. These are typically the result of previous independent initiatives to meet departmental needs. From an enterprise perspective, inefficiencies with such an environment are numerous including the overhead and cost of licensing, maintenance and administration for each system; the absence of a consistent approach to disaster recovery; and the inability for systems to easily share information or participate in processes involving other departments or external organizations. Such an environment stands in marked contrast to the integration of processes and sharing of information identified by the eTOM.

There are sound reasons to use the eTOM to develop an ECM strategy. The eTOM is a widely accepted and understood model developed by members of the TeleManagement Forum and embodies the collective knowledge and best practices of the worldwide telecommunications industry. The structure of the eTOM can guide a provider to conduct a systematic analysis of the business processes that would benefit from the application of ECM capabilities. As previously mentioned, such an analysis can identify areas/departments/activities/processes that have common requirements that can be served by core ECM capabilities, by applications built on the ECM platform, or by integration with existing BSS/OSS. In contrast to a collection of disparate repositories or applications, an enterprise-wide approach can facilitate information sharing regardless of location and can be significantly more cost effective. Additionally, the analysis can identify information and process interdependencies of various departments. Once identified, duplicate processes and redundant information can be eliminated and existing processes and information sharing can be optimized (using the process design, simulation and monitoring capabilities of an ECM platform) to reduce costs, increase operational efficiency and improve customer experience.

[5] *For detailed descriptions of the processes refer to enhanced Telecommunications Operations Map (eTOM) The Business Process Framework Addendum D Process Decompositions and Descriptions*
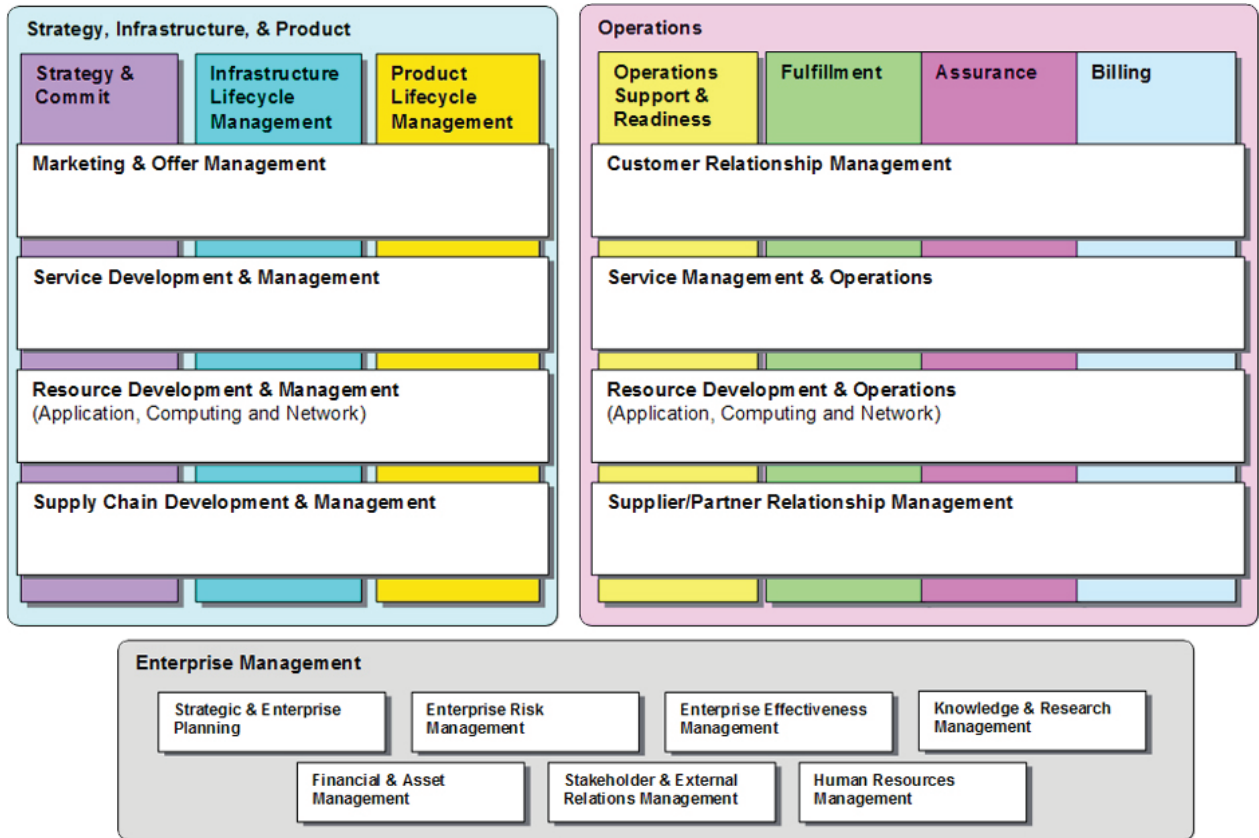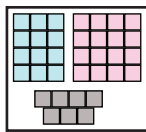
*Figure 1: enhanced Telecom Operations Map (source: TM Forum)*

Using the eTOM to Develop an Enterprise Content Management Strategy

The preceding diagram outlines the three principal areas of the eTOM – Enterprise Management; Strategy, Infrastructure & Product; and Operations. Each area is subdivided to identify activities or processes that support the entire enterprise or are specific to the Strategy, Infrastructure & Product, and Operations areas. In the eTOM, each of these subdivided areas has a detailed description of the specific processes. Using the eTOM's level 2 process descriptions, this paper systematically identifies the common business needs that can be addressed by an enterprise content management platform. The paper also discusses specific requirements which can be addressed by ECM applications built on the platform or integrated with existing systems. In addition, this paper highlights the areas in the eTOM where the application of ECM can provide significant benefits in lowering operational costs, improving organizational productivity and positively impacting customer experience. In the following pages, the shading in the eTOM icons graphically indicate the eTOM area being addressed.

eTOM: Enterprise Management and the Role of ECM
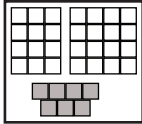
Enterprise Management within the eTOM includes knowledge and research, strategic and enterprise planning, enterprise risk, enterprise effectiveness, financial and asset, stakeholder and external relations, and human resources.

ECM capabilities have broad applicability in this area because Enterprise Management encompasses activities and processes that are critical to the functions and efficiency of the entire organization. ECM can enable greater efficiency and security in the creation, capture, dissemination and processing of critical corporate information such as strategic plans, corporate policies, intellectual property, financial reports, personnel records and technical documentation that are vital to the direction and management of the enterprise.

Enterprise Management: Strategic & Enterprise Planning
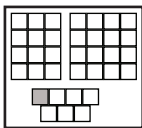
Strategic and Enterprise Planning as identified in the eTOM includes strategic business planning, business development, enterprise architecture, and group enterprise architecture management. Applications of ECM include:

- developing concepts for new or diversified revenue streams and broadening the customer base

- managing investigation and implementation of mergers and acquisitions

- defining required skill sets for architects

- managing certification processes for architects

- documenting the process used to capture, modify, communicate and review the enterprise architecture and manage related exceptions

Through integration with popular applications such as Microsoft Word, Excel, PowerPoint, and Visio, ECM facilitates the creation of plans, policies, guidelines and documentation templates that can define and drive the planning process. The collaborative capabilities of an ECM platform help accelerate the process of defining, refining, reviewing, approving and sharing business plans. ECM security assures the information is accessible only to those who need to know, both internally and externally. Documents created in this manner then become a secure, yet easily accessed, body of critical corporate information.

For providers faced with mergers or acquisitions, ECM can efficiently manage both the processes as well as the volumes of documents required of due diligence, planning and implementation. ECM can facilitate acceleration of the acquisition process by integrating the acquired provider's unstructured information sources to leverage the content and its inherent business value. As part of the process, critical documents associated with the merger activity can automatically be retained as critical corporate records in accordance with government requirements.

Conquering the Chaos of Unmanaged File Shares

One provider applied ECM to manage hundreds of corporate file shares, automatically capturing and controlling the critical documents that had previously been unmanaged and unsecured. Employees continue to develop, save and share the documents that are critical to planning and daily operations via the file shares, however, the documents are now safely and consistently managed using ECM. One particular department enthusiastically embraced ECM after losing planning documents that represented several months of work; previously there was no formal management of the file share.

Enterprise Management: Risk
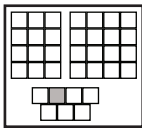
Within the eTOM, Risk includes business continuity, security, fraud, audit and insurance management. Applications of ECM include:

- developing policies, plans, organizational roles, responsibilities and escalation procedures
- defining fraud management policies, guidelines, best practices and control procedures
- defining audit policies and procedures
- monitoring fraud, control and management procedures
- assessing operational activities to ensure necessary or mandated control structures are in place
- providing appropriate and timely compliance reports for senior management

ECM can be used to plan, develop and disseminate the guidelines, policies and procedures that define the provider's compliance and risk strategy as well as enable a provider to meet existing and evolving regulatory requirements. ECM's ability to effectively disseminate critical information about corporate policies and guidelines may also be used to verify that certain employee communications have been read or reviewed as required. Business process management capabilities can enable a provider to embed auditable controls in processes that may be subject to potential fraud or security breaches.

Managing Customer Services Scripts for Accuracy and Risk Mitigation

One North American provider manages the creation, review, approval and publishing (to their CRM system) of all scripts that are used by customer service representatives to discuss products, services, disputes, etc. when interacting with customers. As scripts are updated, previous versions of scripts are saved in the event they need to be accessed in response to customer disputes involving service or product recommendations provided to customers.

Records management, email management and electronic discovery capabilities can significantly reduce a provider's total cost of compliance through automatic capture, classification and retention of corporate records without the burden and overhead of end-user involvement. Once retained, records and the processes that created them are easily audited. In the event of litigation, electronic discovery can greatly reduce costs and improve the efficiency of the process.

Providers who adopt an enterprise content management strategy reduce the risk inherent in maintaining numerous, isolated content repositories whose software and administrative differences make it difficult to effect a viable business continuity plan. An ECM platform that has proven scalability, performance and disaster recovery capabilities plays a key role in business continuity by making corporate information available to a wide range of users and their business needs on a 24 x 7 basis.

ECM Platform Enables Business Continuity

A North American provider that has aggressively adopted an ECM strategy employs high-availability architecture throughout six data centers as a key part of its business continuity strategy. Theses data centers manage more than 35 terabytes of content that is accessed daily by thousands of corporate users.

Enterprise Management: Enterprise Effectiveness
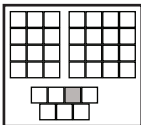
The category of Enterprise Effectiveness within the eTOM includes process management and support, quality management, program and project management, performance assessment, and facilities management and support. Potential applications of ECM include:

- defining the methodology for enterprise process design, process change management or process re-engineering activities
- creating an enterprise repository of program and project information
- providing documentation templates and project management tools
- documenting enterprise program and project methodologies
- defining enterprise quality management policies
- producing appropriate reports on performance at the enterprise and lower levels

ECM can be used to effectively manage the creation and secure dissemination of documents that define (and refine) the goals, processes, projects and metrics of the enterprise. The business process capabilities of an ECM platform can model (using Visio or other BPM modeling tools), simulate, execute and monitor the critical document-centric processes throughout the enterprise to

eliminate redundancies, improve operational efficiency and reduce costs. Once critical business processes have been identified, modeled and implemented using BPM, a provider can then obtain performance metrics – both historical and real time, using business activity monitoring – to assess efficiency and identify areas for continued process improvement.

Providing BPM to the Enterprise

A European provider adopted a shared services strategy in support of approximately 100 content-centric business processes in the areas of finance, accounting, resource management, asset management, logistics and human resources. Several of the business processes were integrated with the SAP system to create "best-of-breed" applications. The shared services strategy allows the provider to automatically record the sequence of events along with participants involved, as well as automatically capture and retain all documents created or used in these business processes. Capturing metrics allows the provider to continually assess the efficiency of the processes.

Enterprise Management: Knowledge and Research
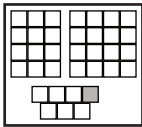
Within eTOM, the category of Knowledge and Research may be viewed as one with either a wide or a narrow focus depending upon the role of the knowledge creator or consumer. It may be viewed as wide because every employee "consumes" some subset of the corporate "knowledge" in order to effectively execute job responsibilities. On the other hand, it may be considered narrow because the critical task of research is the responsibility of a relative few who produce the intellectual property critical to development of new services and future business growth. Key applications of ECM include: establishing processes and capabilities to ensure that all staff have the necessary knowledge available to be effective in their work and ensuring that knowledge captured through work activities is retained and made available as required throughout the enterprise.

An ECM platform can enable the broad, yet secure, dissemination and consumption of unstructured corporate information regardless of source or format. An ECM platform can also enable providers contending with an aging workforce to capture the skills, knowledge and insight of their long-term employees. The ability to capture, manage and preserve "knowledge" in its many forms – written, technical manuals, video, photos, recorded voice, and electronic documents – throughout the enterprise allows a provider to maintain information in its most relevant format.

Relative to research, ECM can provide a collaborative environment to capture and secure the intellectual property associated with research projects that are critical to a provider's current and future viability. Secure management via an ECM repository gives a provider significantly more capability in controlling access to these vital corporate assets.

Corporate Content Library for the Enterprise

One European provider established a single enterprise library and developed a taxonomy, security, lifecycle and retention policy to manage both electronic and physical documents associated with corporate communications, corporate governance and strategy, facilities, finance, human resources, IT systems and services, legal, market intelligence, network infrastructure, product and services, purchasing supplies and expenses, regulatory affairs, safety, health and environment, sales and customer care, and security. The immediate benefit of establishing an enterprise library was a 60 percent reduction in physical document storage costs as well as significantly improved access to documents via a single point of secure access.

Enterprise Management: Financial and Asset
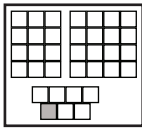
The Financial and Asset category of the eTOM includes financial, asset and procurement management. ECM can help improve efficiency and be particularly cost effective in two areas – accounts payable and asset management. Applying ECM capabilities to accounts payable enables a provider to process a greater number of invoices and payments with greater efficiency and accuracy at a lower cost. Research conducted by the Institute of Management and Administration, Inc. (IOMA)[6] documents the significant cost savings that can be achieved by automating the invoice process. Additional efficiencies can be achieved by integrating the accounts payable process with the ERP system.

ECM can complement asset management software by allowing a provider to manage all documentation – purchase orders, invoices, technical manuals, service bulletins, repair records, field service notes, technical drawings, environmental certifications, hazardous materials handling guidelines, emergency procedures, etc. – associated with assets such as network infrastructure, cell towers, maintenance equipment, vehicles, facilities, etc. Integration with asset management software can enable a provider to maximize asset availability and extend asset life through scheduled maintenance and repairs that are guided by current, accurate and complete asset documentation.

ECM for Asset Management

One North American provider, who had already made a significant investment in ECM, exploited their ECM platform to address fleet and real estate management. ECM manages the titles, licenses, payment records, warranties, emissions certifications and repair receipts associated with thousands of service vehicles. Because the provider out-sources all vehicle maintenance, repair invoices are also processed and paid using the accounts payable system built on the ECM platform and integrated with their ERP system. As a result of growth and acquisition, the provider now controls a significant number of real estate assets, each having a diverse set of documents that need to be maintained. All real estate documents – deeds, rights of way, rental agreements, taxes, environmental records, sales and acquisitions – are all managed more efficiently and securely using ECM.

Enterprise Management: Stakeholder and External Relations
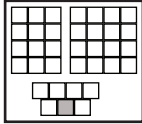
Stakeholder and External Relations within the eTOM include corporate communications and image, legal, community relations, shareholder relations, board and shares securities, and regulatory management. Applications of ECM include:

- compliance with legal requirements including due diligence
- managing internal legal requests
- providing legal advice related to business decisions
- addressing legal action taken on behalf of or against the enterprise
- managing continuous disclosure/announcements to the securities exchange or regulating entity

Responsibility for creating, approving and managing this information is shared among multiple departments – marketing communications, finance, legal, public relations, labor relations, and investor relations. The interdependencies of these departments combined with government regulations that dictate the content, usage and preservation of this information make it imperative that documents be created and managed in an environment that securely controls the lifecycle from creation through final disposition. An ECM platform can serve as the foundation for collaborative document creation as well as provide capabilities to address the equally important regulatory requirements for reporting and legal discovery.

ECM as a Foundation for Compliance

A provider who aggressively adopted an enterprise content management strategy – tens of thousands of employees utilize the enterprise content management platform and dozens of business process management applications supporting various areas identified by the eTOM – is now addressing compliance and regulatory requirements by implementing records management. This will enable the provider to automatically capture, categorize and retain documents that are deemed critical in meeting regulatory requirements. As many as 80,000 new documents are added to the ECM repository daily. Applying records management capabilities to this growing volume of documents will reduce both long-term storage costs and potential risk of retaining documents longer than legally required.

Enterprise Management: Human Resources
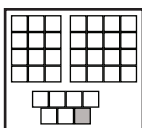
The category of Human Resources within the eTOM includes policies and practices, organizational development, workforce strategy, workforce development, and employee and labor relations. Applications of ECM include: performance appraisals, remuneration policies, allowances, benefits, occupational health and safety, equal employment opportunity, compensation guidelines, code of conduct, hiring and

termination guidelines, competency and skills definitions, skills assessment, succession planning, training development and delivery, career development, employee recruitment, terms of employment, labor contract development, union contract negotiations and arbitration management.

Human Resources has become one of the most document and process intensive areas of an organization. The volume of documents associated with the employee lifecycle continues to increase as a result of evolving industry and legal regulations. ECM capabilities can improve efficiency in all areas of human resources operations by providing centralized management for the creation, capture, processing and retention of human resource and employee documents.

There are many areas – hiring, orientation, reviews, and retirement – where business process management can provide additional efficiency and consistency in execution. Ideally, a combination of ECM and BPM integrated with HR systems or the HR modules of an ERP system can enable Human Resources to increase the amount of employee "self service" that it provides (perhaps through an employee portal), thereby improving efficiency and employee satisfaction.

In addition to managing all employee information, Human Resources is tasked with providing or publishing an increasing amount of corporate information (policies, procedure, business conduct guidelines, benefits information, links to external services or benefits providers, forms, career planning, financial planning, retirement planning) that must be accurate; in concert with industry, regulatory and governmental guidelines; and frequently tailored to regional/cultural/language differences. ECM can facilitate the creation, review, approval, publishing and retention of corporate information as well as retain key information as corporate records, in the event that such information is requested during future litigation.

### Single, Secure Point of Access for Employee Data

As part of its enterprise deployment a European provider has integrated ECM with SAP to manage employee information so that all relevant data is available via a single, secure point of access. Employee data managed in SAP is linked to relevant documents (résumés, performance reviews, promotions, status changes, benefits, etc.) maintained in the ECM repository creating a complete employee record. Human resource specialists work directly with SAP to manage employee information. Employees, managers and other authorized personnel who do not have SAP access may nevertheless access and manage employee documents via an ECM desktop interface.

eTOM: Strategy, Infrastructure and Product Benefit from ECM
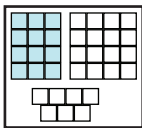
This area of the eTOM: Strategy, Infrastructure and Product includes processes to develop strategies; commit these strategies within the enterprise; plan, develop and manage the delivery and enhancement of infrastructures and products; and develop and manage the supply chain. Two specific areas within Strategy, Infrastructure and Product can significantly benefit from the application of ECM – Marketing and Offer Management, and Supply Chain Development and Management.

Strategy, Infrastructure and Product: Marketing and Offer Management
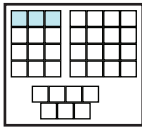
Marketing and Offer Management as defined by the eTOM includes market strategy and policy, product and offer portfolio planning, product and offer capability delivery, marketing capability and delivery, product and offer development and retirement, sales development, and product marketing and communications promotion. Applications of ECM include:

- gathering and analyzing market and product information, developing new product ideas
- developing product portfolio business plans
- defining product capability requirements; defining marketing capability requirements
- developing new product business proposals, detailed product specifications, sales and channel proposals, and promotional collateral

Critical to this activity is the development of ideas/concepts leading to new product and service offerings. This process requires a significant amount of information in multiple formats, from multiple sources, to be gathered, researched, refined, shared and preserved in order to transform the concept into a viable market offering. ECM capabilities can enable a disciplined approach to managing the capture and creation of concepts and ideas, provide an environment for the collaborative development and refinement of the initial ideas, secure any resulting intellectual property, and assure that the processes for developing a new market offering are consistent.

Effective marketing and offer management requires participation of multiple internal organizations – marketing, corporate communications, customer service, legal, IT and finance among others – and frequently requires participation of external organizations. ECM provides the flexibility to accommodate the collaborative needs of a small group or the complex requirements of a major project involving many geographically distributed individuals. Email is the most popular method of sharing documents within and outside the organization. An ECM platform that includes email management can significantly improve marketing productivity and enhance collaboration by capturing relevant email messages and automatically associating them with specific marketing projects. The ability to securely access all relevant information, regardless of its source or format, in order to enable well-reasoned, cost-effective decisions is vital to the effective operations of a marketing organization.
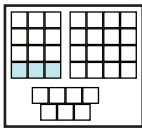
New Product Development

A southern European provider applied ECM to assist their wholesale national services division with the process of evaluating ideas and developing new products and services. The combination of content and business process management enabled more effective collaboration and sharing of information among the departments and offices. In contrast to the previous methods employed, ECM allowed this provider to track the development of new ideas more consistently, efficiently capture a wide range of supporting materials during the development process, and more thoroughly plan the delivery of new products and services.

Managing Market Research

One of several ECM applications at a northern European provider is the management of market research. Documents and data from a wide variety of information sources – both internal and external – are categorized and managed in the ECM repository. Employees involved in all areas of product development and marketing utilize these resources in order to assess market dynamics as well as plan product enhancements, new products and marketing programs. Key benefits provided by the ECM environment are the ease of sharing ideas and data, the efficiency and insight gained by "re-purposing" information that has already been created or added to the repository and the ability for new team members to quickly learn about projects or initiatives already in process.

Strategy, Infrastructure and Product: Supply Chain Development and Management

The eTOM's Strategy, Infrastructure and Product category of Supply Chain Development and Management includes supply chain strategy and planning, supply chain capability delivery, and supply chain development and change management. Applications of ECM include:

- gathering and analyzing supply chain information
- developing supply chain strategy, goals and business plans
- managing the tender process
- negotiating commercial arrangements
- managing supplier engagements, contracts, variations and terminations

Providers who have numerous suppliers, complex contract agreements or lengthy contract negotiation cycles can employ ECM to provide a consistent process for managing the contract lifecycle – from initial development, through negotiation, review, execution, renewal, termination and final disposition. An ECM platform enables appropriate parties – such as purchasing, legal, sales, finance, suppliers, etc. – to quickly and securely access contracts and any associated supporting documentation. An added advantage of applying ECM to the supply chain process is the ability to retain contracts (and any other supporting documents) using the records management capabilities of the ECM platform.

Efficient Contract Management

An Eastern European provider adopted an ECM to manage the customer and supplier contract process. An inefficient, error-prone, paper-based contract system was replaced with an ECM business process to assure that all phases of the contract lifecycle are executed properly. The provider can now determine the current status of a contract; gain immediate access to contracts, versions and relevant supporting documents from a single, secure access point; and determine the throughput and efficiency of the contract process via system reports.

eTOM: Operations and the Impact of ECM
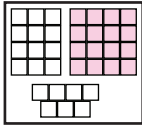
The area of Operations within the eTOM includes all processes that support network operations and management as well as those that enable direct interaction with the customer. Two specific areas within Operations can benefit from the application of ECM – Customer Relationship Management and Supplier/Partner Relationship Management.

Operations: Customer Relationship Management
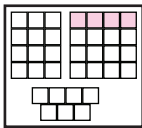
The eTOM Operations category of Customer Relationship Management includes customer relationship management support and readiness, customer interface management, marketing fulfillment response, selling, order handling, problem handling, quality of service and service level agreements, billing and collections management, retention and loyalty.

Potential applications of ECM include: issuing and distributing marketing collateral, managing requests and inquiries (including self service), handling problems, billing, collections, acquiring customer data, analyzing and reporting on customer activity, building customer insight, analyzing and managing customer risk, and personalizing customer communication for improved retention and loyalty. The eTOM defines customer relationship management comprehensively by including a wide range of customer lifecycle activities and processes. There are several key benefits to be achieved through the integration of ECM with customer relationship management applications and customer data/profiles.

First, ECM can enable a complete view of customers by complementing customer data retained in databases with a wealth of "unstructured" customer information such as email or written correspondence, customer service representatives' notes, billing statements and voicemail to create a "single view of the customer." The "single view" can provide customer service representatives with a more detailed customer context to more efficiently resolve customer inquiries, cross-sell services and improve the overall customer experience.

Single View of Customer

A European provider employs ECM to capture and aggregate disparate customer records such as faxes, letters or email. The system then combines these data with customer data in the Siebel CRM system, giving the provider a centrally managed and singular view of individual customers and a more efficient system for tracking and managing customer records. This "single view of customer" enables customer service representatives to resolve inquiries more efficiently leading to improved customer satisfaction.

Second, these unstructured data offer an additional source of customer information that can be analyzed (using text analytics) to obtain insight relative to customers and identify trends that can influence development or refinement of new products and services, improve existing services and products, and potentially result in increased customer retention.

Customer Retention

An Asian provider collects information from customer service representatives, customers' interactions via the provider's web sites, and email received from the customer. This information is then analyzed (using sophisticated content analytics) to identify customers that are likely to discontinue service because of problems or dissatisfaction with service. Based upon the results of this analysis, the provider then proactively addresses these concerns with the goal of retaining valued customers.

Third, customer service costs can be reduced and customer self-service can be significantly enhanced using a well designed customer portal. An ECM platform can coordinate the creation, review, approval and publishing process of customer support, product and service information (typically obtained from multiple sources throughout the organization) made available through a customer portal, assuring it reflects current and accurate information. In conjunction with a sophisticated web application environment and features such as electronic forms and e-mail, ECM can be utilized to capture customer data and manage self-service processes initiated through the customer portal.

Efficient Provisioning Process

Using business process management, a provider coordinates provisioning of web hosting services worldwide. Upon completion of the hosting contract, a sales representative sends an email containing the customer's information and service request details. Automatically, the BPM application uses information contained in the email to populate electronic forms and then launches a workflow to manage the overall provisioning process. BPM coordinates the entire process, giving provisioning coordinators and project implementation managers the ability to work a task, create a new task, review contract information, and forward tasks as required to the groups responsible for billing and engineering services. A similar process is used to decommission hosting services.

Finally, ECM can transform the billing process by reducing the cost of printing and distributing bills while treating the billing process as a marketing opportunity by including promotions and offers – profiled specifically for the individual customer – in the billing statement which can be delivered via post, email, fax or web. As providers increase the number of services offered, the ability to promote these new services to likely subscribers becomes critical. Using customer profile data, ECM can enable a provider to dynamically generate and automatically include promotions tailored to individual customer needs. Furthermore, individual billing statements can be captured and stored electronically for easy reference by customer service agents in the event of a billing inquiry or for secure customer access via a customer self service portal.

Simultaneously Improve Customer Service and Reduce Billing Costs

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A North American provider employs ECM to improve the customer billing process allowing more than 29 million customers to access electronic copies of their bills via a secure web portal and pay online. Wide customer adoption of electronic bill presentment and payment has the potential to save the provider $25 million annually in printing and distribution costs. Within the first 6 months of implementation more than 5,000 customers were able to resolve billing disputes via the web portal (in comparison to resolving the dispute via a customer service agent) thereby reducing customer support costs as well.

Operations: Supplier/Partner Relationship Management
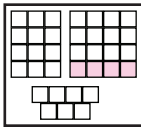
The category of Supplier/Partner Relationship Management in the eTOM includes support and readiness, requisition management, reporting and problems management, performance management, settlements and payment management and interface management. Applications of ECM include:

- evaluate and select supplier/partner
- initiate, track, manage, receive, accept, close and report supplier/partner requisition order; receive, process, approve and pay invoices
- manage supplier/partner requests (including self service)
- analyze and report supplier/partner interactions

ECM can be applied to manage the entire requisition-payment process, from initiation of requisitions (which can be optimized using electronic forms), through invoice processing and payment. Integration with an existing ERP system can also enhance overall process productivity. Further efficiencies may be achieved by granting suppliers secure access to the requisition system. Should any of the transactions be disputed or problematic, an ECM application can manage the resolution process and report exceptions as required. For providers dealing with thousands of requisitions and hundreds of suppliers, annual cost savings and efficiency gains can be significant.

Supplier Invoice Processing

A North American telecommunications provider employs its ECM platform to reduce costs of managing their accounts payable processes. Invoices from suppliers are automatically captured, reviewed, approved and paid. Invoices are automatically retained electronically as corporate records in the event of disputes or audits. Timely automatic payments allow the provider to take advantage of discount incentives, further contributing to their return on investment.

Summary
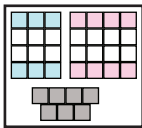
Communications providers face an ever-increasing volume of corporate content/documents critical to efficient operations. Many of these documents are created as the result of a process, or are a part of a business process. From an IT perspective, the importance of this content along with the need to manage it consistently and cost-effectively drives the need to assess content uses throughout the organization and develop an enterprise content management strategy. From a line-of-business perspective, key processes involving the creation, dissemination, integration and retention of content – especially content associated with enterprise management activities – need to be evaluated to assure they are being executed in the most efficient and effective manner, particularly in light of an increasing number of government and industry regulations.

This paper proposes that a provider adopt an enterprise content management strategy utilizing the TeleManagement Forum's eTOM as a guide in assessing the content and process requirements of the enterprise. TeleManagement Forum provides detailed definitions of the eTOM business processes (refer to the document entitled Enhanced Telecom Operations Map (eTOM) The Business Process Framework for the Information and Communications Services Industry) that can assist a provider in identifying areas where ECM can be effectively applied to reduce costs, increase efficiencies and improve the overall customer experience.
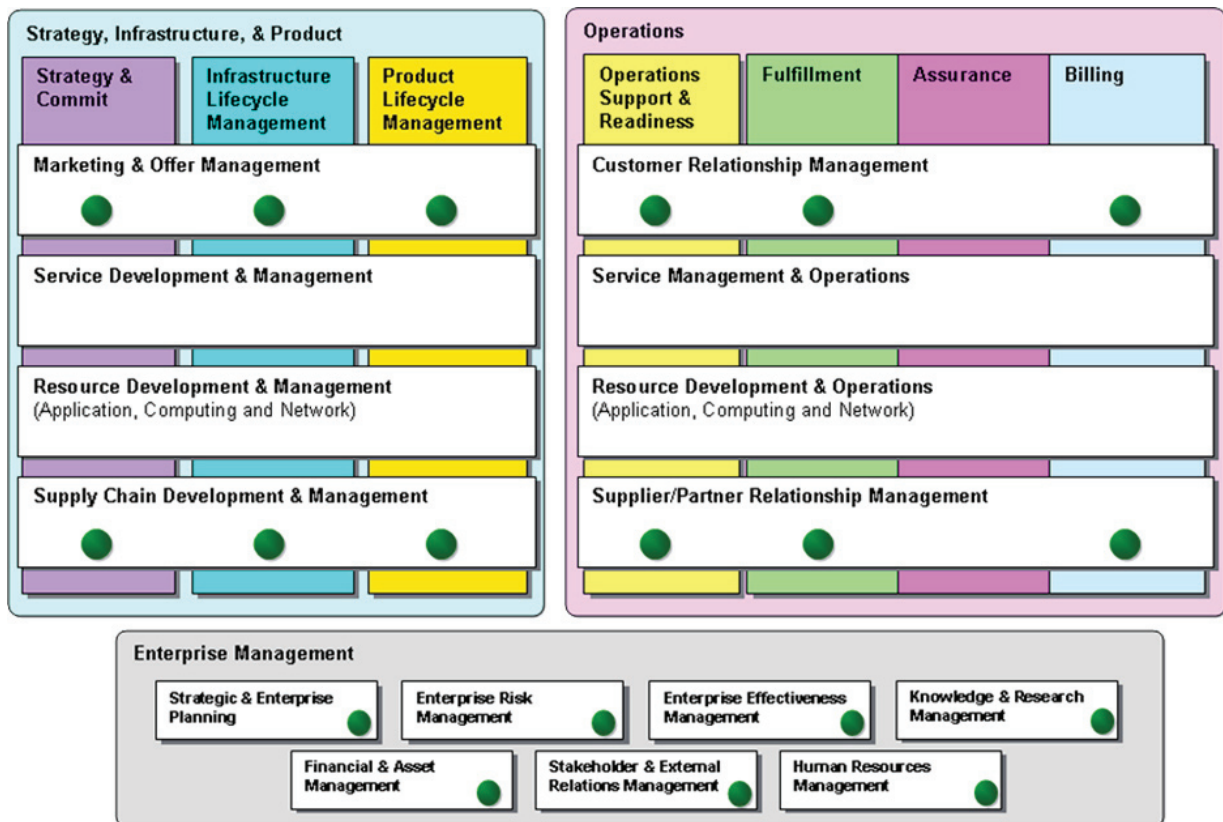

Figure 2 eTOM areas that can benefit from application of ECM

A thorough assessment of a provider's content-centric business processes will reveal the number of content processes and lifecycles common to multiple departments. The assessment will also reveal the degree to which content created in one department is shared with other departments, internal and external to the organization. Lastly, the assessment will also indicate the breadth of content types that circulate throughout the enterprise – office documents, scanned images, email, forms, print output, fax, web content, video, voice and technical documentation – and identify the software applications that create and consume these. The commonality of needs, widespread content sharing and breadth of content types, reinforce the importance of addressing these needs with an enterprise platform strategy.

ECM is a critical element of a provider's overall enterprise information architecture. A well developed ECM strategy can positively impact a broad range of a provider's operations and services. When evaluating an ECM vendor, the provider should consider not only the breadth and depth of the vendor's ECM offering, but also the vendor's overall breadth and depth of software, hardware and services specifically tailored to the communications industry. Here too, the eTOM can serve as means to evaluate the vendor's capabilities in the areas of service development and management, resource development and management, and resource development and operations. Ideally, the vendor should be able to address the majority of areas outlined by the eTOM as well as demonstrate a well-established global presence and competency in the communications industry.

About IBM ECM

IBM's Enterprise Content Management software enables the world's top companies to make better decisions, faster. As the market leader in content, process and compliance software, IBM ECM delivers a broad set of mission-critical solutions that help solve today's most difficult business challenges: managing unstructured content, optimizing business processes and helping satisfy complex compliance requirements through an integrated information infrastructure. More than 13,000 global companies, organizations and governments rely on IBM ECM to improve performance and remain competitive through innovation.

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