

Content Management Interoperability Services, A Social and Content-Centric Wave

by Cengiz Satir



AIIM Introduction to Content Management Interoperability Services (CMIS)

by John Mancini, President of AIIM

AIIM believes that CMIS is critical to the adoption and dissemination of content management technologies. Here are four key reasons.

1 -- CMIS provides a framework to deal with the explosion of unstructured social content.

At one level, we understand that the volume of content that must be governed is growing. However, I fear that we really only understand this at a surface level. Social content, is, well, social. The real explosion that is coming will be driven by the power of compounding – an exponential increase in the volume of content that must be managed, driven by the unprecedented scale of massively networked individuals serially commenting on, adding to, and recommending content assets.

2 -- CMIS is to the ECM repository what SQL is to RDBMS.

We have all seen what standardization based on SQL meant to the database space and the applications that could be created once some degree of standardization occurred. That is what is coming to the ECM space. CMIS will shift the focus around building applications.

3 -- CMIS has momentum.

The ECM industry has long struggled with the challenge of building critical mass around the interoperability challenge such that it actually changes the behavior of the leading vendors. Think of the challenges we had building scale around DMA and ODMA. However, we have passed the tipping point with CMIS. It has been embraced by a number of leading vendors, including IBM, Microsoft, Open Text and Alfresco. There is no turning back.

4 -- CMIS is both forward and backward looking.

CMIS provides a way for applications to tap into existing repositories – thus opening the door for new ways to leverage the value of existing content without ripping out existing infrastructure. All of the survey work we have done at AIIM indicates that it will be a federated world long into the future. Certainly users are trying to reduce the number of platforms they support. But there is little likelihood that organizations will rip out existing mission critical applications simply because they run on different repository infrastructures. CMIS recognizes the reality of content federation by insuring interoperability while protecting existing infrastructure investments.

CMIS is a standard whose time has come.

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Executive Summary

Historically, organizations have struggled to find a common way in which they can effectively manage, access, and govern content applications across multiple systems. Today, it is still a challenge to make content application functionality portable across repositories. However, now more than ever, businesses are facing the overwhelming requirement to also manage the explosion of unstructured content. Unlike previous open-standards-based approaches, the Content Management Interoperability Standard (CMIS) has not only confronted this challenge, but also provides businesses with improved operational efficiencies.

Social, mobile, and media applications fuel the unstructured content phenomenon

Social, mobile, and content-centric applications are becoming an integral part of daily operations for information workers. So it should be no surprise that today more than 80 percent of data created is unstructured content and it is predicted to grow by more than 800 percent over the next five years, according to Forrester Research. Applications like Facebook, Twitter, and YouTube and others have introduced social content tools (for example, wikis, blogs, profiles, and tagging) to information workers (iWorkers). These social tools have led to the corporate equivalents, such as Microsoft SharePoint and IBM Connections, which are rapidly becoming mainstream enterprise content applications.

Line-of-business and IT leaders now insist that these tools be directly linked to traditional enterprise content management (ECM) systems to ensure proper governance and discoverability,

as well as productivity value (for example, 45% of the US workforce spends three or more hours a week just searching for information in the workplace). These leaders are cautiously promoting use of these applications, provided that they are intelligently integrated to ECM.

Content management standards: How did we get here

In the past, intelligent ECM integration meant using proprietary APIs and query interfaces, and had limited success with the use of interoperability standards like JSR 170: Content Repository for Java™ technology API. Proprietary APIs, however, have associated long-term maintenance costs, although they do provide robust capabilities, for example, content federation. These same APIs have the tendency to lock information assets into vendor-specific formats, limiting content access points and the use of third-party tools. Previous protocol-based standards such as WebDAV did not address important content-centric requirements, such as query, whereas CMIS has provided a feature rich completed specification that is available from all of the providers.

JSR 283, the successor of JSR 170, addressed federation (a JSR 170 shortcoming), as well as improvements in access control management. Both JSR standards, however, leveraged Java as the primary interface to ECM systems. Certainly, the content management community has made several solid attempts at implementing a truly interoperable standard. So, you might be wondering, what makes CMIS different?

The fact that JSR 170 and JSR 283 work with Java was only part of the problem. The other barriers with these standards were that they dictated how ECM repositories should behave. CMIS, on the other hand works with all designs rather than imposing one.

The ECM Suite – Fact or Fiction?

Although ECM platform standardization can be, and at times has been, a key strategy for businesses, the fact is that most organizations have numerous content repositories servicing different use cases. Regardless of the use case, whether transactional, business, or persuasive, the reality of what businesses face today is a heterogeneous content management infrastructure. Case in point: more than 50% of companies surveyed have three or more ECM systems in place (see Figure 1).

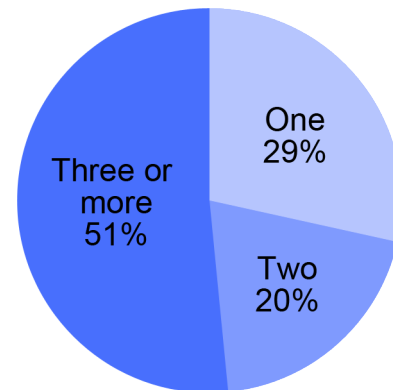
Content Usage – The Social Transformation

Persuasive content has created a sense of urgency for businesses to more effectively manage unstructured content created in social and collaborative application environments. The fact that Web 2.0 technologies and Wi-Fi are everywhere has placed an emphasis on productivity—better results in less time through intuitive real-time access to corporate content. Although social and mobile computing has connected iWorkers and provides access to content anywhere at anytime, it has not solved the problem of managing unstructured content in a secure and compliant manner. A widely adopted content interoperability standard will give iWorkers the ability to quickly locate the right document across multiple repositories and then appropriately manage it as part of their ECM system.

Open Standards – What have we learned?

Like CMIS, JSR 170 and 283 were pursued and ratified by standards bodies with the intent to provide a common API for accessing numerous repositories. Certainly there is no lack

“How many enterprise content management solutions are currently utilized by your firm?”



Base: 170 global ECM decision-makers

Figure 1: The ECM Suite Remains More an Ideal Than a Reality²

of available standards for businesses to use. However, the JSR initiatives fell short in their approach primarily because the standard mandated Java as the primary language that can interact with content repositories and this often translated to heavy lifting by highly skilled programmers. Java itself epitomizes open standards. However, the reality is that content system usability drives adoption. And a highly usable content system is frequently not limited to using one language or one set of APIs for enabling content access in a truly interoperable manner, for example, Microsoft SharePoint.

CMIS Will Change the Game with Rapid Application Development and Adoption

CMIS extends beyond the obvious benefits of having ubiquitous content access. It provides a standardized query language with a set of standard services for executing core content and document management functions. In many ways, SQL is to RDBMS what CMIS is to the ECM repository. The intensified application development atmosphere of the 1990s was done in large part to SQL facilitating the proliferation of client-server-based CRM (customer relationship management), HR (human resources), help desk, and medical system applications, to name a few. Not unlike SQL, CMIS is also promoting an explosive application development environment. In fact, this is already happening today. And, as a result of the promotion of “[Chemistry](#)” as a top level Apache project, there are already four Apache open source language bindings available for CMIS (Java, DotNet, Python and Php). In addition, [OASIS](#), the open standards based committee which has provided the structure and forum for the development and ratification of CMIS, recently approved a proposal for a new binding based on JSON and Javascript. So as a result these efforts, today companies can build CMIS applications with off the shelf open source APIs that will work with almost any ECM vendor, such as IBM FileNet P8 and Microsoft SharePoint 2010.

Another important point to emphasize here is that the success of CMIS stems from the ability to leverage a common data model and a platform-independent set of protocols and APIs, thus enabling a much larger community that extends beyond traditional content man-

agement vendors. The CMIS methodology encourages a true rapid application development (RAD) community, enabling businesses to seamlessly access corporate content across multiple channels: social content, mobile content, and content-centric applications. In fact, CMIS is already being used to meet general-purpose document management and digital media use cases as described below. CMIS can contribute to the healthcare industry, as highlighted in a Patient Management System application demonstrated at [AIIM](#). The following factors highlight the major difference between CMIS and previous content centric standards, such as JSR 170 and 283 which were not widely adopted.

CMIS Promotes Rapid Community Adoption

During the first year CMIS was ratified, many ECM vendors quickly introduced support in released products, for example, [IBM FileNet Content Manager 5.0](#), [IBM Content Manager 8.4.3](#), [IBM Connections 3](#), [Microsoft SharePoint 2010](#), and [Alfresco Enterprise Edition](#). CMIS also has energetic involvement from more than just the core ECM standards body of IBM, EMC, Microsoft, Open Text, Oracle, and Alfresco, for example, Adobe, SAP, FatWire, and host of other ISVs have also become involved. This [link](#) highlights implementations of CMIS we are seeing across multiple vendors, partners and ISVs.

CMIS Enables Rapid Application Development

ISVs like [Zia Consulting](#) already have a general-purpose mobile document management application for the iPhone and Android. It is also easy to visualize a CMIS-based case management application for the iPad that services the insurance industry in order to meet claims processing requirements. The [Genus Media Upshot](#) application from Genus Technologies fulfills yet another use case for managing corporate digital media assets using the social interface of IBM Connections.

CMIS: The Business Outcome

These real-world examples make intelligent use of both the CMIS common data model and the SQL-inspired query language, which helps businesses unlock the full value of their corporate content through new social and content-centric applications. As businesses implement CMIS, content will be easier to find and access across numerous ECM systems. The foundation of CMIS (SOAP and REST and Atom Publishing – Web 2.0) will dramatically reduce time to develop applications, resulting in an unprecedented developer community growth rate.

In summary, CMIS will give businesses the ability to improve their internal productivity and their external competitiveness through:

Cost-Effective and Compliant Content Storage and Access

Today, content generated outside the content management system (for example, documents in social applications) use proprietary APIs and content collection methodologies to find their way into the enterprise content repository. CMIS-enabled systems will minimize or eliminate the need for additional storage by saving content directly into single or multiple ECM systems and repositories. Businesses will be able to systematically reduce their dependency on shared drives and at the same time protect corporate assets. Essentially, iWorkers will be able to check in and version a document, as well as apply ECM-defined metadata, which can trigger business processes and analytics, as well as add retention rules for archival and records management purposes.

The Next Generation Content Ecosystem

The CMIS standard from the beginning was designed not only to provide true interoperability, but

also to provide the scope necessary to protect existing content infrastructure investments. Decoupling the web services and content from the repository reduces application development time and enables content to be managed in a platform-independent manner. This independence also allows the defined CMIS protocols to seamlessly interact with existing ECM programming interfaces. As a result, this interoperability tactic will cultivate a rich developer ecosystem that spans ECM vendors, customers, and ISVs alike. The end result is the generation of a multichannel wave of business and persuasive content-centric-based applications for the iWorker.

CMIS: What it Means to the Information Worker

Adoption of CMIS by ECM vendors and ISVs will forge a new multichannel, content-centric application community. Businesses will improve customer satisfaction by accessing high-value business and persuasive content anywhere at anytime. CMIS is triggering rapid application development, which will help improve efficiencies and competitiveness. However, the enterprise must plan accordingly.

Determine Application Use Cases

CMIS promotes a rapid application development (RAD) environment for much of the content spectrum. This new Web 2.0 RAD environment can help organizations meet a variety of requirements, which in turn will improve productivity and bolster innovation. Business need to identify use cases that can provide an immediate ROI, as well as help advance their competitive position.

Identify cost savings enabled by CMIS

Versioning documents and applying corporate defined metadata directly from social, mobile, and content-centric applications not only improve productivity, but also reduce the expense required to maintain custom APIs used to store and access content. CMIS makes good business sense. However, enterprises must validate where they will get the most return for their money.

Take notice of trends

What is now CMIS 1.0 was developed in approximately 18 months and was ratified on May 4, 2010. Today the standard immediately bridges disparate content silos, helping businesses access documents across multiple ECM systems. One thing to keep in mind, however, is that not all content types (for example, blogs) are destined for the enterprise vault, at least not using open-standards APIs. Keep a watchful eye on how CMIS evolves to potentially include task and workflow support going forward.

Endnotes

1 This is a graphical analysis of Forrester's Workforce Technographics® US Benchmark Survey, Q2 2009. This analysis is based on an online survey of 2,001 US information workers (iWorkers) at organizations with 100 or more employees. It is Forrester's first benchmark analysis of the technology that US information workers use in their jobs. Our benchmark covers devices, productivity, mobility, collaboration, intranet portals, and Web 2.0. See the November 11, 2009, "[The State of Workforce Technology Adoption: US Benchmark 2009](#)" report.

2 See the July 16, 2010, "[Overview: Enterprise Content Management](#)" report.

About the Author

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