CMIS
An Industry Effort to Define a Service-Based Interoperability Standard for Content Management

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Agenda

SOA drives new trends for information access

New businesses challenges

The interoperability solution

The benefits

The standard proposed

The vendors involved

How it works

What it includes, What it does not

The technology

The testing

The response

Q&A

EMC

In an SOA world:

The Trend is:

Most SOA applications involve accessing some content

Cloud Computing, Virtualization, Web 2.0

Mashups

Wouldn't it be nice if:

There is a WS-based standard for querying, accessing, and manipulating content?

An application developer did not have to write repository-specific code?

There was a REST interface for managing content?

...tadata schema ...t knowing

...d access ...y, without pre- ...ory-specific logic?

**Help
is on the Way**

Business challenges

Enterprises needed to aggregate/reuse business content trapped in disparate repositories

– Different systems deployed in different departments

– Systems inherited through business acquisition and merger

Companies needed to get up-to-date information from business partner's repository

– E.g. Aircraft maintenance crew needed to access manufacturers' vast manual repository to get the latest spec and procedure to comply with FAA regulation

ISVs wanted a single application code-base that can be deployed in different repository environments
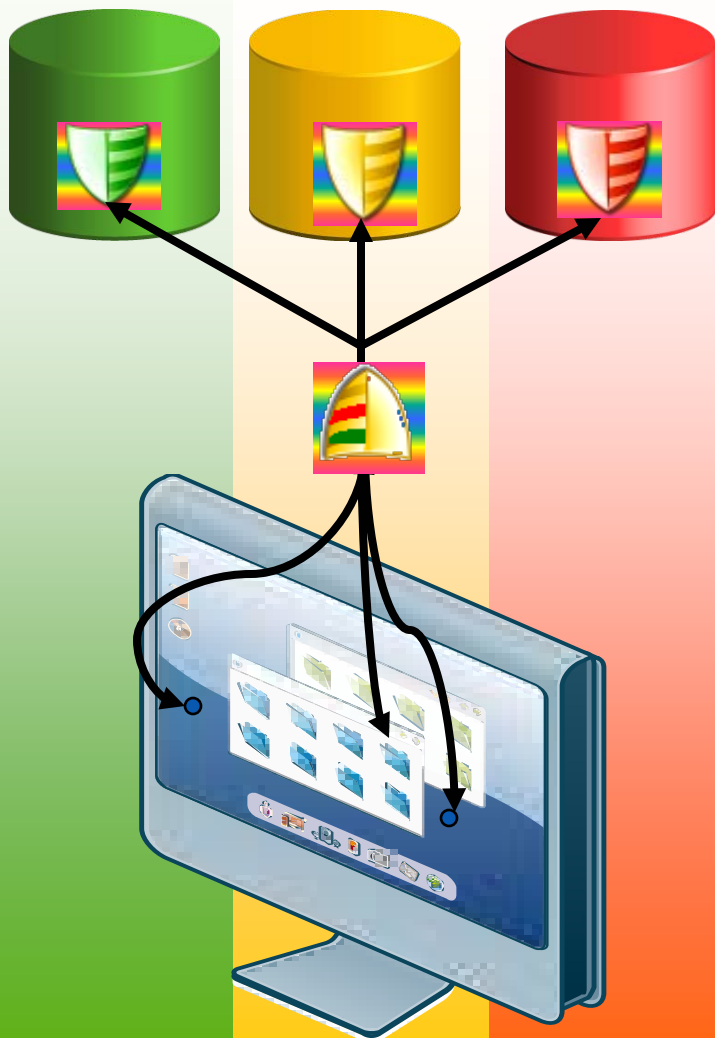
– Lower development & maintenance cost

– Bigger addressable market

Benefits of interoperability

Tech Pubs	Engineering	Sales

Benefits

Improved user access to content Increases enterprise effectiveness

‣ Easier for users to get access to the right information at the right time from their application

Reduces application development costs and grows ISV's addressable market

‣ Develop application once to access compliant repositories

**Protects customer's investment in applications and repositories**

‣ Developed applications can run against multiple repositories
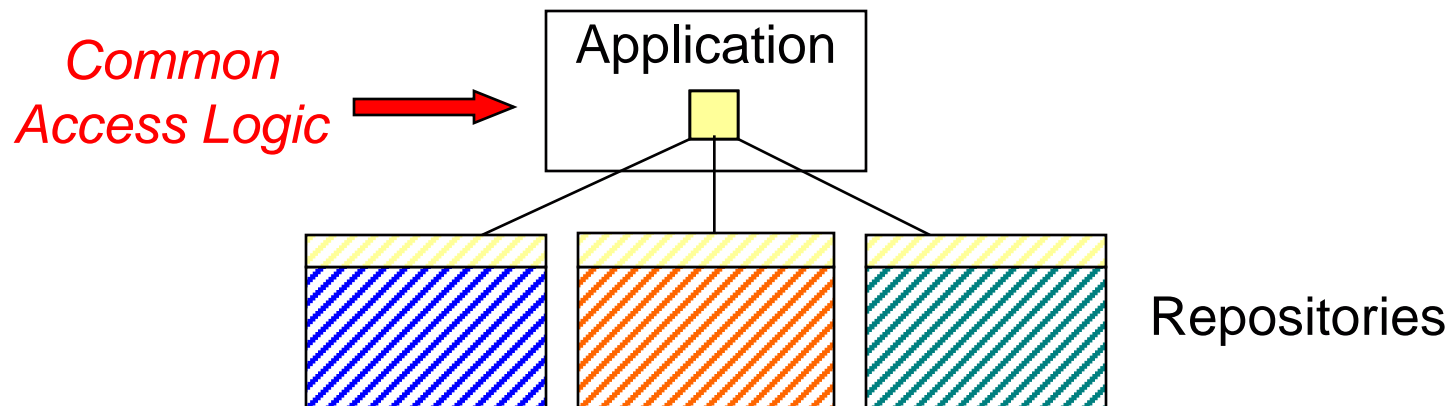
Propels ECM industry to the next level of growth

‣ Defines a set of standards, technology and interface, that works across multiple vendor and technology providers.

Solution: Design for interoperability

Conventional:

Repository-Specific Logic →

Application

Repositories
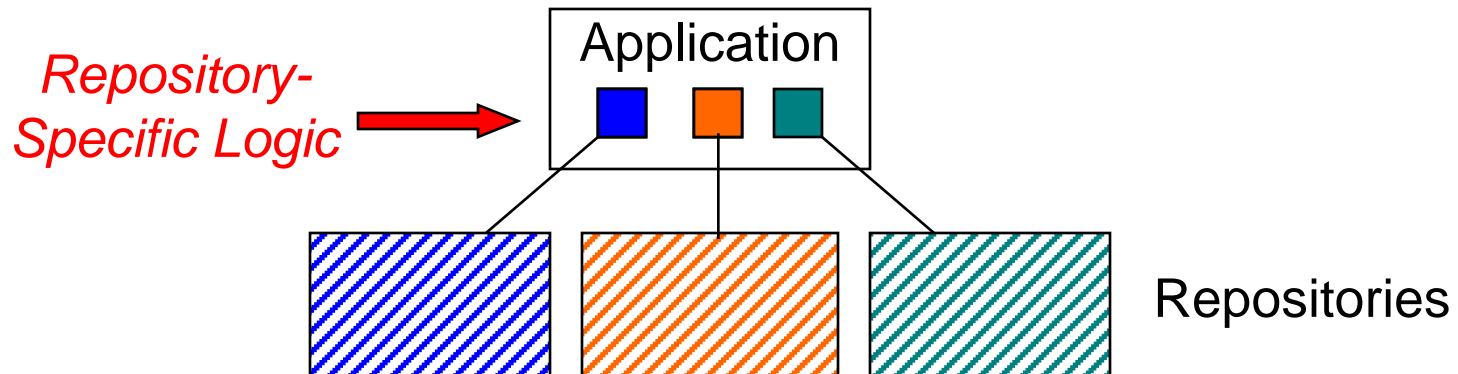
With an interoperability standard:

Common Access Logic →

Application

Repositories

Content Management Interoperability Services

A Web-based, protocol-layer interface to enable application to interoperate with disparate content management systems

- Platform- and language-agnostic, message-based, loose coupling
- Design goal: ability to support more than one protocol

Aim to unlock and reuse content trapped in different vendor repositories

- Design goal: easy to layer on top of most repositories
  (Lower threshold for adoption; protect customer investment)

Who are the committed vendors?

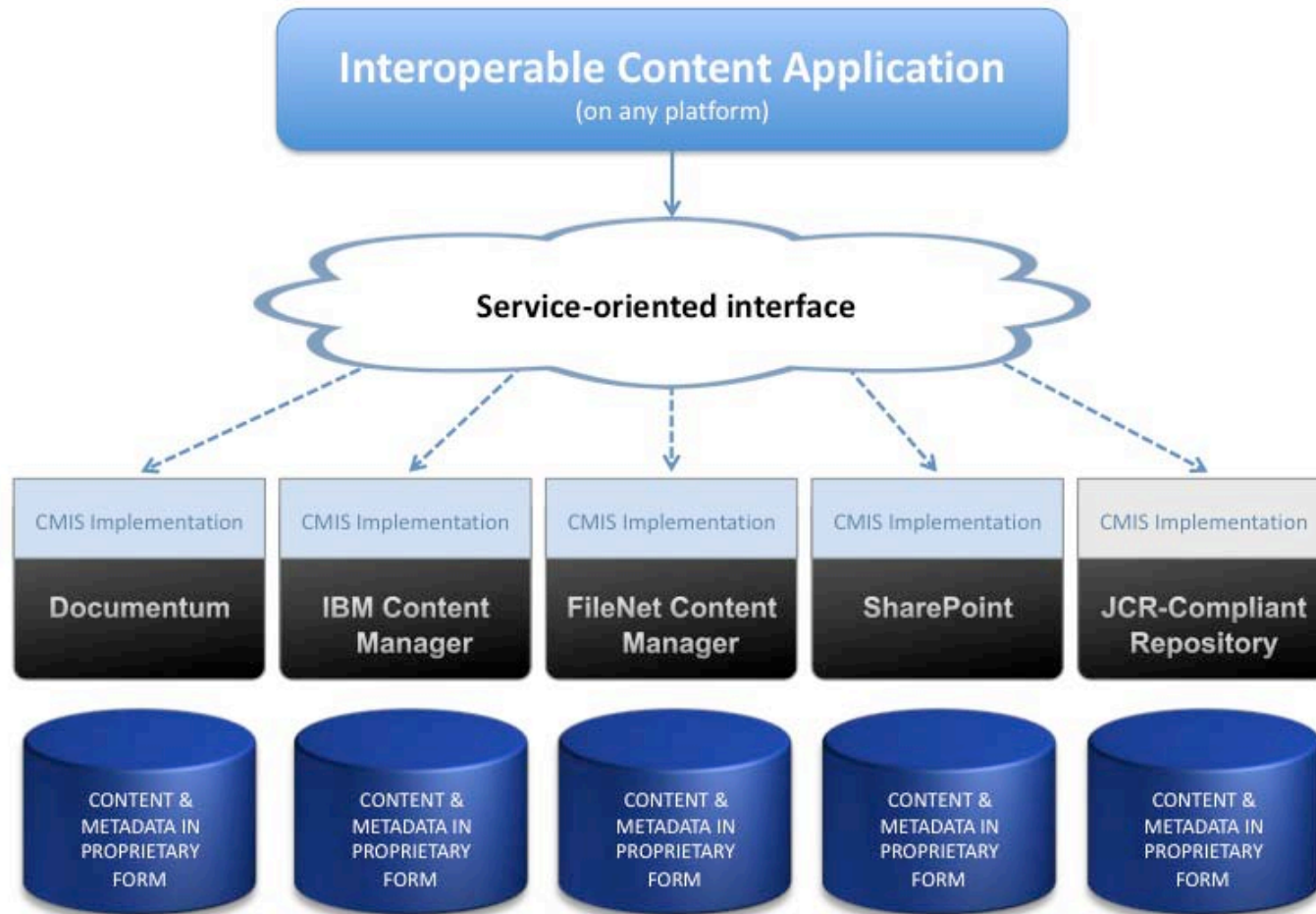The spec was drafted by EMC, IBM, and Microsoft
- – Project started in Oct 2006
- – Additional collaborators:
  Alfresco, Open Text, Oracle, and SAP

Interoperability was validated by all 7 vendors

Submitted to OASIS for standardization, Sept 2008
- – A CMIS Technical Committee is formed
- – 33 members (16 companies) at the start
  More are joining

Disclaimer: Product plans by individual companies TBD

What does it include?

A content management domain model

- Date Model: typed object, metadata property, content stream, versioning, folder hierarchy, peer-to-peer relationship, …
- Core Services: CRUD, query, navigation, …

Two protocol bindings

- SOAP / WSDL
- REST / Atom

Current prototypes available (Version 0.5)

What CMIS is not

Not included with CMIS

Designer/administrative operations

– Define object type, …

Advanced ECM functions

– Virtual document, BPM, …

CMIS Non-Goals

To expose all capabilities of an ECM repository

To prescribe what a repository "should be"

CMIS object description

Objects are typed

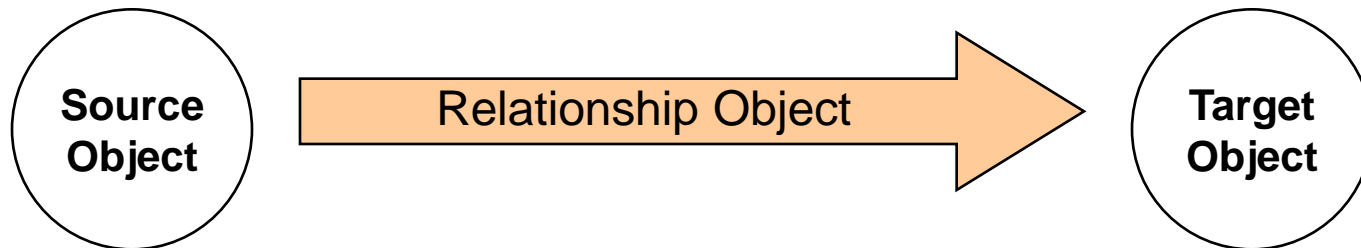Each object has a number of (metadata) Properties
– Defined by object type
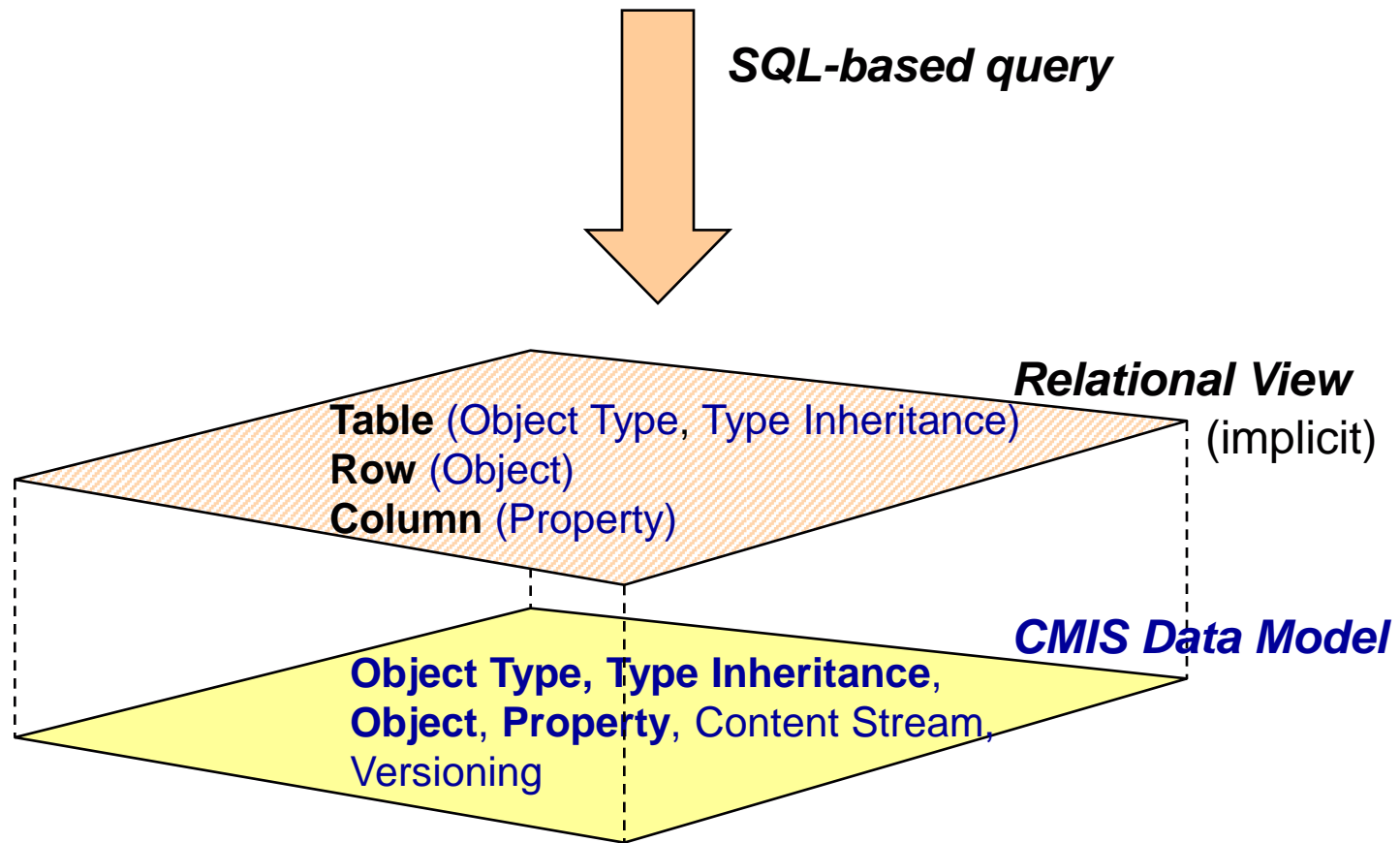
There are four kinds of objects
– Document   An asset; Can have a Content Stream; Can be versioned
– Folder   A container for objects
– Relationship   A binary relationship between two objects
– Policy   An administrative policy; Can be "applied" to objects

A folder object

A document object

→ Folder containment relationship

Relationship Object

Source
Object → Relationship Object → Target
Object

Query model

SQL-based query

Table (Object Type, Type Inheritance)
Row (Object)
Column (Property)

Relational View
(implicit)

CMIS Data Model

Object Type, Type Inheritance,
Object, **Property**, Content Stream,
Versioning

Run-time security

User authentication is handled by each protocol

Authorization context is exposed through an "AllowableActions" collection on each object

Security administration is currently not included

Protocol bindings

SOAP / WSDL:

- Service-oriented binding
- Uses CMIS-specific schema
- Capable for system-to-system access
- Use MTOM to transfer content-stream
- WS-Security 1.1, Username Token Profile 1.1

REST / Atom:

- Resource-based binding
- Leverages Atom formats with CMIS-specific extensions
- Browse-able by standard Atom feed readers
- Suitable for application-to-system access
- HTTP authentication

Validation of draft

Before submission to OASIS

All seven vendors have built prototypes to validate CMIS functionality and implement-ability for their products.

- Existing repository to provide CMIS services
- Existing application to consume CMIS services

Then, all sever participated in a workshop to test interoperability between their prototypes.

- Both SOAP and REST bindings were tested.

It worked just like it was intended!

What the analyst are saying

Sample Quotes:

IDC -- Melissa Webster

– "We believe CMIS will have a significant, positive impact on the content management market going forward."

Gartner -- Mark Gilbert, Karin Shegda

– "This is one of the most interesting things I've seen in my 15 years as an analyst." – Mark Gilbert

Forrester -- Kyle McNabb, Stephen Powers, Craig LeClair

– "Innovation will explode in this market once this standard is in place…" – Kyle from podcast

Sample Quotes:

"Net win for everybody." (CMS Watch);

"The potential is huge…could play a role in facilitating true Enterprise 2.0/Web 2.0." (Fierce Content Management);

"All of the above" ECM strategy … gives a nod to cloud computing and web 2.0." (The Register);

"I am excited that the ECM market has decided to start supporting a protocol specification." (Content Management Connection); "encouraging that so many of the leading players are on board." (IT Analysis)

A Peek into the future

Once CMIS is ratified,

it can accelerate the growth of entire ECM industry

Enterprise: Unlock content without sacrificing existing ECM investment; Gain business flexibility & insight

Developer: Lower application development & maintenance cost; Increase addressable market

User: Cheaper and more abundant off-the-shelf applications and tools

Repository Vendor: Bigger demand for repository

A win for everyone!

(Sound familiar? Just roll back the clock 20 years and change "CMIS" to "SQL".)

A Taste of the Future

EMC has made available its prototype CMIS implementation for Documentum as free download

- If you have a Documentum license, play with the prototype and see what you think.
- The download will be upgraded periodically.

For more information on CMIS, visit

- https://community.emc.com/community/labs/cmis
  - Spec, whitepaper, webinars, blogs, …

Or, visit http://www.oasis-open.org/

- Navigate to CMIS Technical Committee