# Portal Progress and Enterprise Content Management for National Capitol AIIM Chapter January 9, 2003

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# Portal Progress

# Merrill Lynch on EIPs

"Enterprise Information Portals are applications that enable companies to unlock internally and externally stored information, and **provide users a single gateway to personalized information** needed to make informed business decisions."

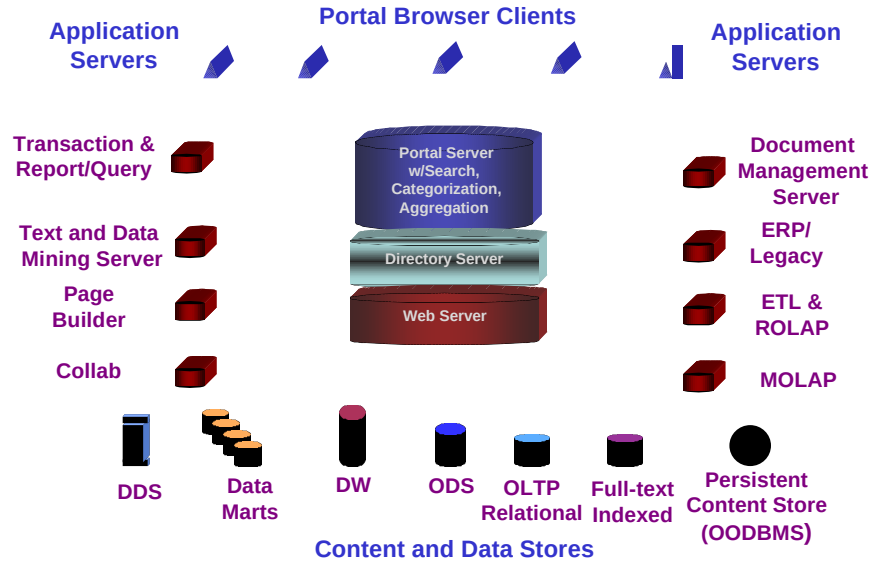
". . . an amalgamation of software applications that consolidate, manage, analyze and distribute information across and outside of an enterprise (including Business Intelligence, Content Management, Data Warehouse & Mart and Data Management applications.)"

- Integrates disparate applications and data/content stores into a single system

# Four Functional Portal Segments

- Decision Processing (Business Objects, Cognos)
- Content Management (Plumtree, Autonomy, Verity, Oracle, Enfish Enterprise, Sun ONE, CoreChange)
- Collaborative  Processing (Brain EKP, Intraspect, OpenText, IBM/Lotus)
- Decision Processing/Content Management (Hummingbird, Sybase, Viador, Brio.Portal, Computer Associates, TIBCO, SAP, Hyperwave eKnowledge Infrastructure)

# The Initial Stovepipe Architecture



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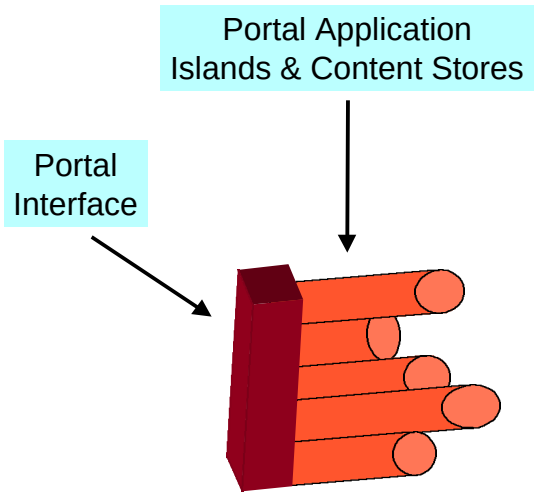
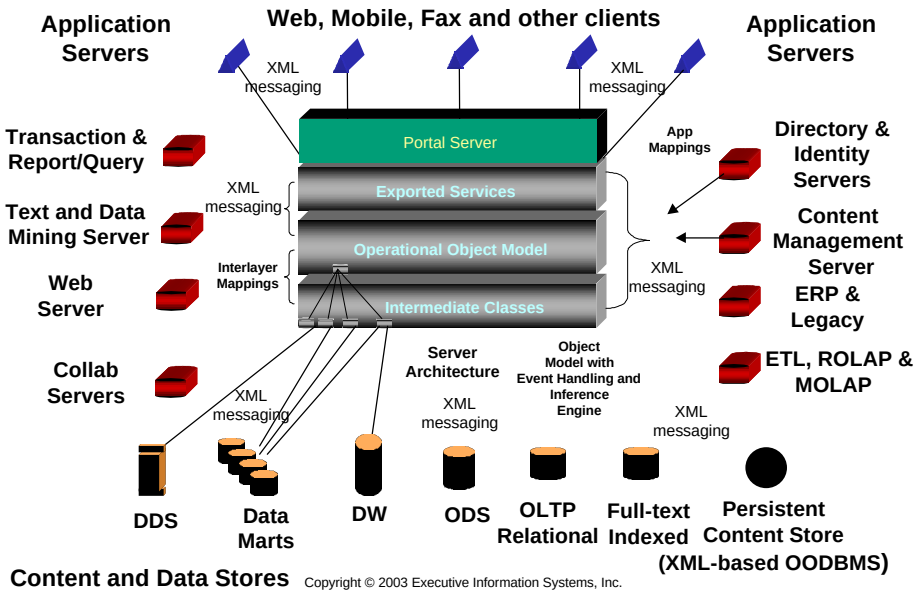



The Stovepipes

## The Artificial Information Manager is composed of Distributed Application and Integration servers



# Content Management

# Portal Progress and ECM: Approaches

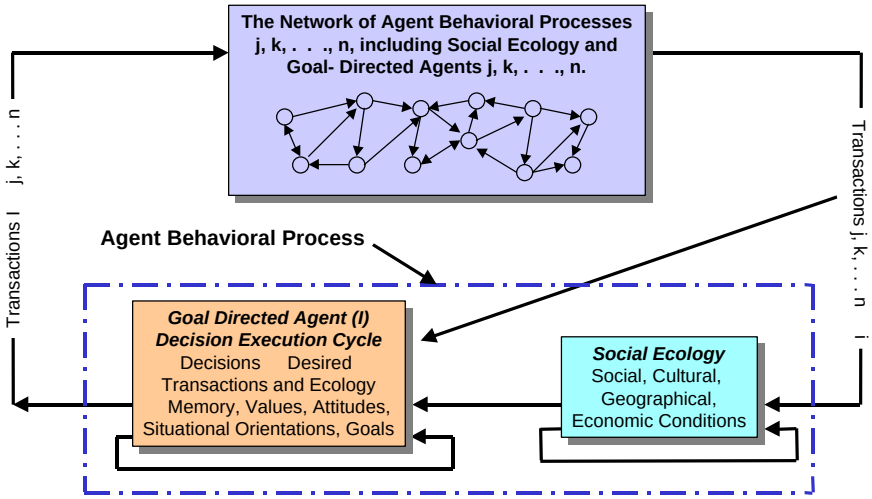
- Two Approaches
  - Bottom-Up -- Has portal progress incorporated state-of-the-art “Enterprise Content Management” as defined by software companies?
  - Top-Down -- Do portals support Content Management from a more normative point of view.

# Bottom Up Progress in ECM by Portal Vendors

- Three approaches here for PVs
  - Rely mainly on own ECM and Portal Capabilities [e.g. Vignette (Epicentric), possibly Divine (Sagemaker, Northern Light)]
  - Rely somewhat on own ECM capabilities (e.g. Hyperwave, OpenText, Hummingbird, Computer Associates)
  - Rely mostly on ECM capabilities of leading vendors such as Interwoven, Documentum, Filenet, Divine (e.g. Sun, Oracle, TIBCO, Sybase, Plumtree) ✓

# Top-Down

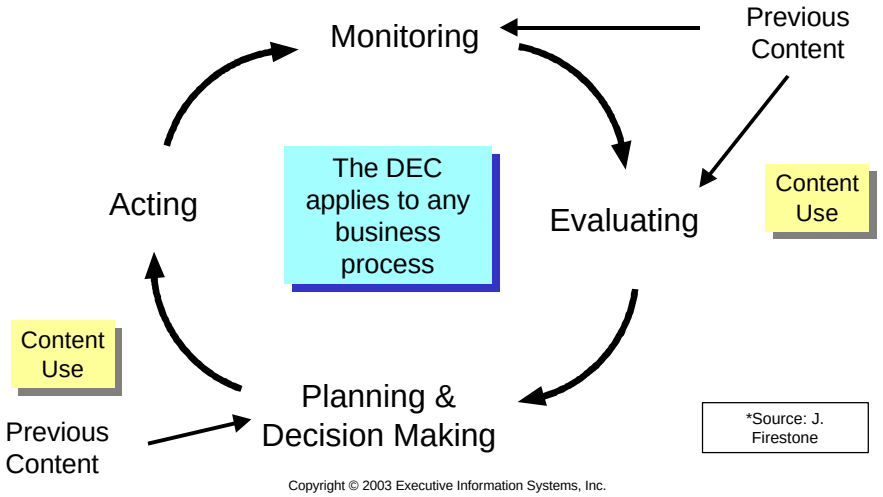
# The Flow of Behavior Among Agents






12

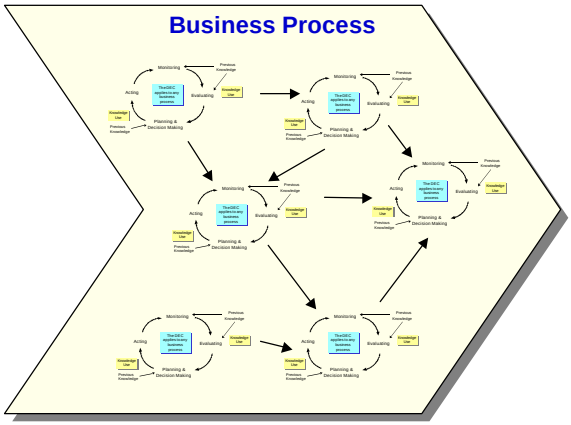
# The Learning Cycle (The Decision Execution Cycle)






13

# DECs and Business Processes




Business Processes

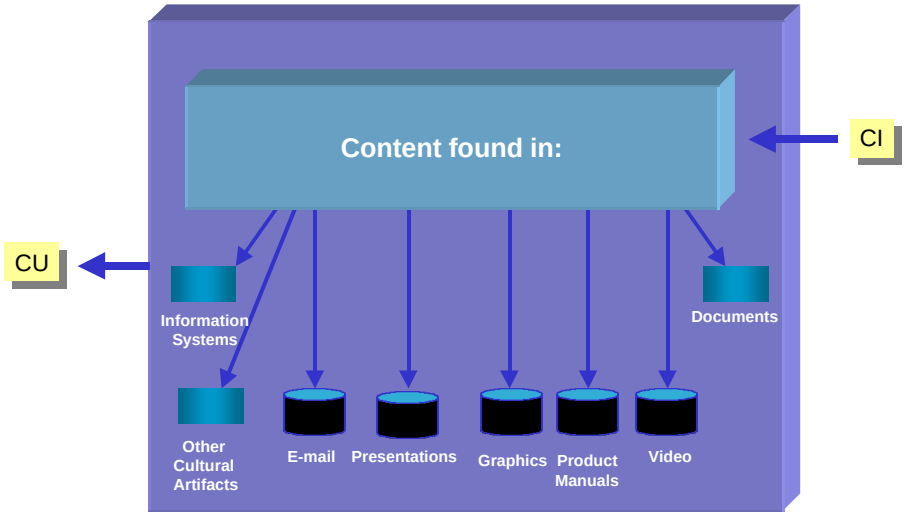
Ultimately break down to activity patterns

- Activities are produced by DECs
- Business processes are goal-directed patterns of DECs
- BPs exhibit conflicts between human attempts at control, and emergence and CAS self-organizing tendencies

# Unstructured Content

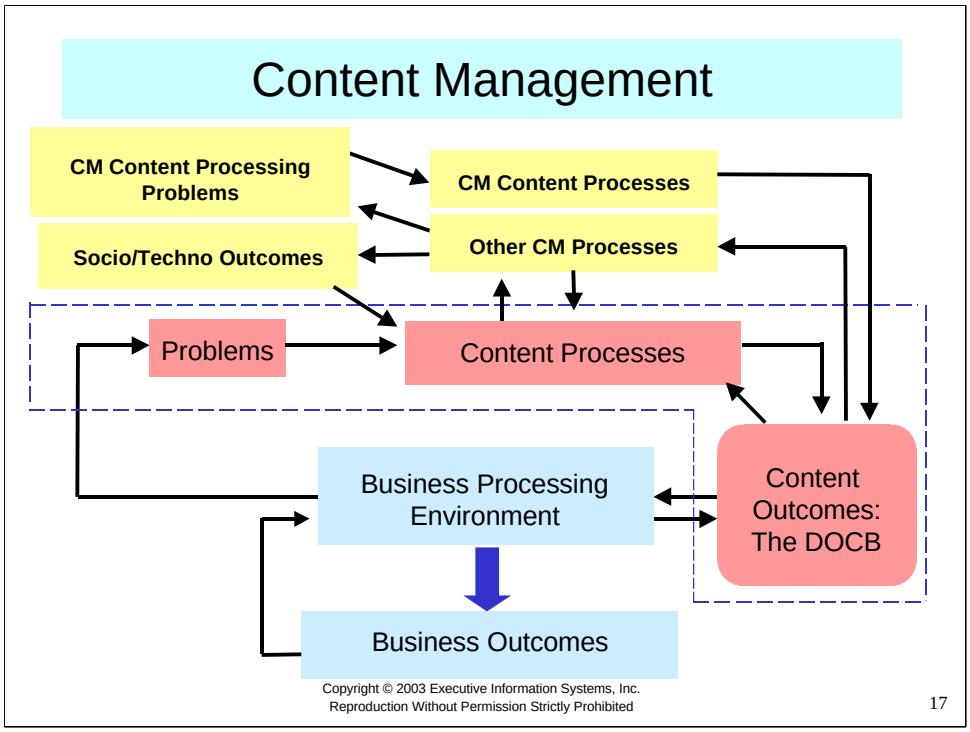
- Unstructured **Content** refers to media objects, or objects found in media, that are NOT described in terms of attributes and their values.
- Text objects such as documents and parts of documents, records, files, visual objects, electronic objects, e-mail messages, video files, and project plans, are all examples of unstructured content.
- Since unstructured content has no attributes and no structure of attributes, or rules for manipulating them, it also has no metadata structure.
- Therefore, there is “no standard facility” for query, search, or analysis of it.

# Previous Content: The Distributed Organizational Content Base (DOCB)






16


Content Management
CM Content Processing Problems
CM Content Processes
Socio/Techno Outcomes
Other CM Processes
Problems
Content Processes
Business Processing Environment
Content Outcomes: The DOCB
Business Outcomes
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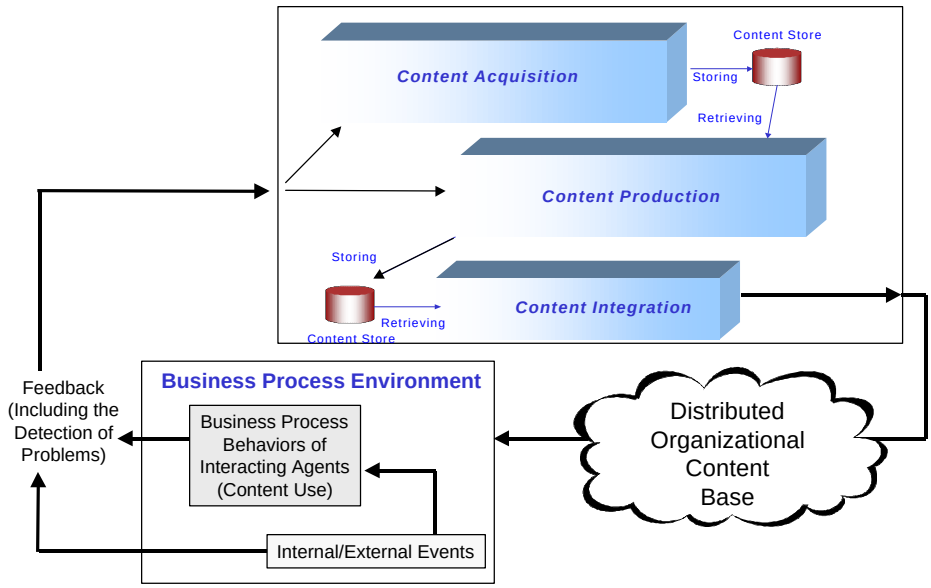
17

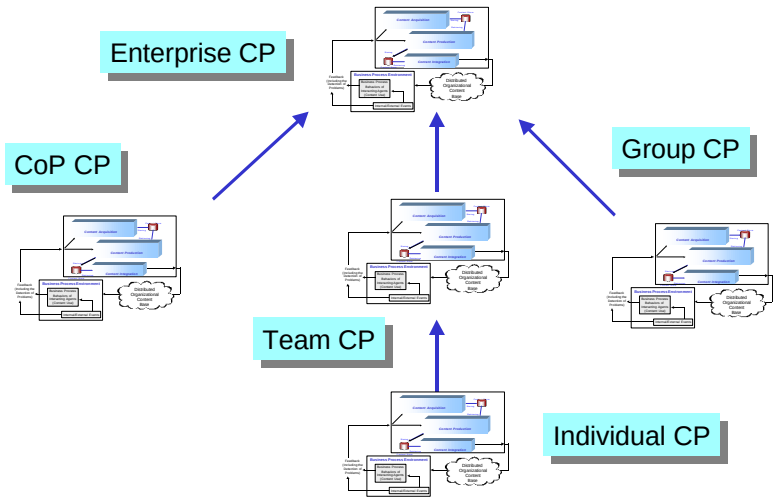
# Reference Model For CP: The 'CLC'



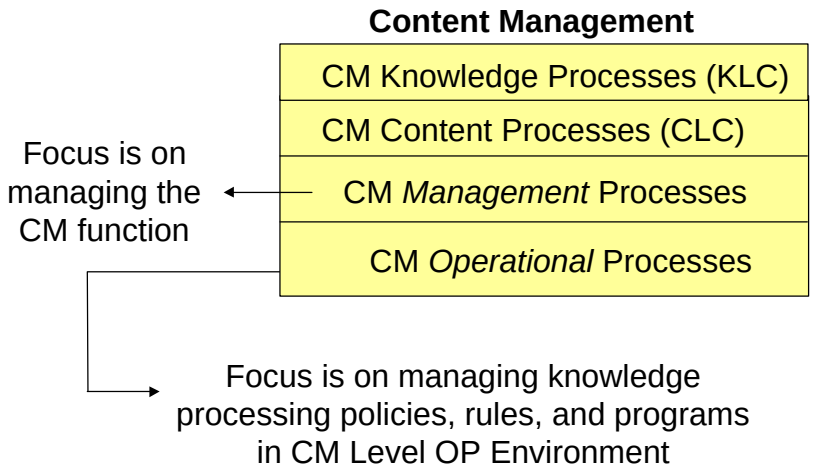



18

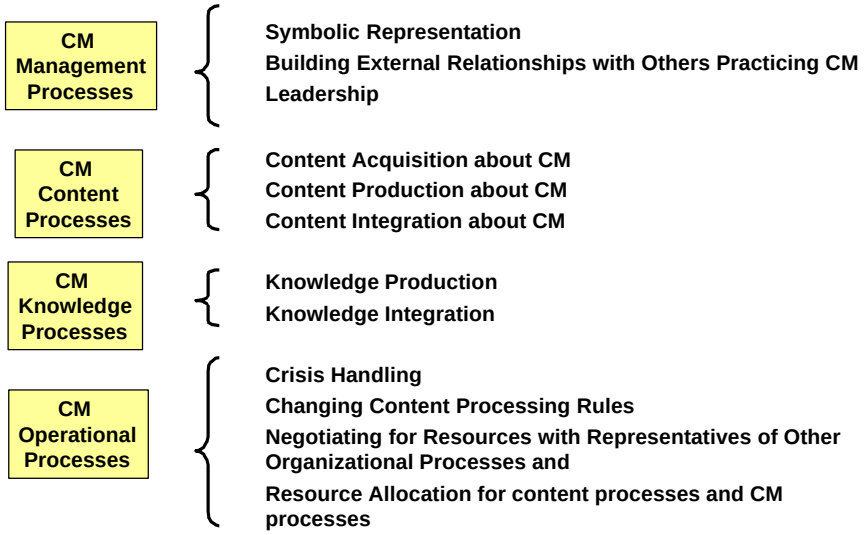
# Nested Content Processes



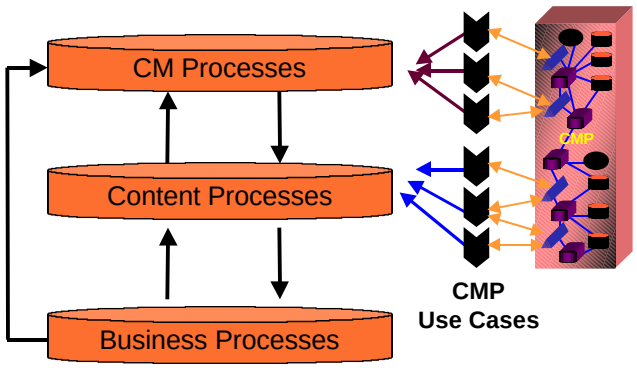
# Perspective On The CM Function



# Twelve CM Processes



# CM and IT Applications




The extent to which a portal product or solution is a CMP depends on the Content Processing and CM use cases it supports!

# Content Acquisition: Current Features

- Parallel processing of content requests
- Full-text searching/spidering of the network
- Polling of content sources and alerting
- Embedded search engines with Boolean, proximity, fuzzy, linguistic stemming, natural language, wildcard, Agent, passage, and concept-based search, advanced metadata searching, and crawlers scanning repositories for new documents to be indexed
- E-mail
- Subscriptions to external content channels both structured and unstructured

# Content Acquisition: Current Features (2)

- Cross-enterprise collaborative work spaces with full-text content capture
- XML messaging and rendering

# Content Acquisition: Needs

- More accurate retrieval from search
- Upgrading of sources to XML to support more effective text mining for further effectiveness in search and retrieval
- More effective text mining and semantic networking

# Content Production

- Personalization
- Automated filtering, routing, and classification
- Text mining and semantic networking
- Work flow enabled content approval
- XML messaging and rendering
- Automated updating of user profiles based on content usage patterns for personalization
- Automated concept extraction, and categorization of documents and content
- virtual community creation through monitoring, matching, and reporting similar user profiles

# Content Production (2)

- Automatic Categorization
- Automatic XML Tagging
- Drag-and-Drop taxonomy creation
- Integration based on web services and work flow delivering applications and content as needed and integrating processes
- Neural Network-based taxonomy formation through clustering
- information integration through ad hoc cross-portlet navigation
- Interface-based content integration into role-based, personalized workspaces

# Content Production (3)

- Integration Server for business process automation, work flow and, web services integration
- Production of threaded discussions from workspaces
- Semantic network analysis of e-mails
- Representation of Cognitive Maps in Portal Interface
- Collaborative Workspaces and other collaborative facilities
- Instant Messaging
- Project Collaboration
- Role-based distributed administration and personalization
- Ability to assign default user profiles

# Content Production: Needs

- Various content production techniques using structured data
  - Modeling of various kinds
  - computer simulation
- Graphics facilities
- Improvements in semantic networking and cognitive mapping technologies
- Intelligent Agent infrastructure providing for complex adaptive system-based knowledge production about cognitive maps of enterprise agents both human and artificial
- Improved collaborative knowledge production techniques

# Content Integration

- Role-based distributed administration and personalization
- Ability to assign default user profiles
- Content syndication information delivery based on automatic agent monitoring of new information matched to user interests followed by alerts
- Automatic Alerting to New Content Relevant for Users
- Graphical navigation through the portal
- Automatic hypertext linking from the content of the current user task to related information

# Content Integration (2)

- Automatic Targeted Advertising
- Drag-and-Drop self-publication
- Integration of personal content, communities, and enterprise content
- Event subscription and notification
- Bulk-publishing
- Web Distributed Authoring and Versioning (WebDAV) Tool
- Collaborative Workspaces & other collaborative facilities
- Instant Messaging
- Project Collaboration

# Content Integration: Needs

- More accurate targeting of distributed content
- Higher quality information about performance of content in use
- More complete information on content in use
- Better structuring of published content for enhanced understanding
- Improvement in effectiveness of Learning Content Management Systems

# General Access and Integration

- Portlets
- Identity Management and Single Sign-On
- LDAP integration for authentication, synchronization, and personalization
- Multi-tier architecture for load-balancing and scalability
- Support for Wireless Protocols
- Inter-portlet integration
- EAI adapter
- Shared object repository database J2EE compatible architecture

# General Access and Integration (2)

- Application development environment for portlet development and integration -- General access and integration of content and applications
- Rules engine – Integration of content and applications
- J2EE-compliant Application server platform  for web services w/XML support -- integration of content and applications
- Rules-based personalization -- Retrieving/presenting/publishing
- XML import/export services – Integration. Communication, and web services

# General Access and Integration (3)

- Support for integration and connectivity standards including XML, as well as EJB, CORBA, COM, COM+, HTTP, DHTML, TCP/IP, Java, JMS, JND, JSP, SOAP, WSDL, UDDI, and others
- Information integration through ad hoc cross-portlet navigation
- All-in-all we are in the middle of great advances in this category

# ECM: Management Processes

- Collaborative and content generation and publication facilities provide some support for management processes
- But support for the three processes (symbolic Representation, Leadership, Building Relationships) is not very explicit

# ECM: Content and Knowledge Processes

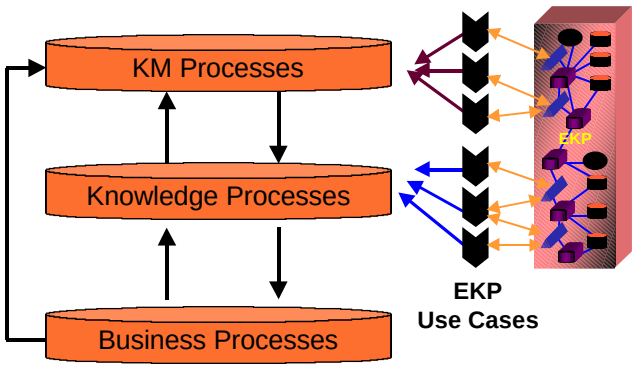
- Content: Provides same support at ECM level as at Content Processing Level
- Knowledge: Insofar as knowledge production and integration in knowledge processing is similar to content processing support provided by Portal/ECM solution for knowledge processing is good.
- But there is a critical area where ECM cannot provide support without crossing the boundary from ECM to KM
- More on that below.

# ECM: Operational Processes

- Provides collaborative support for the four processes (crisis handling, rule changing, negotiating, allocating resources) as well as content processing support.
- Fails to provide specific resource allocation or negotiation support or knowledge production support/

# Relationship to KM

# KM and IT Applications



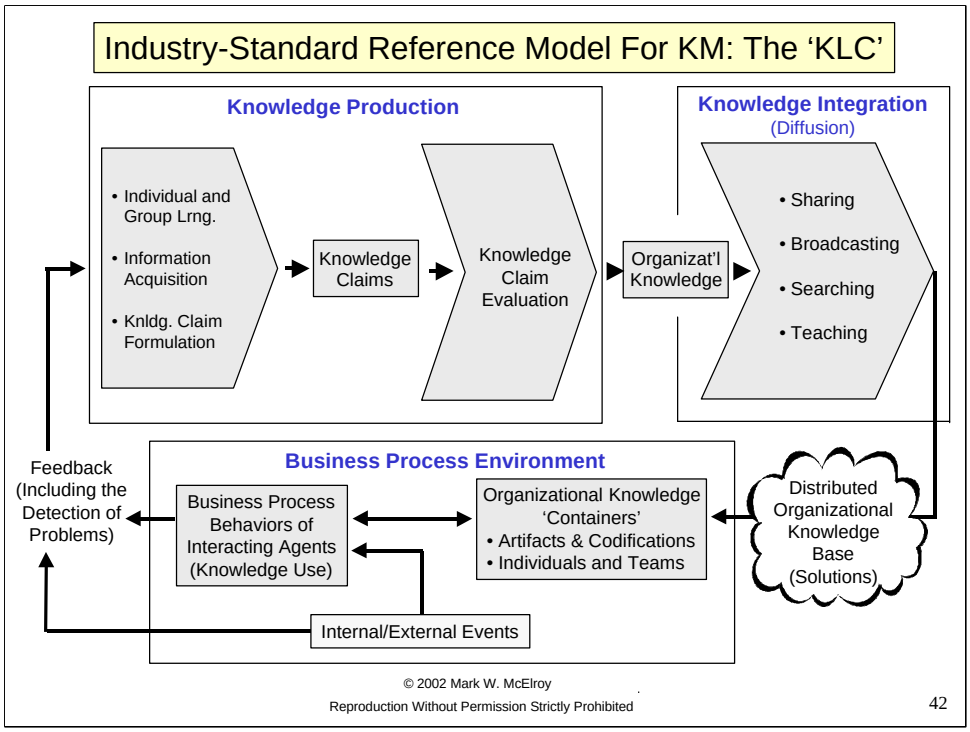

The EKP is a TNKM Concept! See dkms.com

The extent to which a portal product or solution is an EKP depends on the knowledge processing and KM use cases it supports!

# The New Knowledge Management: Unified Theory of Knowledge

**Unified theory: Knowledge is an encoded, tested, evaluated and surviving structure of information that helps the system that developed it to adapt**

- Three types
  - Encoded structures in physical systems allowing those objects to adapt to their environment (world 1)
  - Tested, evaluated, and surviving beliefs (in minds) about the world (world 2)
  - Tested, evaluated, and surviving, sharable (objective), linguistic formulations about the world (world 3)


Industry-Standard Reference Model For KM: The 'KLC'
Knowledge Production
• Individual and Group Lrng.
• Information Acquisition
• Knldg. Claim Formulation
Knowledge Claims
Knowledge Claim Evaluation
Organizat'l Knowledge
Knowledge Integration
(Diffusion)
• Sharing
• Broadcasting
• Searching
• Teaching
Feedback (Including the Detection of Problems)
Business Process Environment
Business Process Behaviors of Interacting Agents (Knowledge Use)
Organizational Knowledge 'Containers'
• Artifacts & Codifications
• Individuals and Teams
Distributed Organizational Knowledge Base (Solutions)
Internal/External Events
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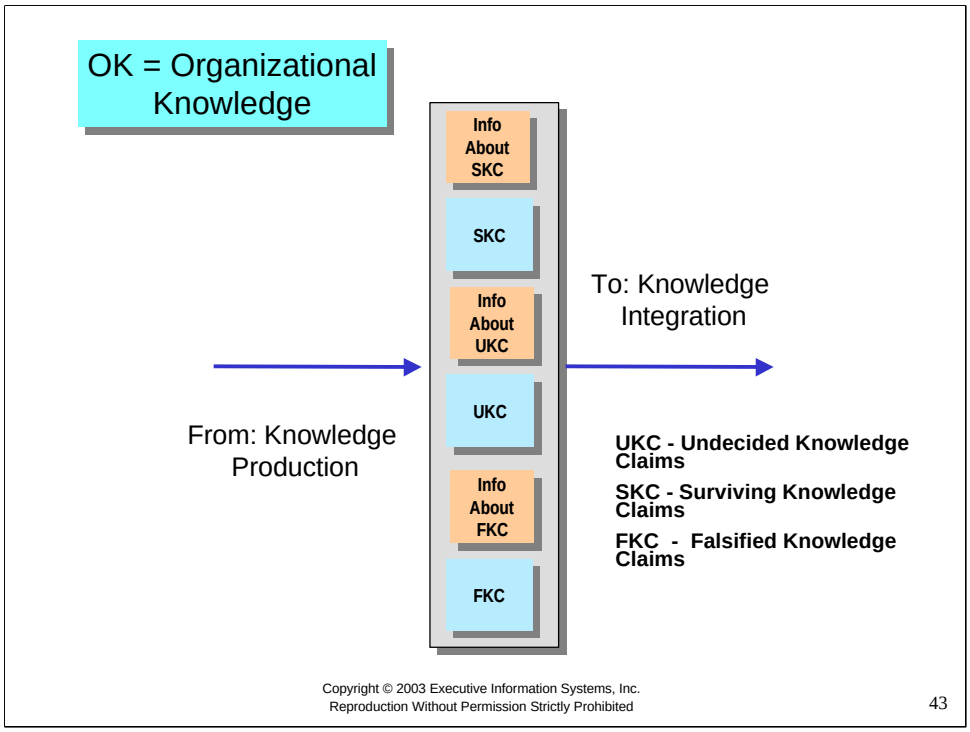
42



# Nine KM Processes

**KM Management Processes**

- **Symbolic Representation**
- **Building External Relationships with Others Practicing KM**
- **Leadership**

**KM Knowledge Processes**

- **KM-level Knowledge Production**
- **KM level Knowledge Integration**

**KM Business Processes**

- **Crisis Handling**
- **Changing Knowledge Processing Rules**
- **Negotiating for Resources with Representatives of Other Organizational Processes and**
- **Resource Allocation for knowledge processes and for other KM processes**

# No Explicit Support for KCE

- **No recognition that KCE is important in knowledge production**
- No focus on KCE criteria and frameworks in applications
- No focus on KCE modeling or decision making
- No automated support for testing competing knowledge claims in knowledge production
- No tracking of results and history of KCE
- No ratings of competing knowledge claims
- No specific support for collaborative KCE
- **in spite of claims from vendors, not a single product supports specific KCE functionality**

# Organizational Knowledge VS. Organizational Information

- Not one EIP or ECM product or so-called EKP product stores record of performance of knowledge claims against competitive alternatives
- This is “bottom line” regarding support for identifying knowledge production outcomes in current software
- **Currently, despite all marketing rhetoric, None of the above products provide a way to distinguish knowledge from “just information”**
- **So none support the core of KM**

# The End

Questions?
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