Portal Progress and Knowledge Management

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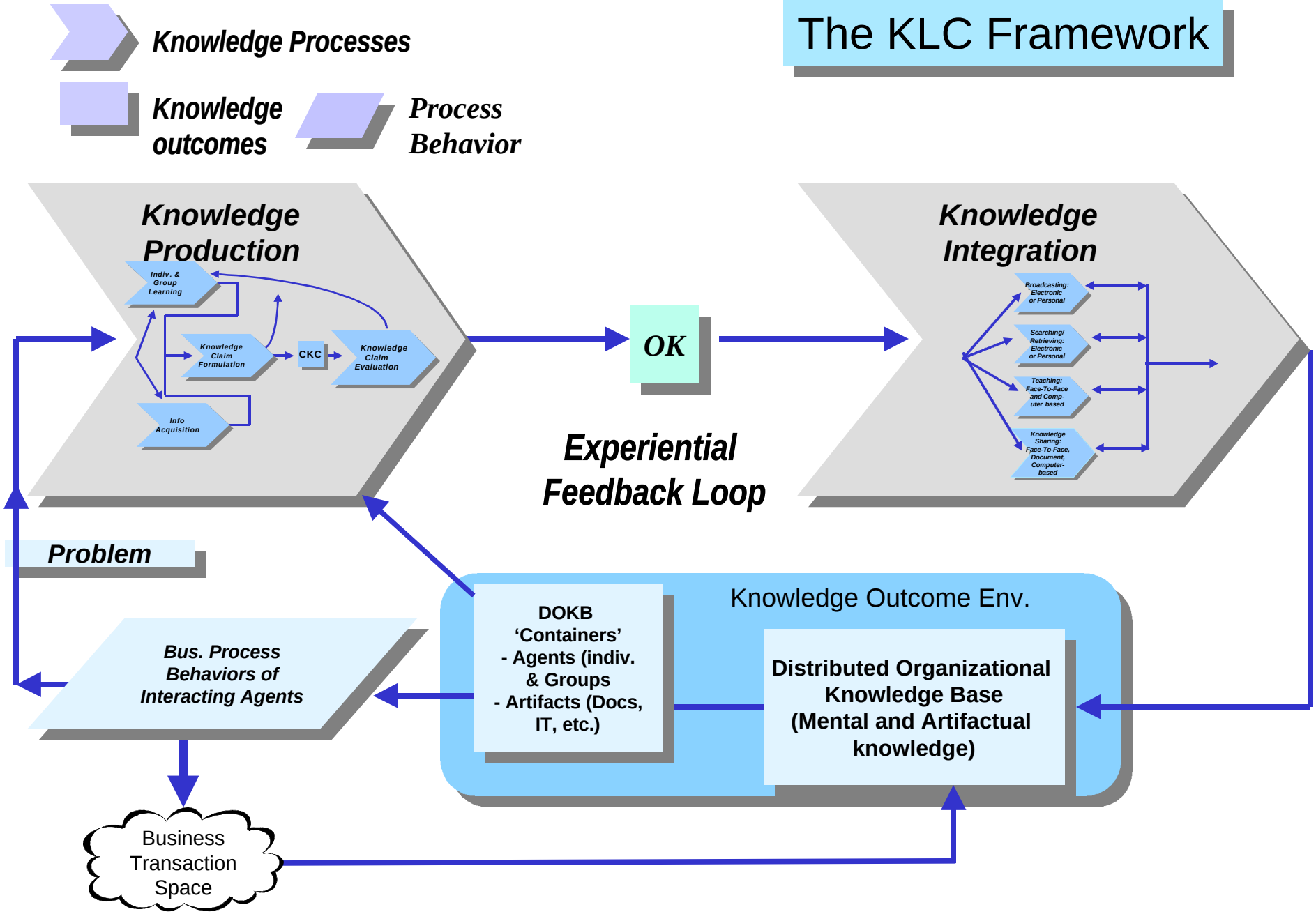
March 20, 2002

Enterprise Portals and KM

- Since late 1998 when portals emerged, many have seen the portal as KM's "killer app."
- In the past, I've frequently argued that KM is not well-supported by EIPs (see my papers at www.dkms.com)
- Here I want to look at this issue in light of TNKM and in light of recent progress in portal tool products.
- I'll proceed by going through the main categories of the KLC and KM Frameworks and relating them to portal tools and their evolution

The KLC Framework



Knowledge Life Cycle Categories

- Information Acquisition
- Individual and Group Learning
- Knowledge Claim Formulation
- Knowledge Claim Evaluation
- OK: Falsified, Undecided, and Surviving Knowledge Claims and Meta-information about these claims
- Knowledge and Information Broadcasting
- Knowledge and Information Searching and retrieving
- Teaching
- Knowledge and Information Sharing
- The Distributed Organizational Knowledge Base

KM Categories

- Knowledge Management - Interpersonal Behavior
  - Leadership (hiring, training, motivating, monitoring, evaluating, etc.)
  - Building relationships with individuals and organizations external to the enterprise
- Knowledge Management - Knowledge Processing Behavior (Knowledge Production and Integration and their sub-processes)

KM Categories (Two)

- Knowledge Management - Decision-Making KM Activities
  - Changing knowledge process rules at lower KM and knowledge process levels
  - Crisis Handling
  - Allocating Knowledge-related and KM Resources
  - Negotiating agreements with representatives of other business processes

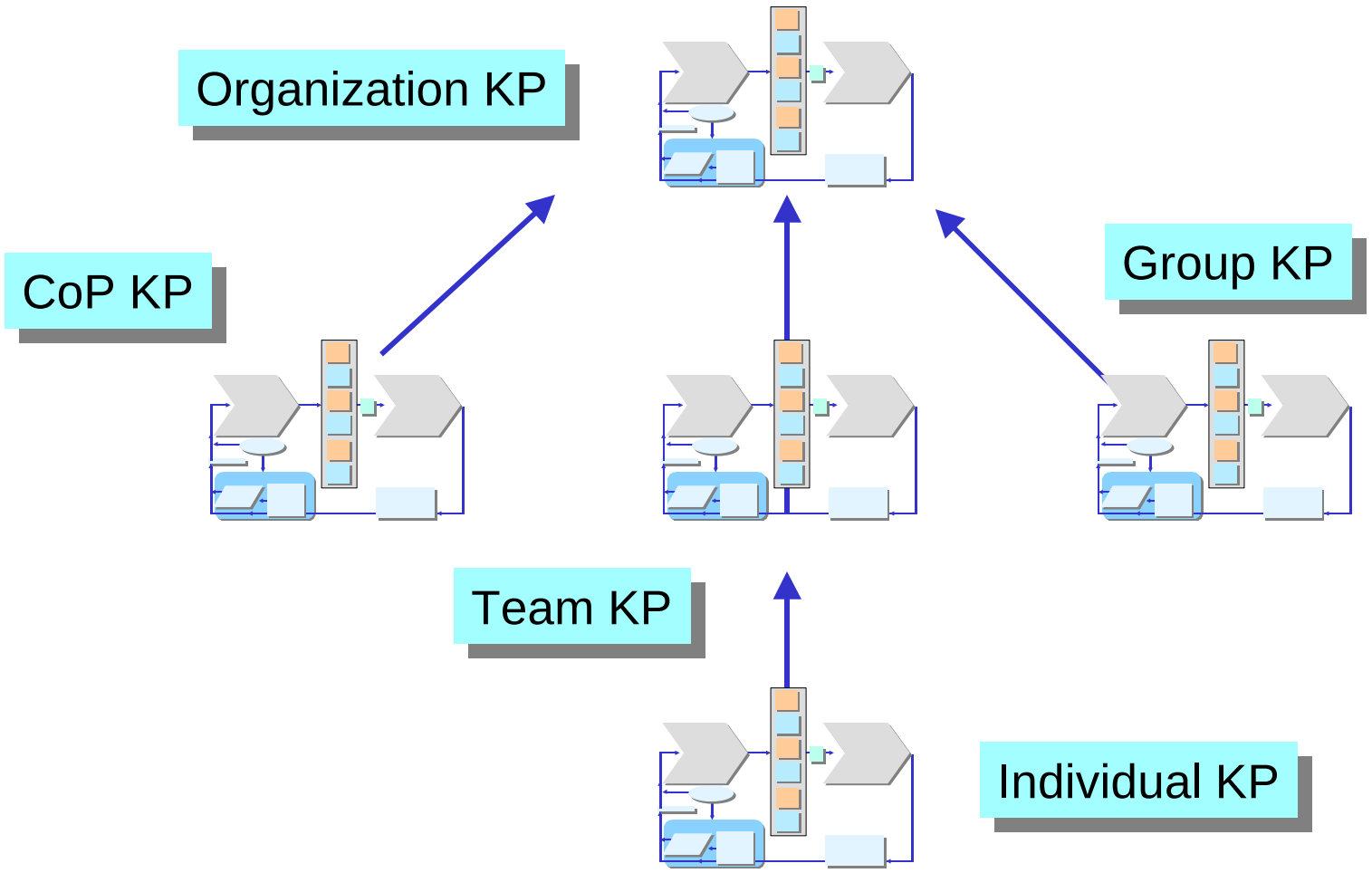
Information Acquisition

- This has been an area of portal strength since the introduction of portal products
- To some degree, even when portals are of the Business to Employee (B2E) type, they've provided functionality for retrieving information from souces external to the enterprise
- This capability has increased with technical developments in portal tools.
- In particular, recent developments from Autonomy, Convera and Verity have provided an **increasing precision** to responses to search queries based on an ability to take context into account in search

Information Acquisition (Two)

- This trend is likely to accelerate over the next few years
  - as the capability to structure unstructured content through XML increases and
  - **as intelligent agents grow more sophisticated in their ability to map out semantic networks, cognitive graphs, and cognitive maps and these network patterns become the basis for responses**

Nested Knowledge Processes



Individual and Group Learning

- Individual and Group learning is about KLCs at levels below the level of the organization
- **This means that support for I and G learning increases as support for the other sub-processes in the KLC increase**
- In addition, however specific support for individual learning is provided by e-learning capabilities
- The leader among portal vendors in this area has been **Hyperwave AG.**
- Hyperwave's eLearning Suite provides "eLearning content and advanced functionality for collaborative learning" as part of its "eKnowledge Infrastructure"

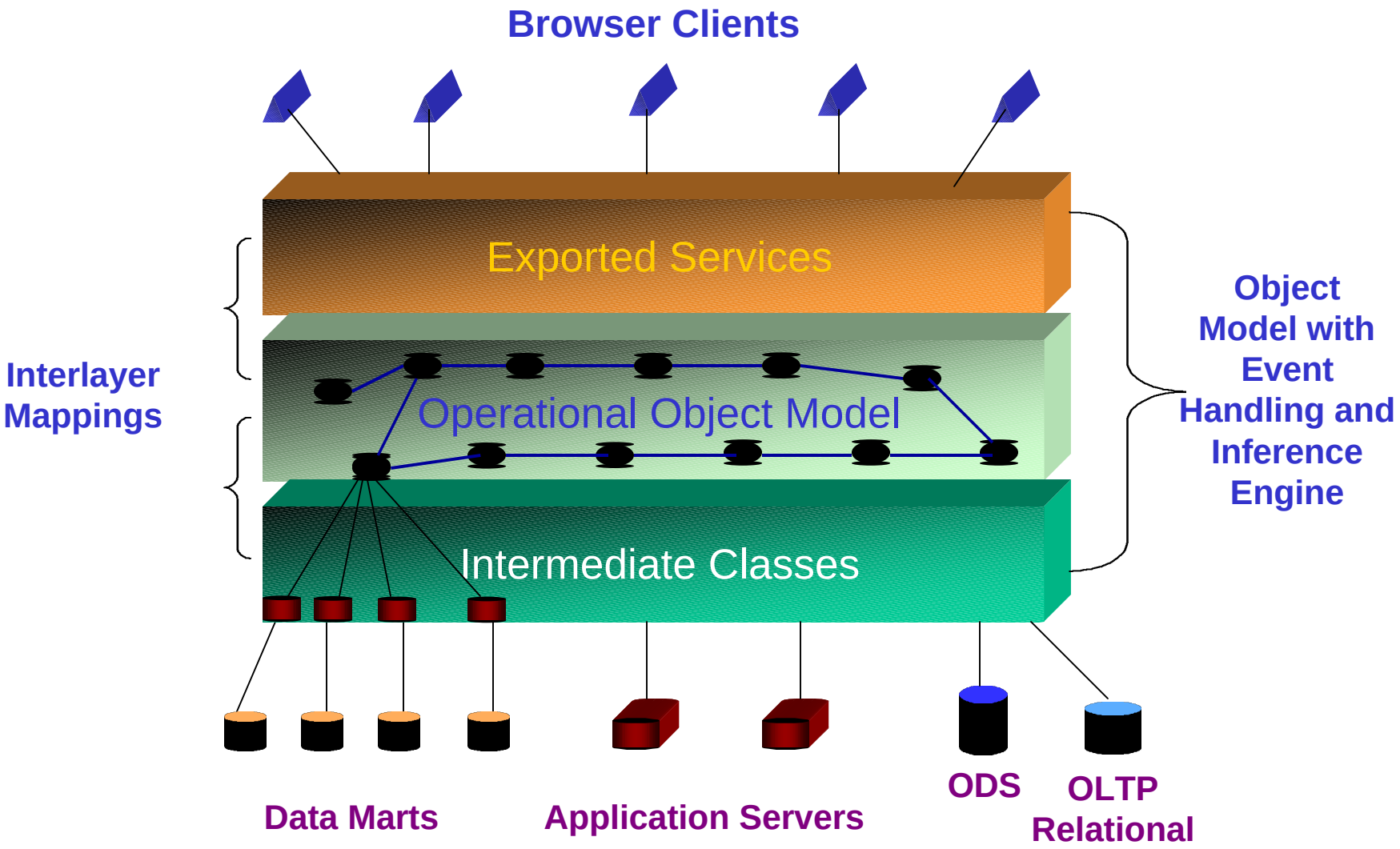
Individual and Group Learning (Two)

- On the other hand, individual problem-solving requires access to multiple un-integrated software applications in a portal system
- **Solutions may require repeated and integrated execution of these un-integrated applications through workflow and business process automation (BPA) modeling and applications**
- But workflow and BPA are not enough to synchronize and manage changes in shared objects and components in the system
- **An integrative business process engine performing both BPA and Enterprise Synchronization of changing objects and components is necessary**

Individual and Group Learning (Three)

- **A major trend in portal product development is enhancement of portal integrative capabilities and particularly development of the business process engine, work flow and BPA capabilities needed to support problem solving**
- The leader in this area is **SAP Portals** which acquired its HyperRelational technology, based on an object layer integrating diverse applications and information by purchasing TopTier
- Other vendors who are leaders in the portal EAI area include **Sun iPlanet, IBM WebSphere, CA CleverPath, TIBCO, and Sybase.** Hummingbird, Netegrity (acquired DataChannel) and Citrix are just a step behind

Object-based Integration/Synchronization Server and Semantic Heterogeneity



Individual and Group Learning (Four)

- **EIPs don't support automated learning as an assist to human learning**
  - No support for intelligent agent-based learning
  - No support for aggregation of knowledge claims input into the portal system by individuals into team, group, or system level knowledge claims
  - No support for partially automated organizational level learning

Knowledge Claim Formulation

- This is an area in which portals provide generalized, but non-specific support. They provide support for interaction among individuals, within teams, and in communities, and increasingly support social networks (even cafes) and taxonomy generation (See for example, SAP Portals, Hyperwave AG, CA's CleverPath Portal, Sun iPlanet, Hummingbird EIP, Intraspect, and IBM)
- e-Learning also supports KCF if the software supports learning in a workplace context
- **However, they don't generally incorporate prioritization, Knowledge Discovery in Databases/ Data Mining, analytical modeling and computer simulation tools, best practices capture software, or other software targeted on KCF**

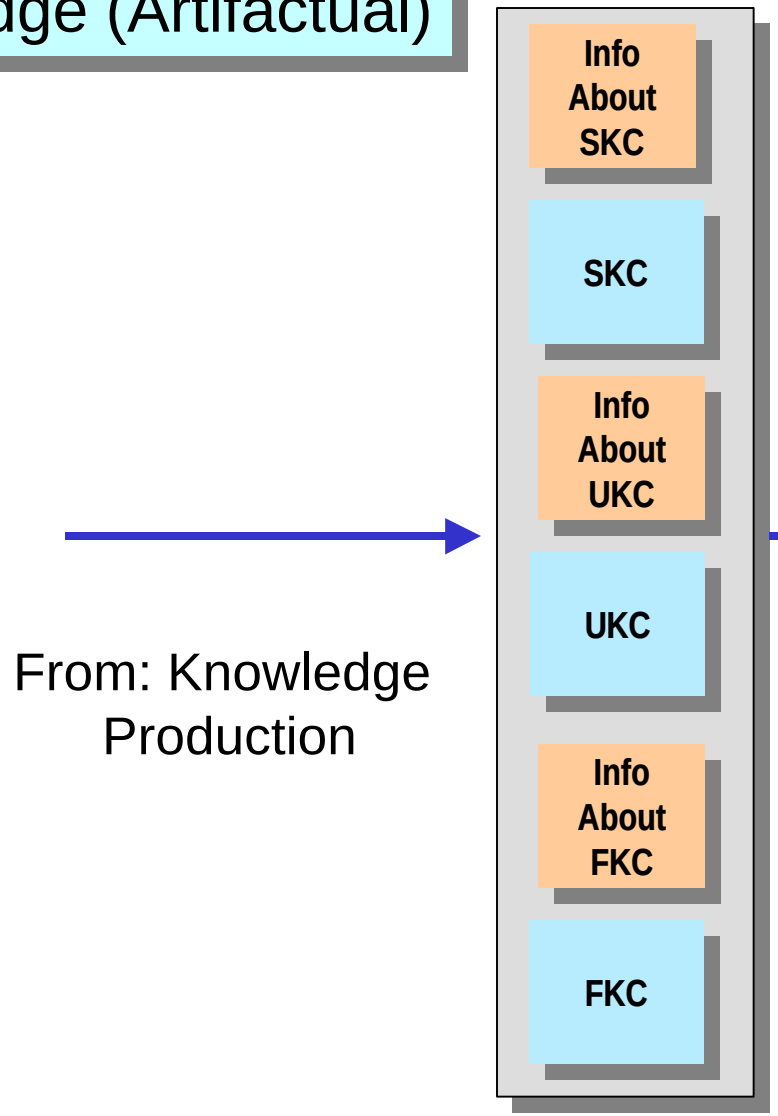
No Explicit Support for KCE

- **EIPs provide no recognition that KCE is important in knowledge production**
- No focus on KCE criteria and frameworks in applications, or on change in these
- No focus on KCE modeling or decision making
- No automated support for testing competing knowledge claims in knowledge production

No Explicit Support for KCE (Two)

- No tracking of results and history of KCE
- No ratings of competing knowledge claims
- No specific support for collaborative knowledge claim evaluation
- **Further, in spite of claims from a number of vendors that are selling a knowledge portal, not a single one supports specific KCE functionality.**

OK = Organizational Knowledge (Artifactual)



To: Knowledge Integration

From: Knowledge Production

UKC - Undecided Knowledge Claims

SKC - Surviving Knowledge Claims

FKC - Falsified Knowledge Claims

Falsified, Undecided, and Surviving Knowledge Claims and Meta-information about these claims

- Not one EIP product or so-called EKP product stores the record of performance of knowledge claims against competitive alternatives
- This is the “bottom line” regarding support for identifying knowledge production outcomes in EIPs.
- **Currently, despite all the marketing rhetoric, No so-called EKP products provide a way to distinguish knowledge from “just information.”**

Knowledge and Information Broadcasting

- EIPs have greatly increased their capability to target or broadcast information to knowledge workers
- Specifically, this capability has increased as portal products have provided the means to customize portal interfaces and information delivery according to the role of knowledge workers and as the capability of “spiders” and intelligent retrieval agents have increased
- **Over the past few years role-based customization has become a standard capability of market-leading portal products**
- In addition many products offer the knowledge worker publication capability at the volition of the knowledge worker, though most prefer to maintain administrator mediated publication

Searching and Retrieving

- I’ve already mentioned developments in search technology that have increased the precision of responses to queries of external information
- In addition, **the ability to generate taxonomies automatically and in combination with human judgement** has increased since 1998 and continues to increase with the development of semantic networking technology and XML technology including XML topic maps, DARPA’ s Agent Markup Language (DAML) and the Ontology Interchange Language (OIL)
- **This, in turn, greatly increases the ability to generate useful taxonomies for navigation in the portal interface**

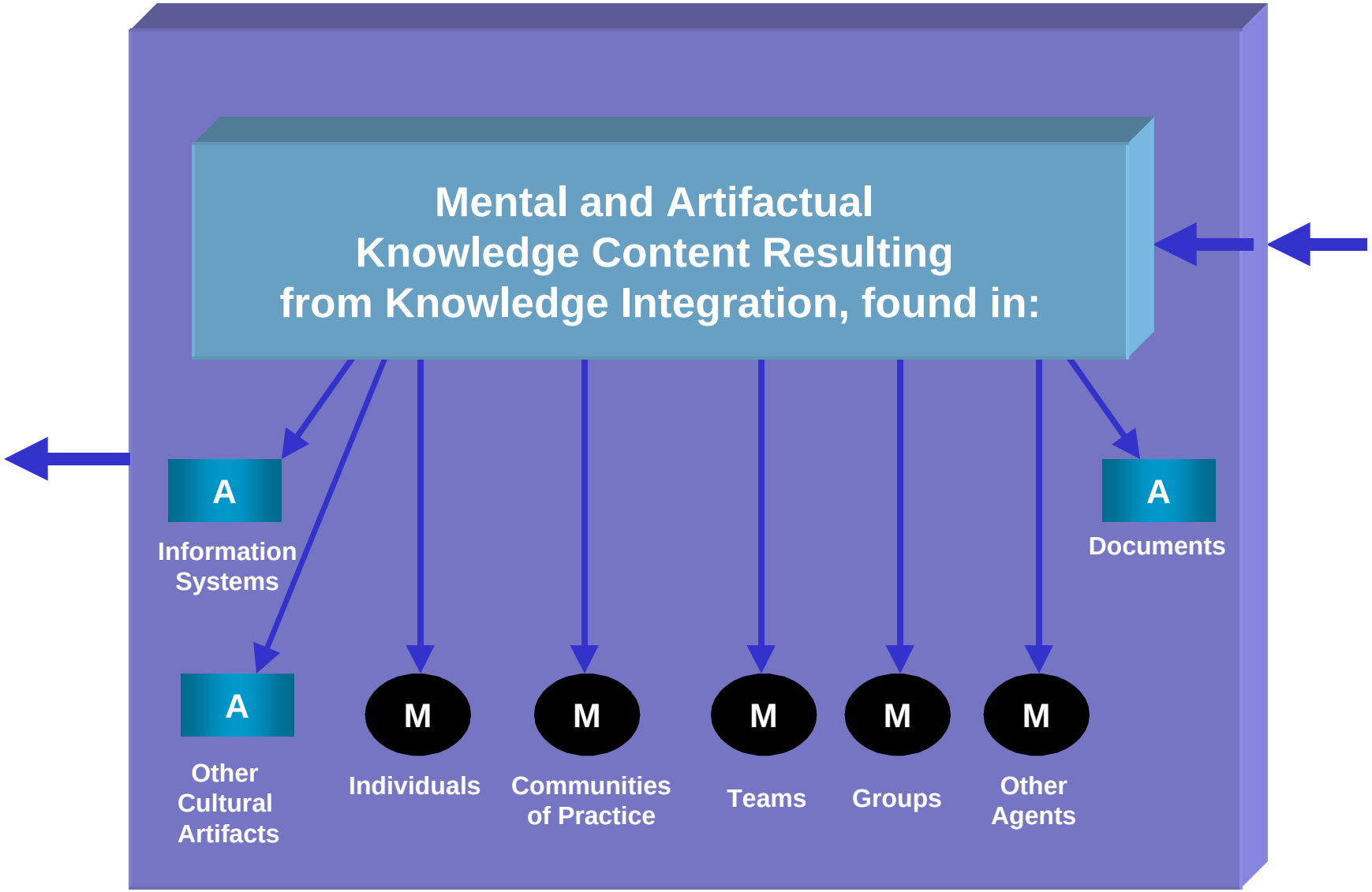
Teaching

- Teaching is a form of broadcasting associated with an individual who has instructional authority directed at others who recognize this authority
- A distinction may be made between e-Learning and Distance Learning in the sense that e-learning is much more focused on the workplace context and providing assistance for solving role-based problems, while distance learning is focused much more on providing courseware providing educational background
- **In any event, there is no difficulty in providing computer-assisted teaching through courseware supplemented by inquiries directed at instructors through portal tools.**

Knowledge Sharing

- Knowledge Sharing is a sub-process that is increasingly well-supported by portals.
- The ability to share among members of a community of practice, or to provide access to common repositories, or to exchange information through collaborative spaces is increasing all of the time
- **Knowledge Sharing is perhaps the least problematic area for portal products outside of information acquisition.**

Distributed Organizational Knowledge Base



The Distributed Organizational Knowledge Base

- The outcome of knowledge integration is the DOKB
- The individual and group psychological components of the DOKB cannot be stored in an EIP system
- But the sharable data, information and knowledge produced by the knowledge integration process are stored in organizational documents and information systems and can be accessed and retrieved later
- **Note that if we are to distinguish knowledge from information in the DOKB, we must have meta-information in it that distinguishes knowledge from information**
- **But there are no EIPs that provide such information**

KM: Leadership

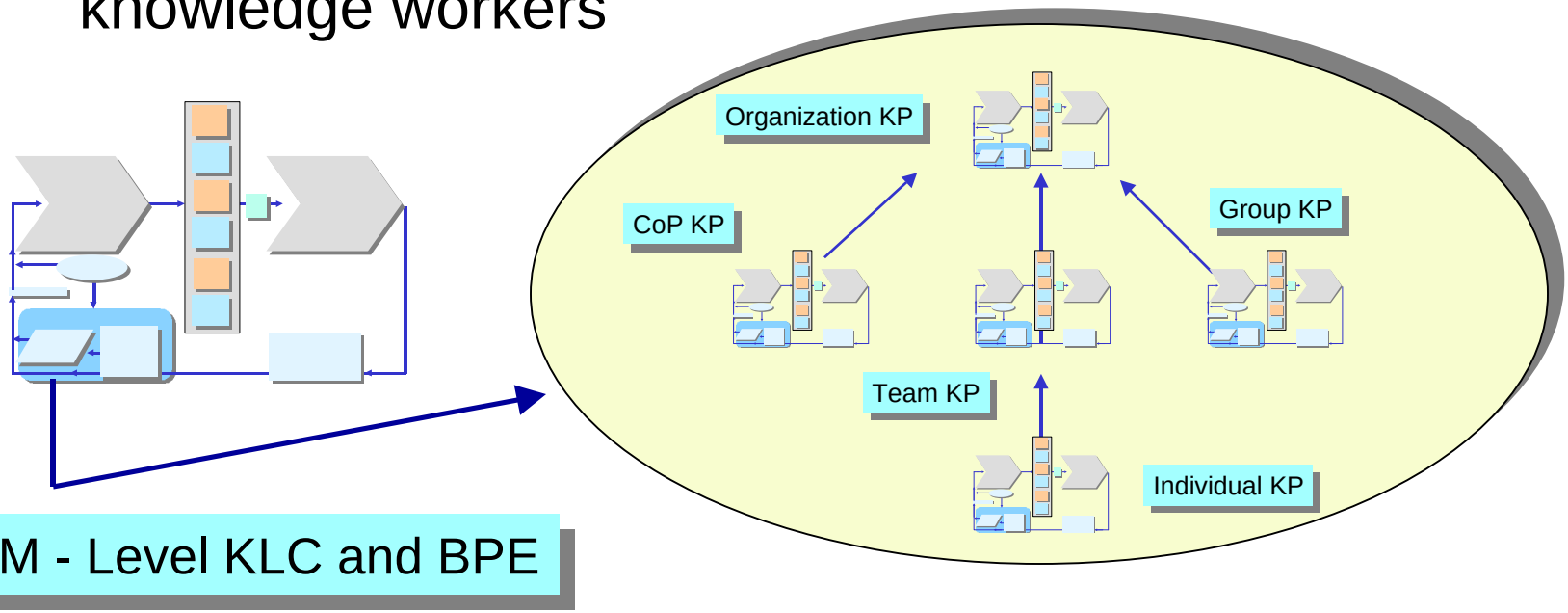
- Insofar as leadership involves exercise of interpersonal communication activities portals support it well.
- In addition, they can also support hiring functions if HR applications are integrated as portlets
- **Some portal case studies have reported development of incentive systems for portal solutions (e.g. at EDS), but portal vendors generally don't offer this as a portal capability**

Building External Relationships

- As B2B eBusiness and collaborative commerce capabilities have developed, more powerful applications for supporting development of interpersonal relationships have been included in portals
- **Today, the capability to develop external relationships through collaborative applications of various kinds is comparable to the support provided for developing internal relationships**

KM Knowledge Production and Integration Capabilities

- KLCs exist for knowledge managers as well as knowledge workers



KM - Level KLC and BPE

- **The support provided by portals for the sub-processes of the KLC therefore applies at the KM level as well as at the business process level.**

Changing Knowledge Processing Rules

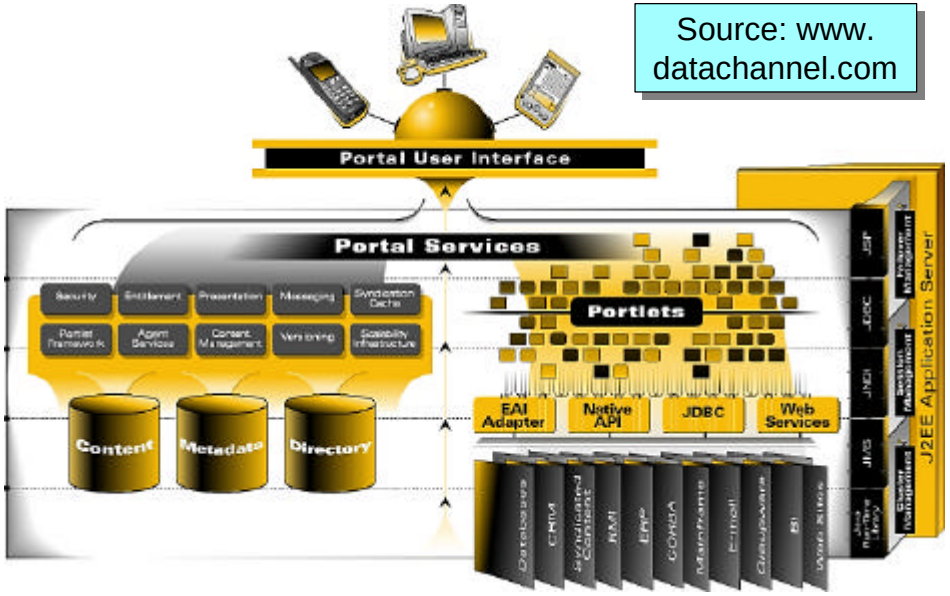
- EIPs provide support for broadcasting and communicating changes in knowledge processing rules
- Developing new rules is a matter of KM knowledge production and knowledge integration
- **EIPs do not provide support for incentive systems that may help to implement changes in knowledge processing rules**

Crisis Handling

- This KM category uses activities belonging to other KM categories
- **So it is supported precisely to the degree other categories are supported**

KM Resource Allocation

- KM resource allocation requires the presence of analytical modeling and simulation tools in portals.
- These may be integrated through portlets



- **But products that call themselves EKPs do not currently provide support for such activities**

Negotiation

- EIPs don’t support planning for negotiation purposes
- Such applications are not difficult to develop and integrate into EIPs, but this has not been done so far

The Gap

- I think my review of various KLC and KM categories of the TNKM framework provides a view of the gap between the current state of portal progress and what is needed for an EIP that would support knowledge processing and knowledge management -- that is, an Enterprise Knowledge Portal or EKP.
- **Specifically, current EIPs provide support for those sub-processes in knowledge processing and knowledge management that are common to KM and information processing and information management**

The Gap (Two)

- However, they don't support I& G Learning, Knowledge Claim Formulation, Knowledge Claim Evaluation, Knowledge Outcomes, the DOKB, KM knowledge processing, resource allocation, or negotiation well
- **The most glaring departure from TNKM requirements is in the area of Knowledge Claim Evaluation**
- Here current portal products provide almost no support and the idea of providing it is apparently not on the radar screen of any vendor
- Perhaps that will change. **But we're still probably at least two years away from a real knowledge portal.**
- **How we can get there is a subject for another day.**

So What?

- EIPs are not KM's killer app
- They can support ***information*** processing well
- They do enhance information acquisition
- They also support many kinds of KM activities where these require information management and communication among people
- They also provide better support for the collaborative interaction among knowledge workers that provides a constructive background environment for our efforts at I & G Learning, KCF, and KCE

So What? (Two)

- So by all means get on the EIP bandwagon, they greatly improve information processing and information management and their integrative and collaborative capabilities are rapidly improving
- But if what you're after is knowledge management, you need to go beyond EIPs to human based solutions in the short-run
- And, in the longer run, you need to either develop EKPs, if you want to remove the greater risks inherent in EIPs, or alternatively wait for EKP technology to develop if you can afford to live with risk. Either way, the important thing is to have no illusions and to know EIPs for what they are.