

Some practical issues in developing portals

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Agenda

- Portal statistics
- Architecture and integration issues
- Security and sign on
- The role of web services
- Knowledge management
- Implementation issues

My background

- Plenty of practical experience with 20 years in various areas of managing knowledge
 - First degree was in studio art
 - Journalist (trade magazine editor and newspaper reporter)
 - Financial management of small businesses
 - 9 years working with Exxon on a safety engineering/knowledge management tool
 - 11 years of data warehousing and CRM experience, practice leader for large consulting firms
 - VP of IS at DePaul where we have data warehousing, content management, portals and performance measurement initiatives at various stages of development
- Still a student of knowledge management and portals
 - Continuing education and academic research at DePaul

Portal market statistics

- Dec. 2002 Morgan Stanley CIO survey revealed portal spending in 2003 was No. 2 behind security software
- META Group estimates that the portal market is 20% penetrated but by 2004 85% of the Global 2000 will have selected a portal platform
- Gartner: portal software sales will grow from US \$709 million in 2001 to US \$2 billion by 2006. IDC says from US \$550 million in 2001 to US \$3.1 billion by 2006
- Top vendors: Plumtree, IBM, SAP, Oracle, Microsoft, CA
- Is this hype? Will this fad fade away too?

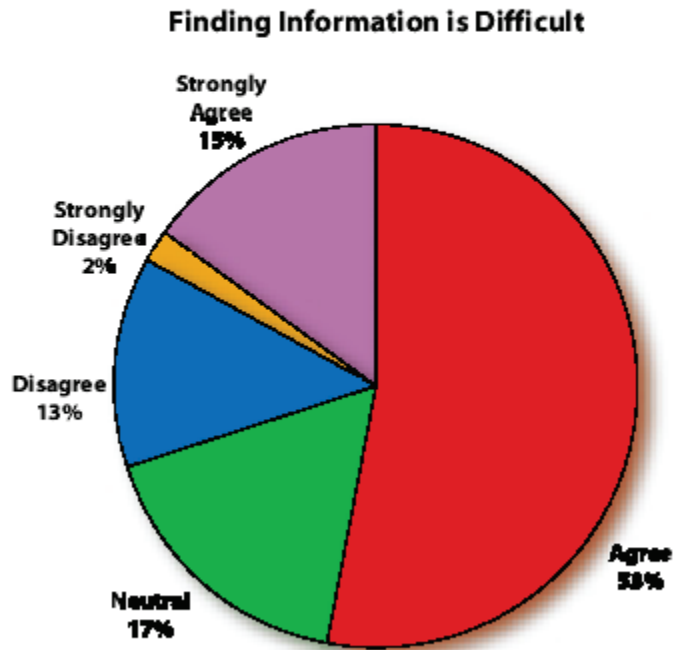
Delphi Group breaks up portals into

- Content management
- Enterprise search
- Taxonomy management
- Single sign-on
- Business process management
- Instant messaging
- Collaboration
- Directory services

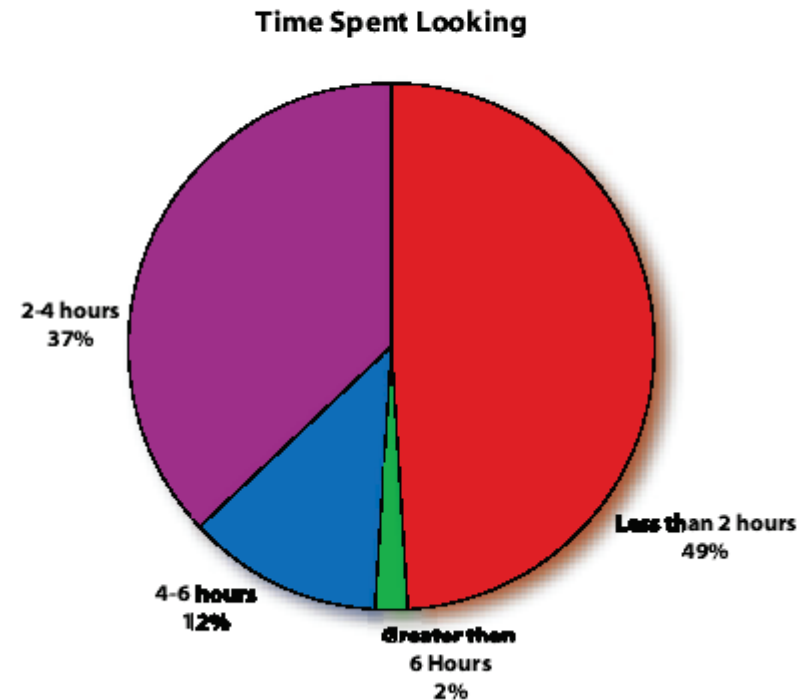
Delphi Group Survey

450 respondents (managers), companies with more than \$100 million, North America

Question #1 – "Finding the information I need to do my job is difficult: agree – disagree"

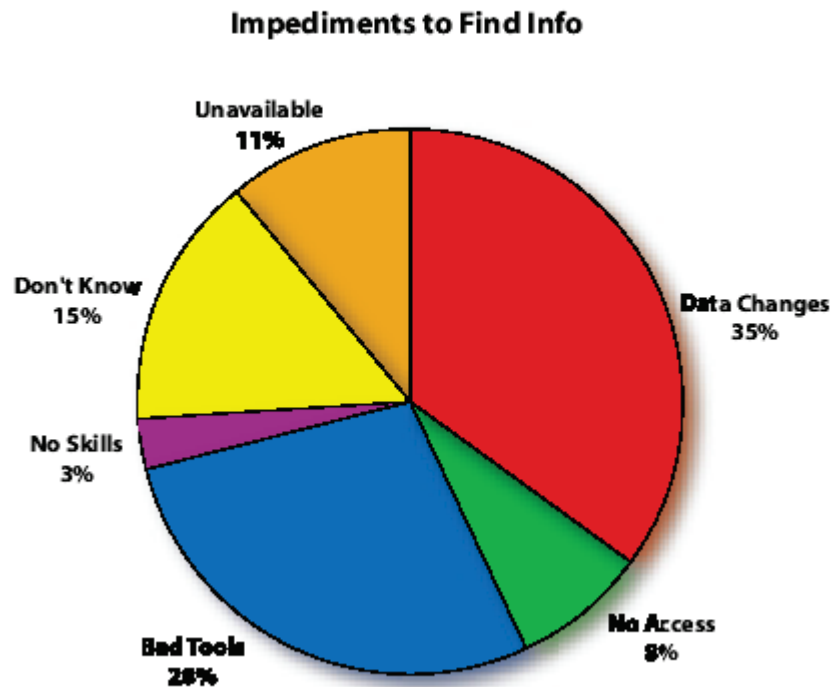


Question #2 – "How much time do you spend each day searching for information that is critical to your job performance?"

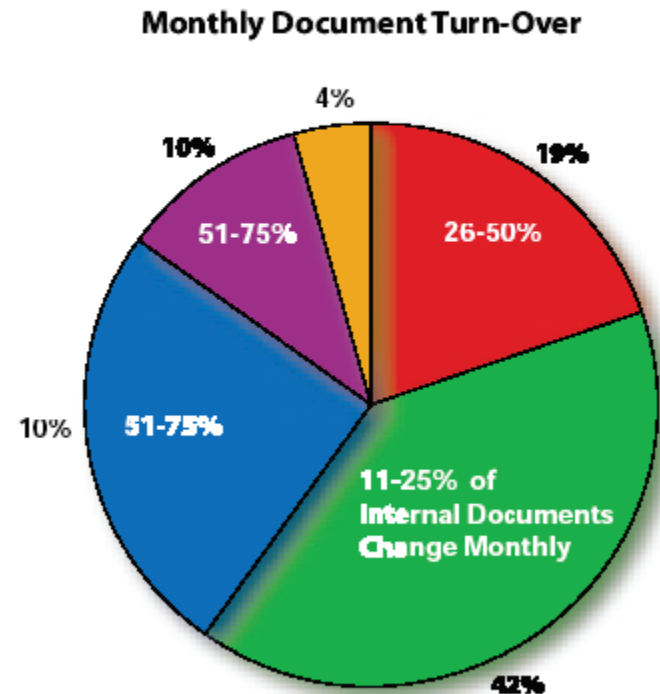


Delphi Group survey, more

Question #3 – "The biggest impediment to finding the information I need to do my job is:"



Question #4 – "What percentage of unstructured data changes at least monthly?"

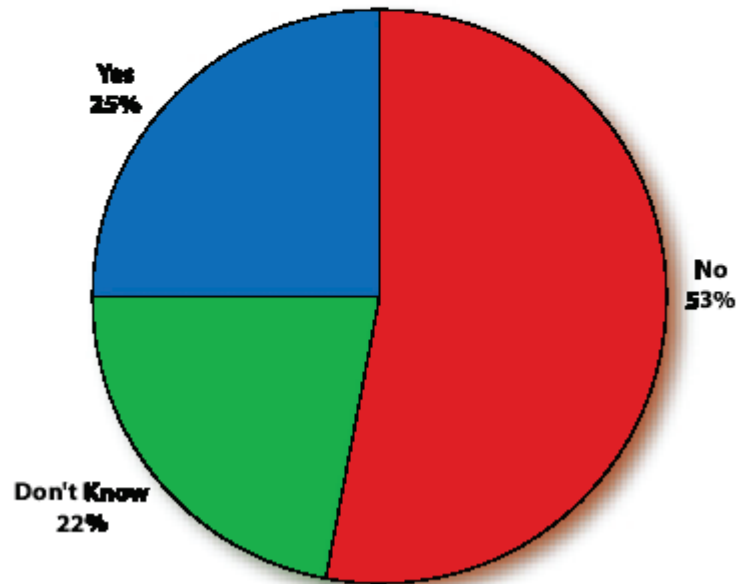


Delphi Group survey, more

Question #7 – "Is anyone in your organization working with taxonomy software today?"

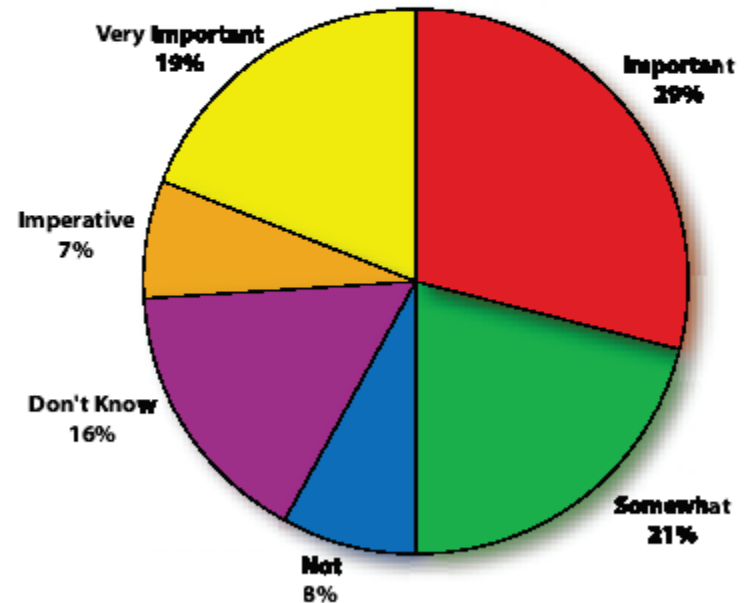
Over 75% of the respondents either don't have or

Working With Taxonomy Software



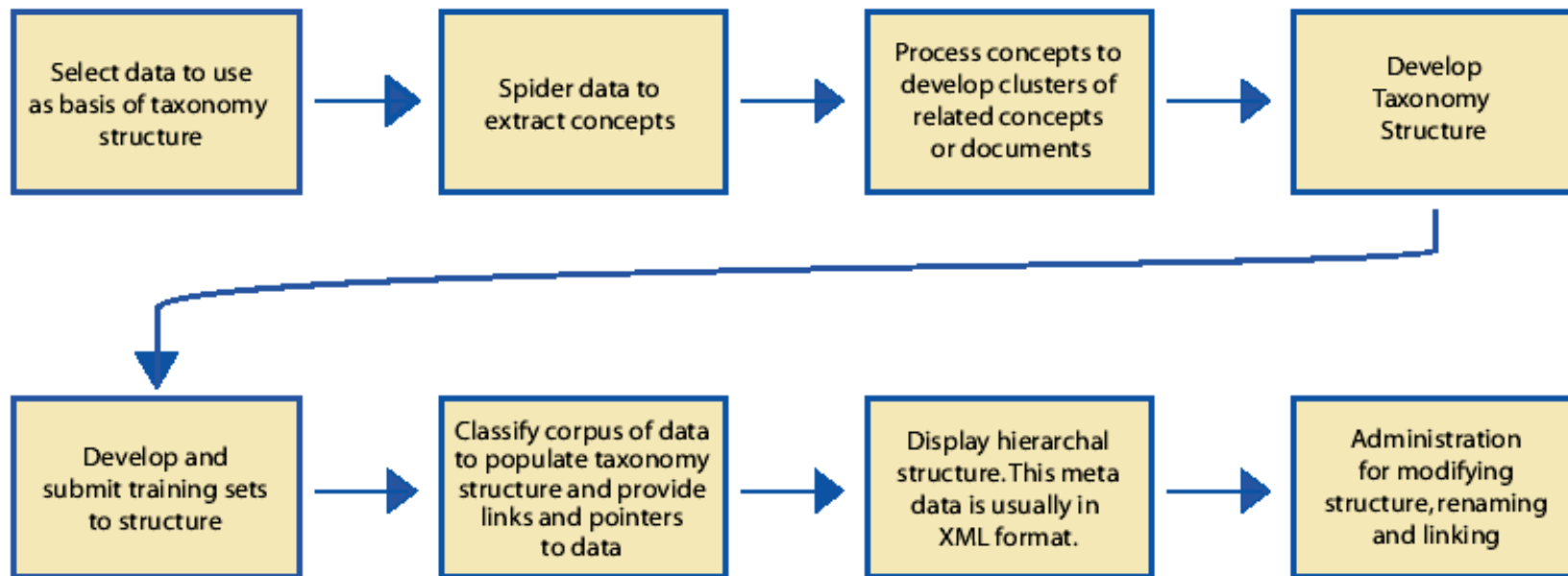
Question #8 – "How important is taxonomy software to your organization's business strategy?"

Taxonomy Important to Business Strategy



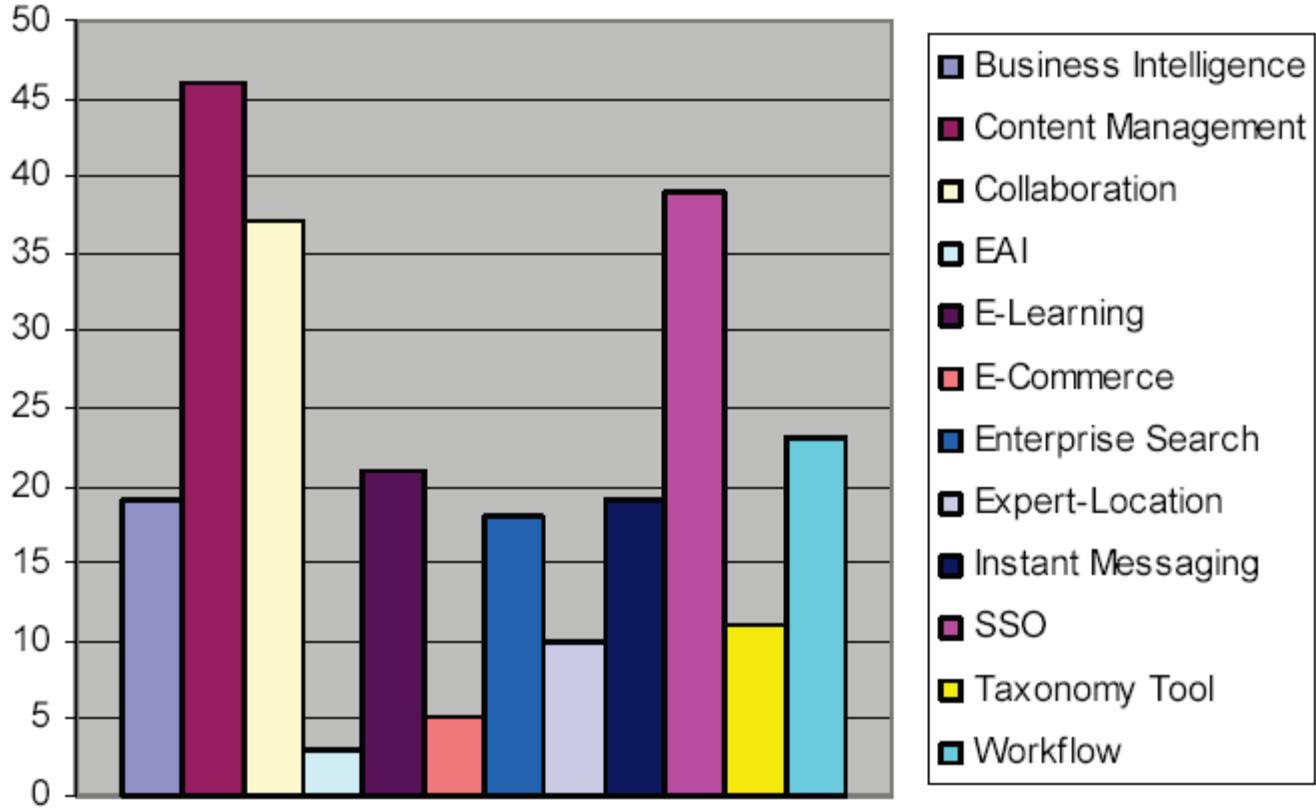
Process for taxonomy software

Source: Delphi Group

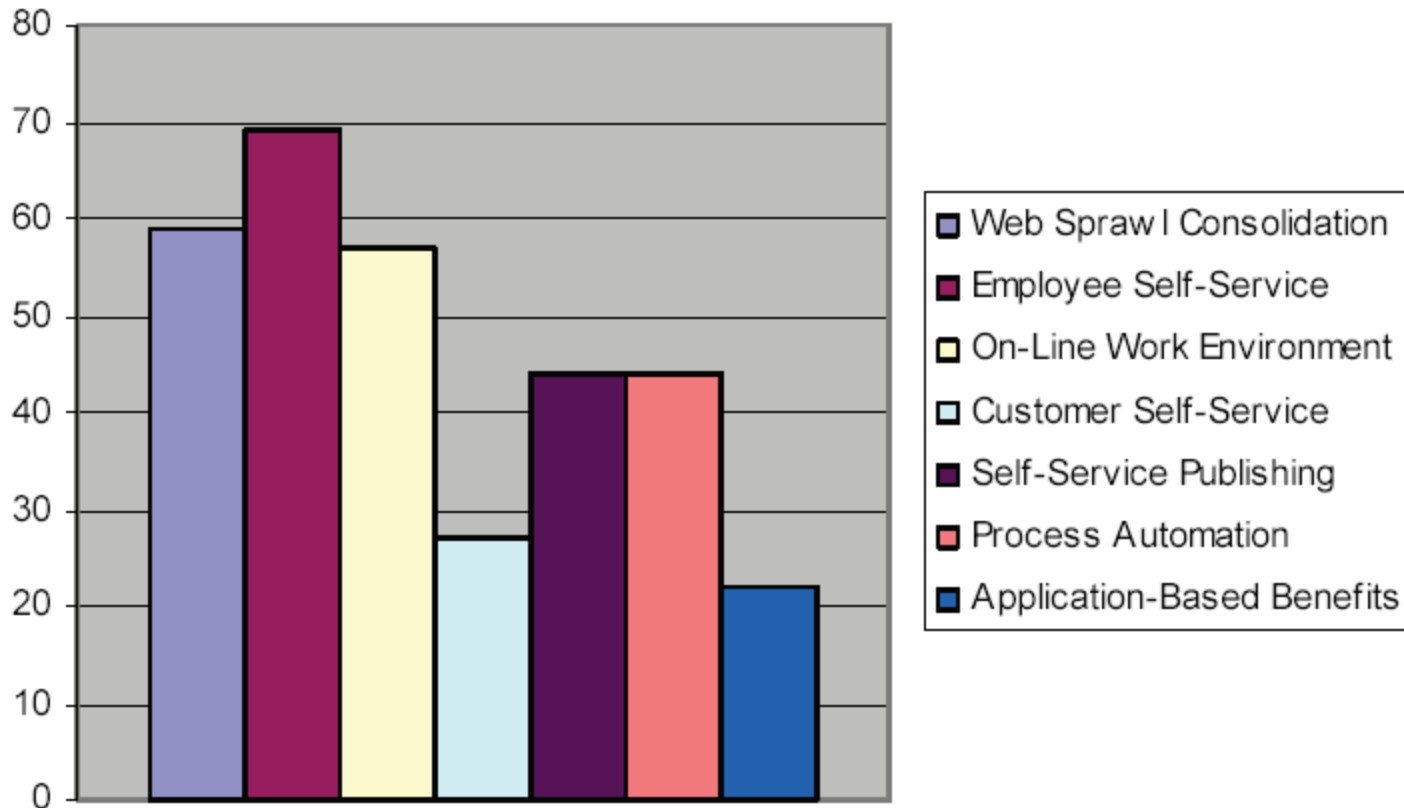


Some statistics from Plumtree research

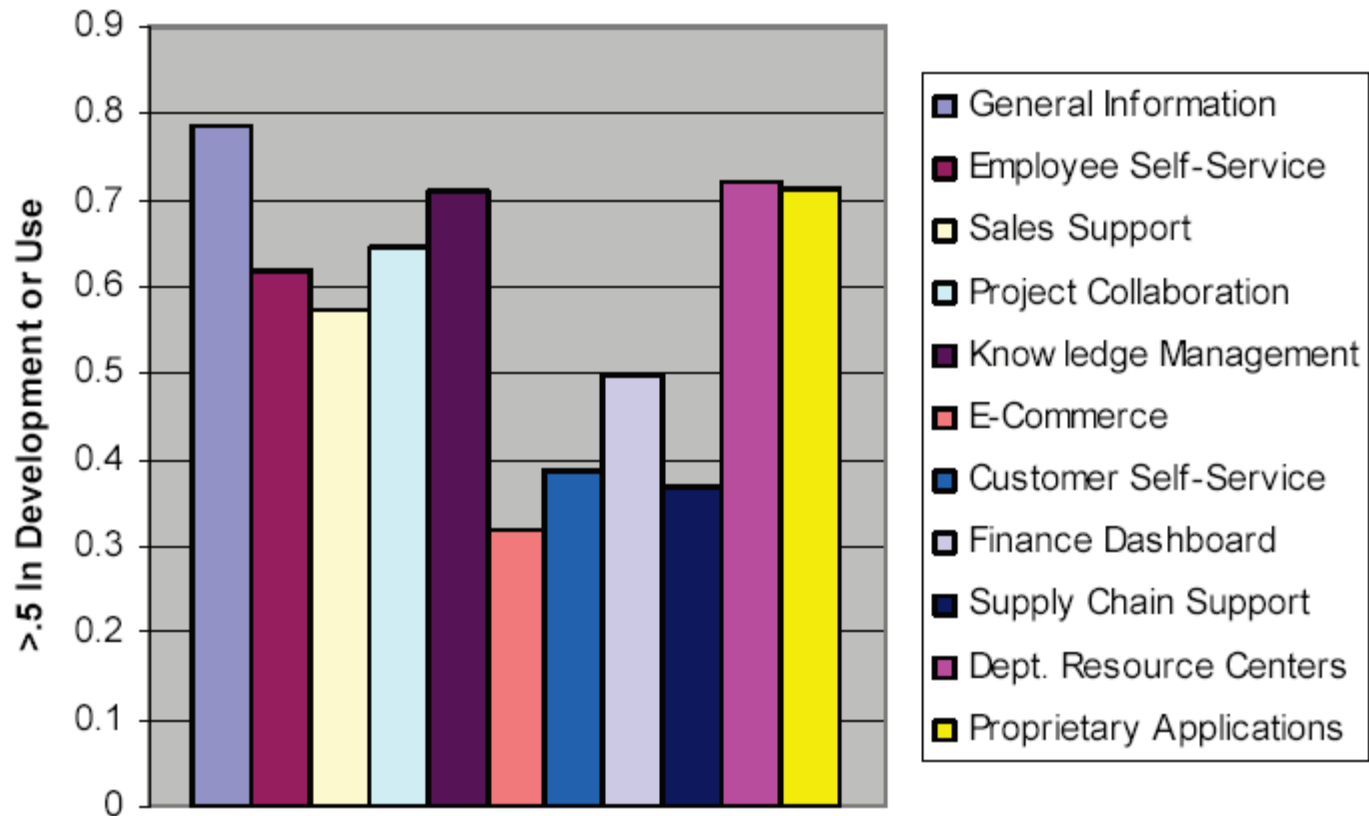
Technologies companies buy in portals



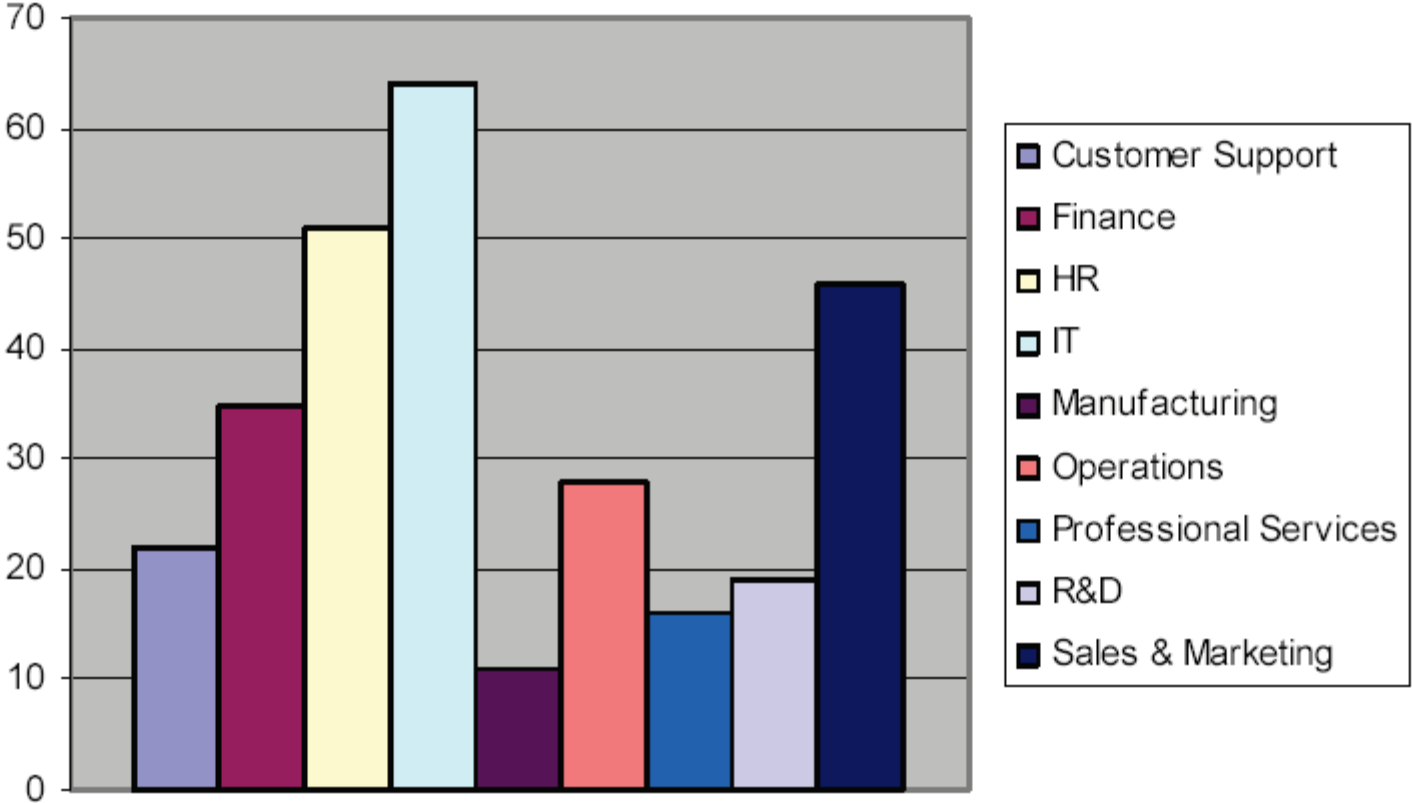
Why companies buy portals



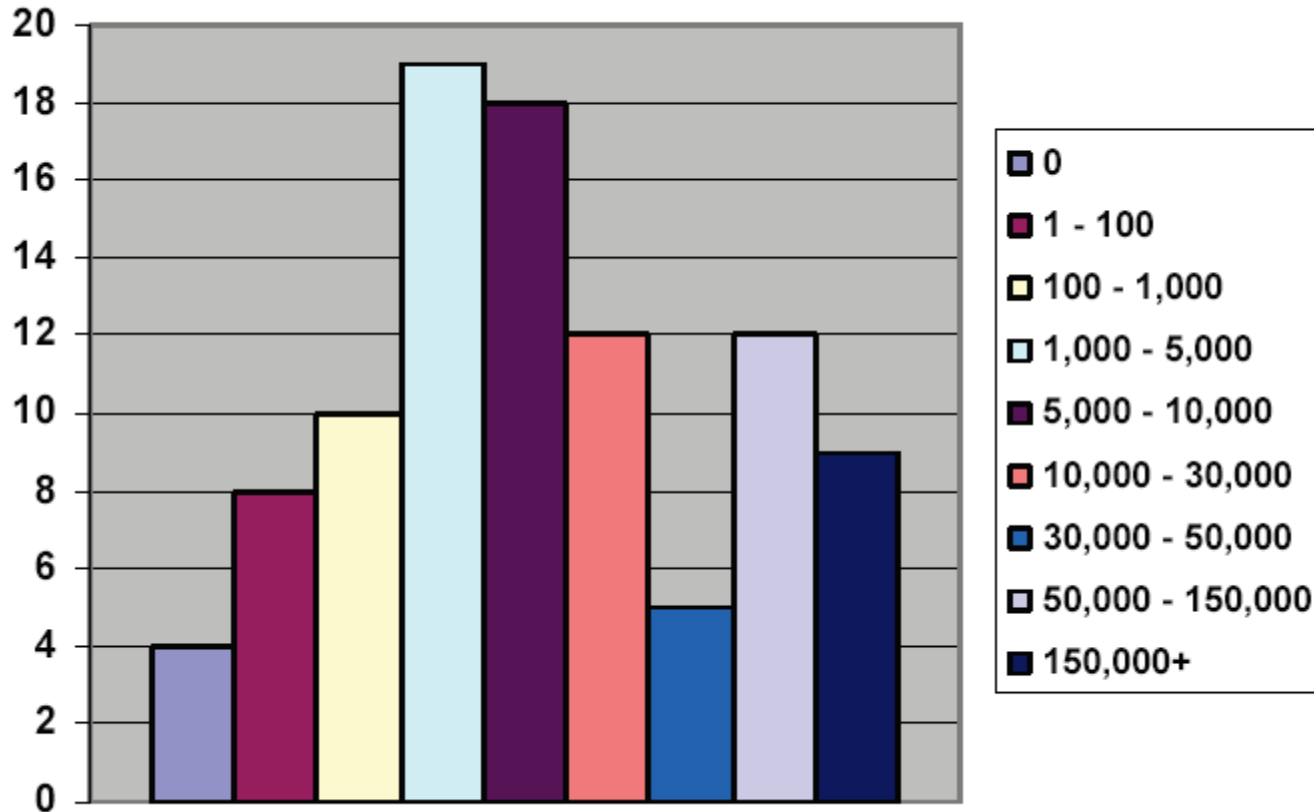
Functions in portals



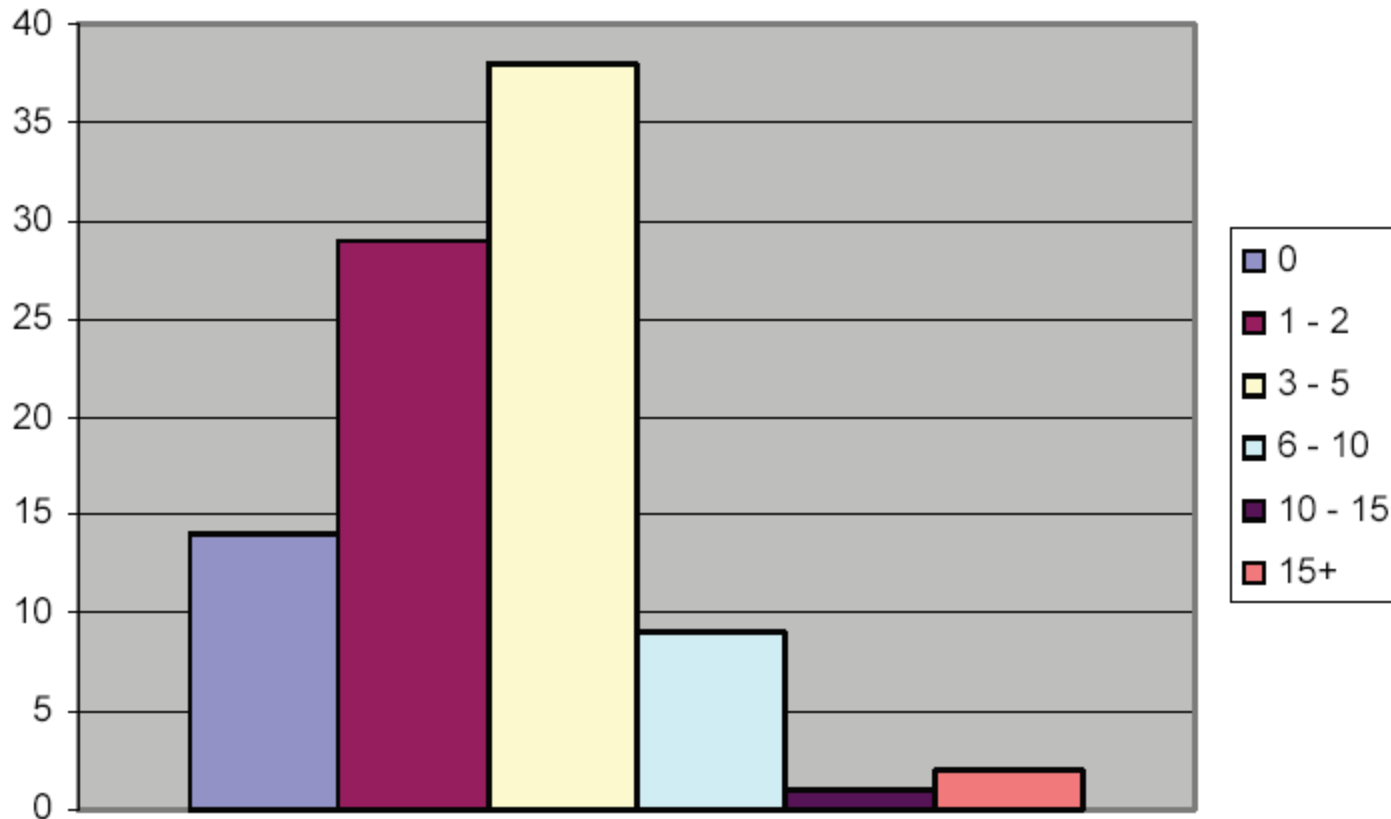
Who deploys portals?



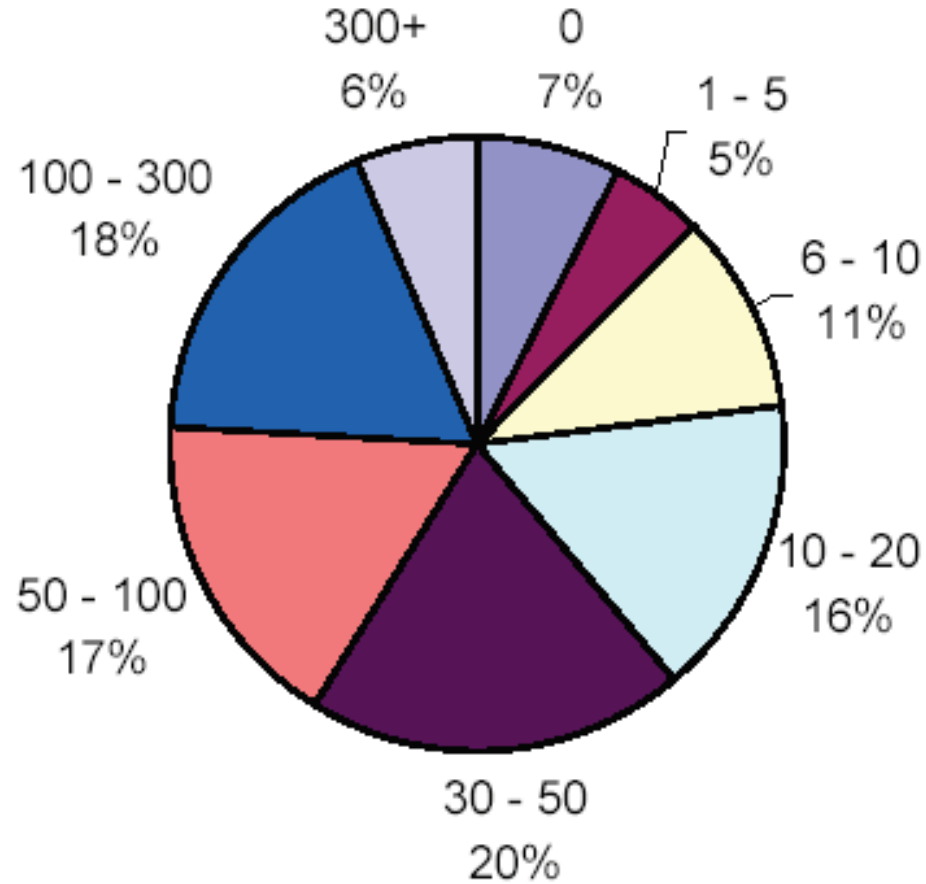
Number of documents indexed in a portal



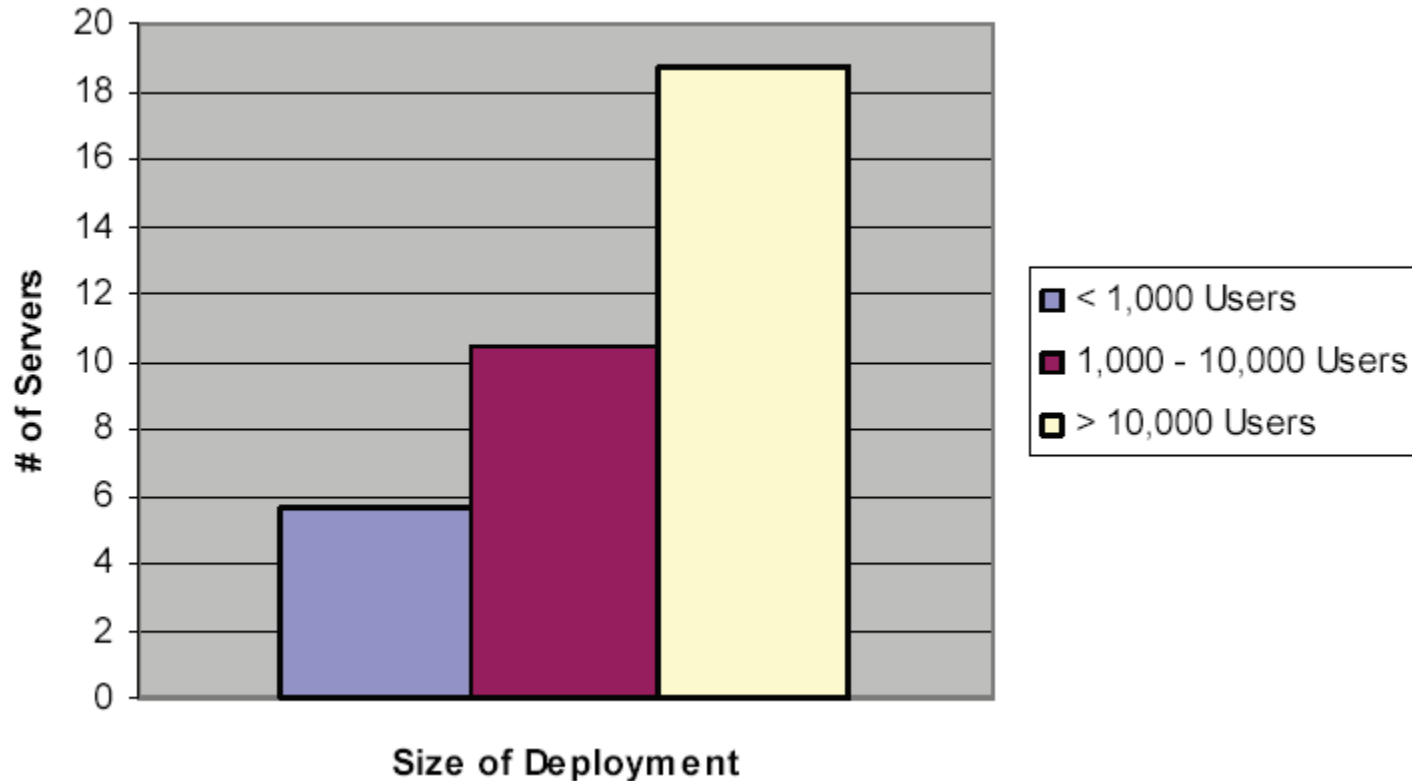
Number of commercial applications in a portal



Number of portlets in a portal

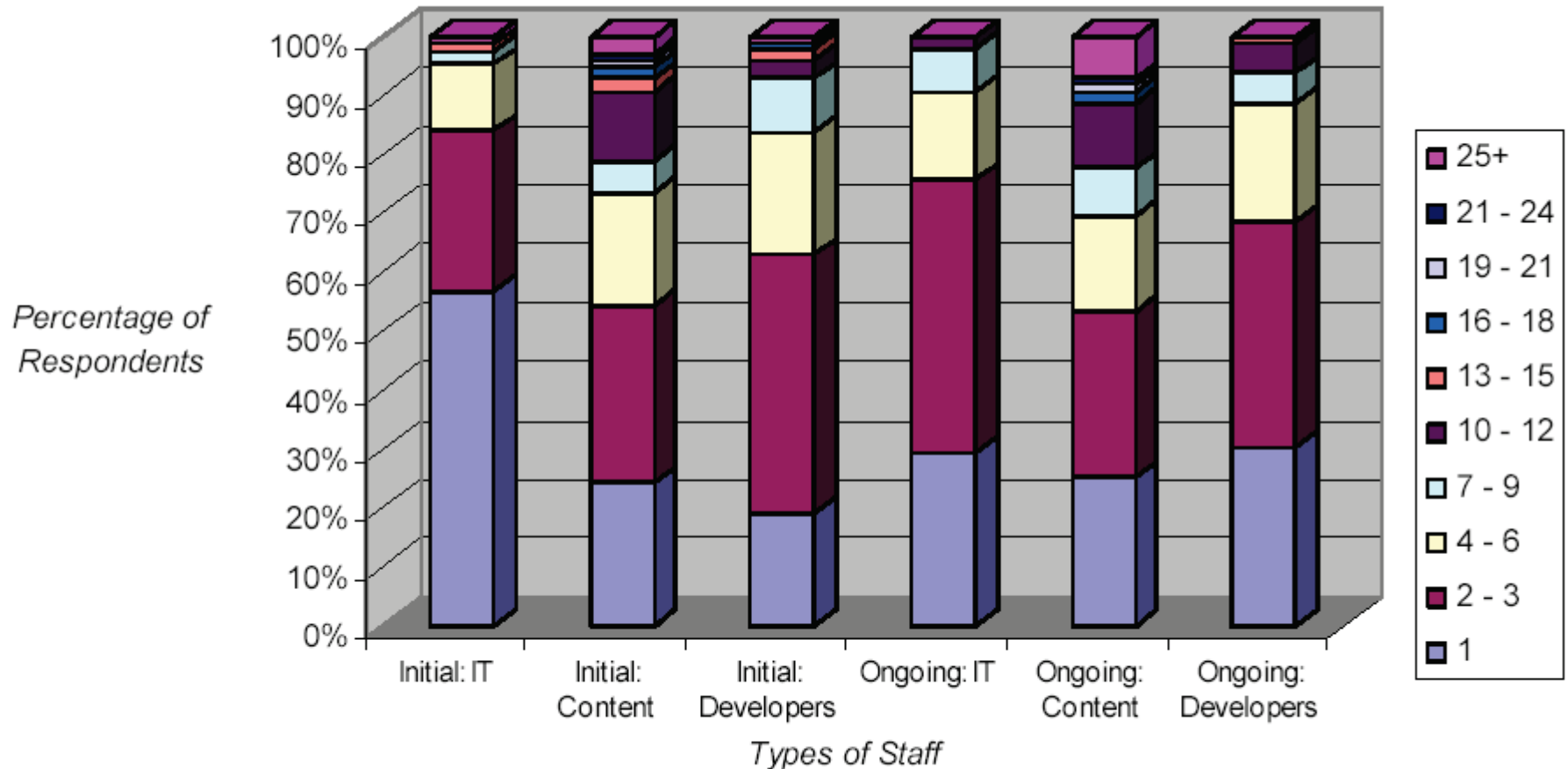


Number of servers running a portal



Deployment Size	Users per Server
Less Than 1,000 Weekly Users	55
1,000 - 10,000 Weekly Users	375
Greater Than 10,000 Weekly Users	2,610

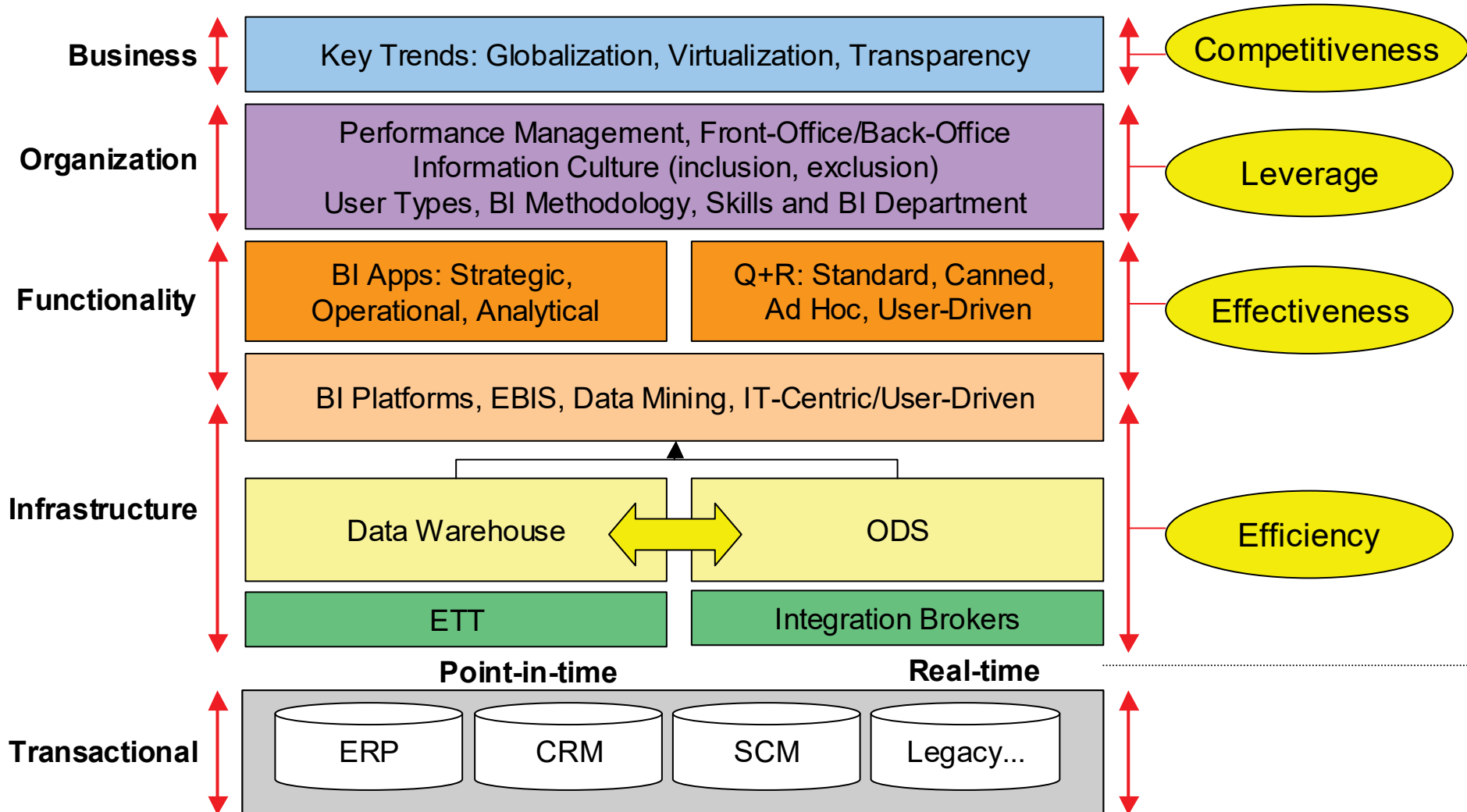
Staff required to maintain a portal



Portal development issues

- Conceptual architecture, integration
- Single sign-on
- Security: access and rights, LDAP and directory services
- Web services architecture
- Consumption of knowledge and knowledge turnover

Intranets, corporate portals, more



Enterprise application integration

- Allow multiple applications to talk to each other so the user finds them easier to use
- Various ways of providing integration
 - Message oriented middleware (MOM)
 - Extraction, transformation and loading (ETL)
 - Web services, SOAP, XML, UDDI
 - Object interfaces (EJB, RMI, CORBA, COM)
 - Direct data access (SQL/ODBC)

Integration Factors

- Heterogeneity
 - Networks
 - Computer hardware, operating systems
 - Programming languages, implementations
- Openness
 - Published interfaces
- Security
- Scalability
 - Lots of data or small amount of data
- Failure handling
- Transparency
 - Access (local, remote), location, concurrency, replication, failure, mobility of clients & resources, performance
- Time
 - Real time versus non real time
 - Synchronous versus asynchronous

Plumtree Gadget issues

- Plumtree is participating in the development of two portlet standards, Java Specification Request (JSR) 168 and Web Services for Remote Portals (WSRP). Other vendors include
 - Accenture, Apache Software Foundation, BEA, Boeing, Borland, Bowstreet, Cap Gemini Ernst & Young, Citrix, Computer Associates, CoreMedia, DaimlerChrysler, Documentum, Enformia Ltd, Epicentric, Hewlett-Packard, Interwoven, Macromedia, McDonald Bradley, Oracle, SAP, Silverstream, Sybase, Tarantella, Inc, Vignette
 - Specifications to be complete in 2003, both of which are still being specified.

see <http://www.jcp.org/en/jsr/detail?id=168>

- Plumtree currently supports SAP MiniApps and Microsoft Web Parts as Gadget Web Services.

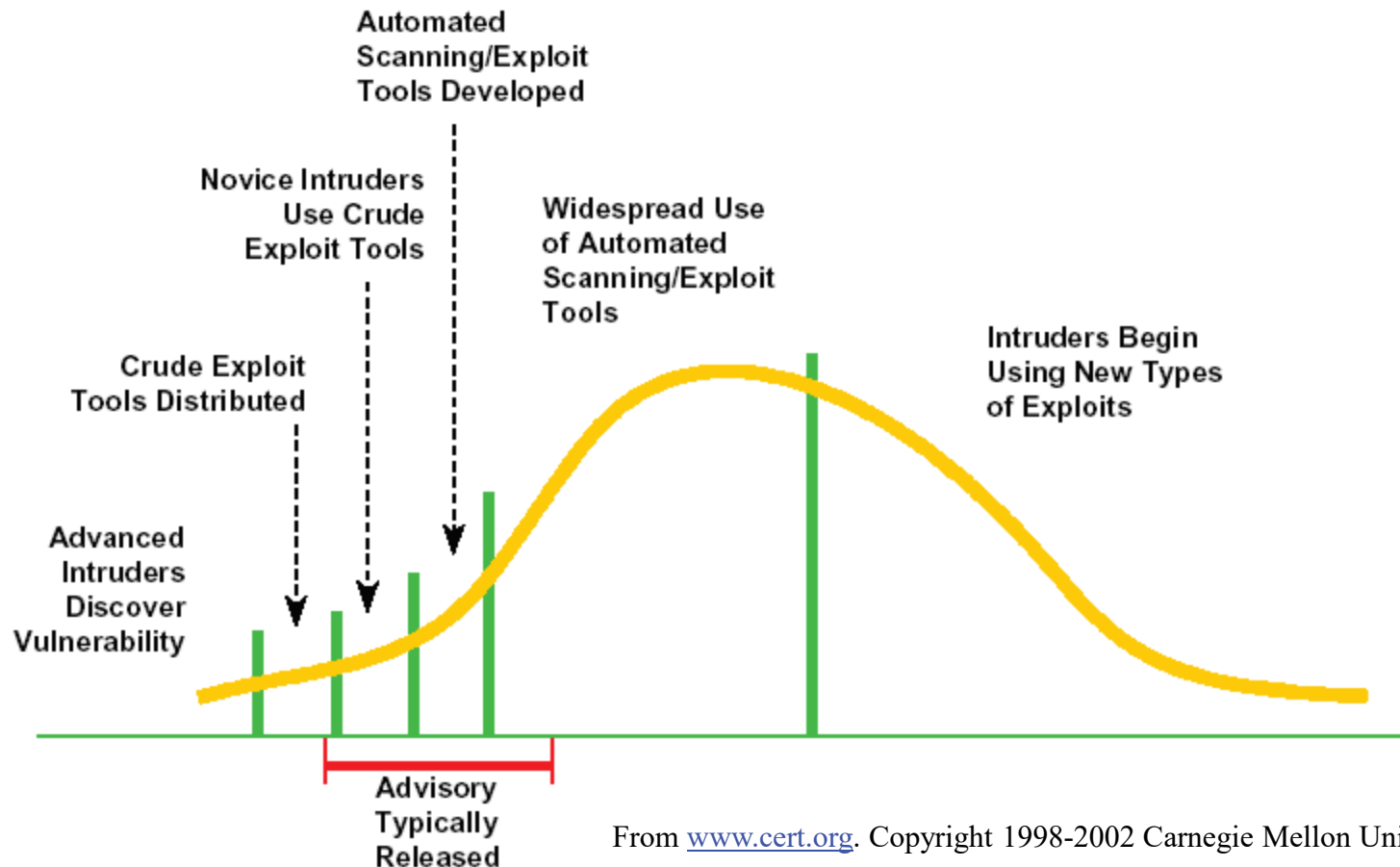
Single sign-on

- Usually ranked as a top feature, I am still looking for evidence from users that ranks this as high as technologists do
- With LDAP and directory services, this is achievable
- A related concept, single logon, is not done, to my knowledge
 - Single-login passes the computer login (Windows 98/2000/XP) and passes it to the portal LDAP/directory services layer so NO OTHER password is needed

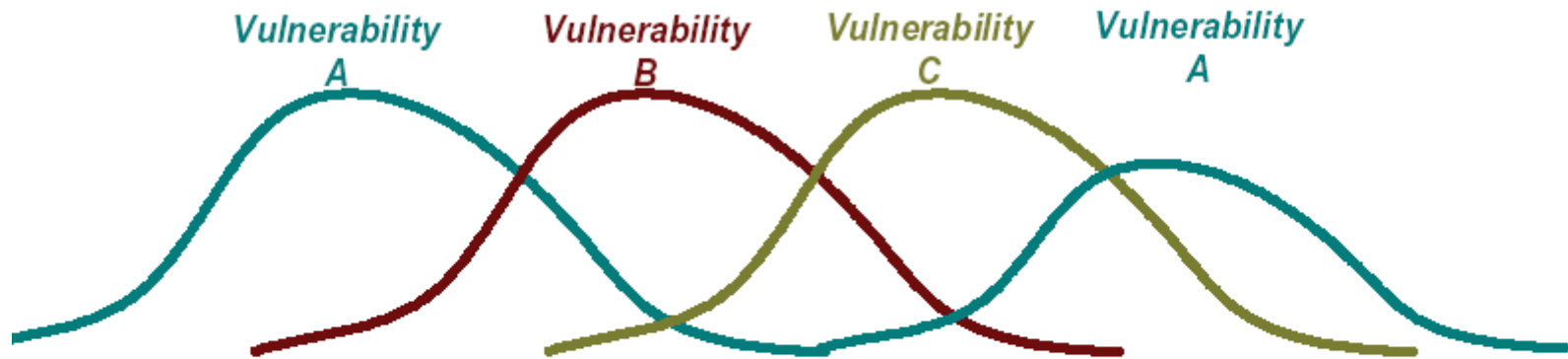
Security issues

- Levels
 - Access to the service
 - Rights within the service
- Layers
 - It is possible to have multiple layers of authentication (Portal LDAP, Microsoft ADS)
 - The portal platform will try each layer to authenticate a user
 - For complex security schemes
- LDAP and directory services
 - These tools are extensible. You can add all sorts of aspects to them.
 - Problem: some apps have very unique security requirements. How much to you extend your directory service versus replicate security info?

Security breaches: exploitation curve



Old vulnerabilities can resurface



From www.cert.org. Copyright 1998-2002 Carnegie Mellon University

Web services architecture

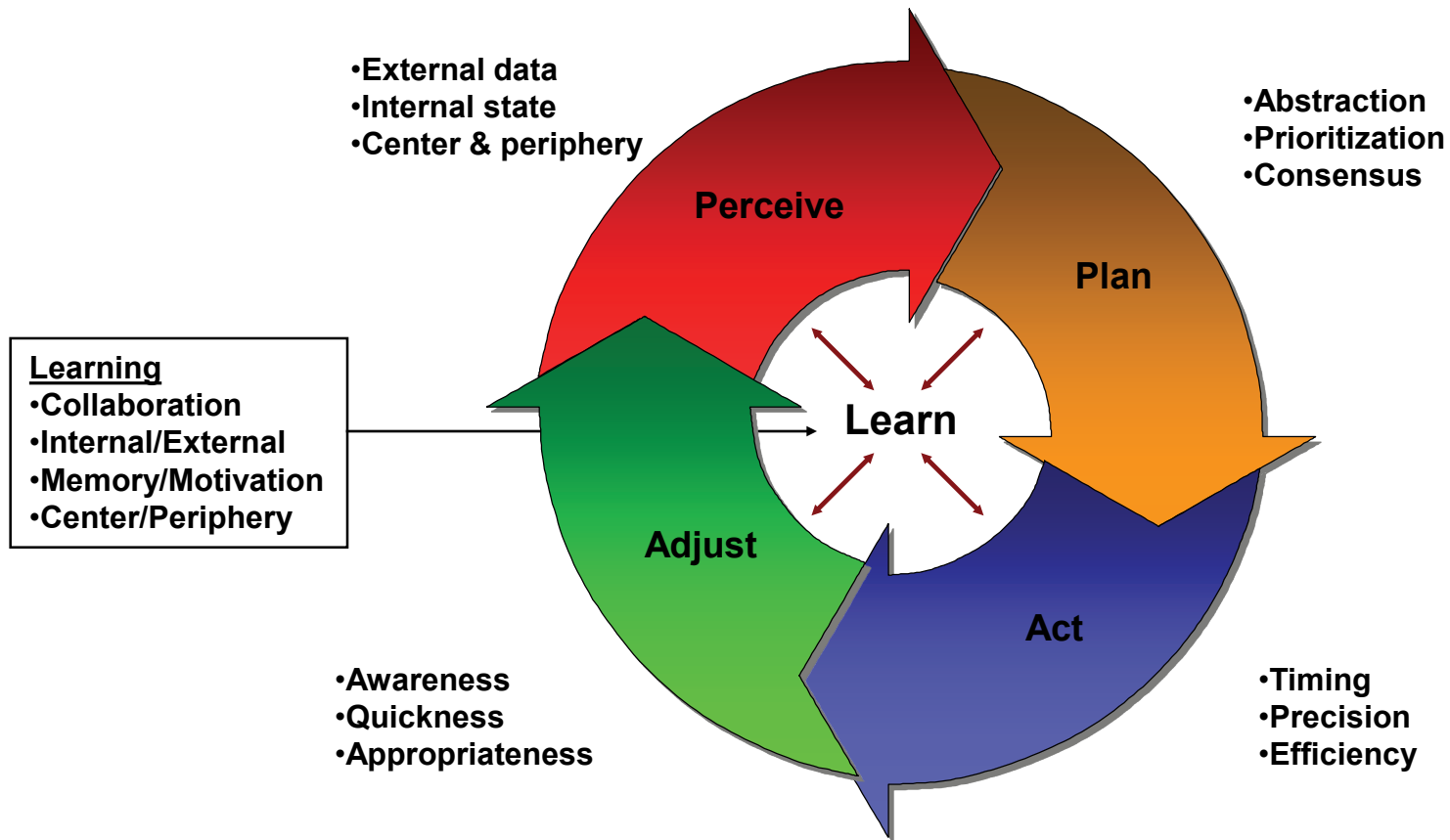
- Web services pushed program-to-program communication up from the TCP/IP protocol to the HTTP protocol. This is intriguing, because with a simple tool like Notepad, one can do distributed programming
- Prior distributed programming, like Java RMI or Microsoft DCOM, requires the developer to setup the client and server with similar compilers, stubs, object calling techniques
- With web services, developers only need to know the XML specification for invoking a remote service and handling the response from the service
- What does this mean? Rapid increase in the number of distributed programs written
- What are the consequences: More hardware, more network bandwidth will be needed. Web services is a “heftier” protocol
- Portal packages that rely on web services architectures (Plumtree, PeopleSoft), will require more servers and pipes between servers. The bandwidth between the client and the server should remain the same or be slightly less

Consumption of knowledge

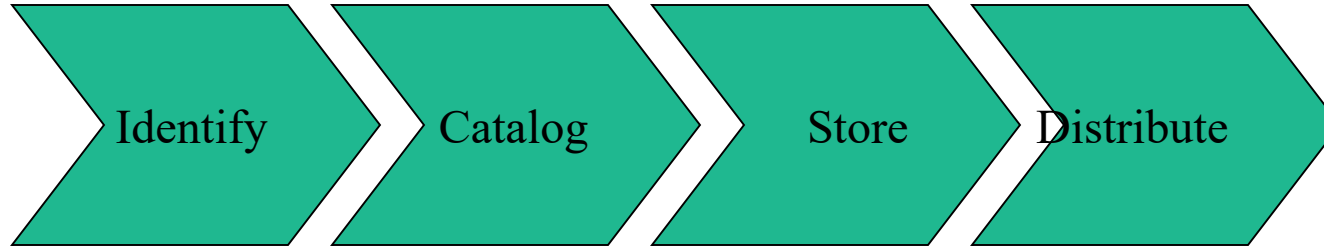
- Producing content, while still not done well, is relatively easy. One can produce copious amounts of content
- Distributing content is easy. It is nearly free to distribute over the web
- Getting content consumed is a human, social complex process involving:
 - Getting explicit knowledge (documented knowledge) converted into tacit knowledge (knowledge inside one's head that enables skill)
 - Understanding learning styles, motivation
 - How groups of people communicate with each other and share and create knowledge
 - Why groups and people engage in defensive behavior which can be anti-learning

Knowledge turnover

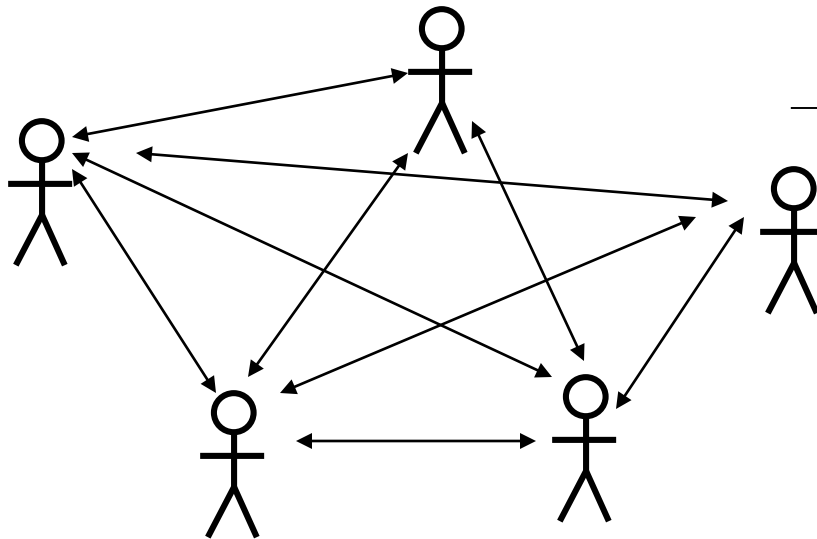
Business Response Management



Knowledge chain or knowledge network?

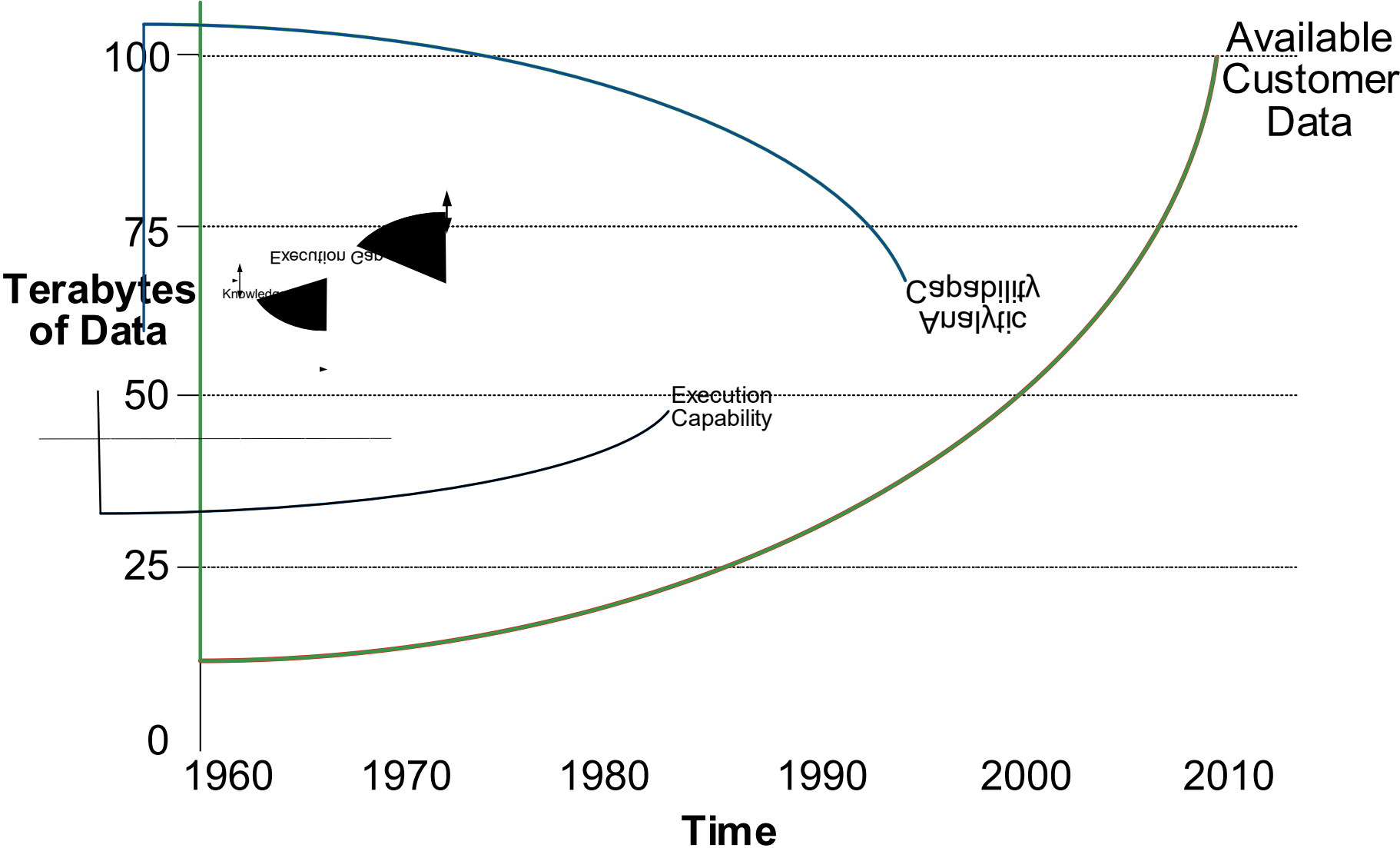


Or



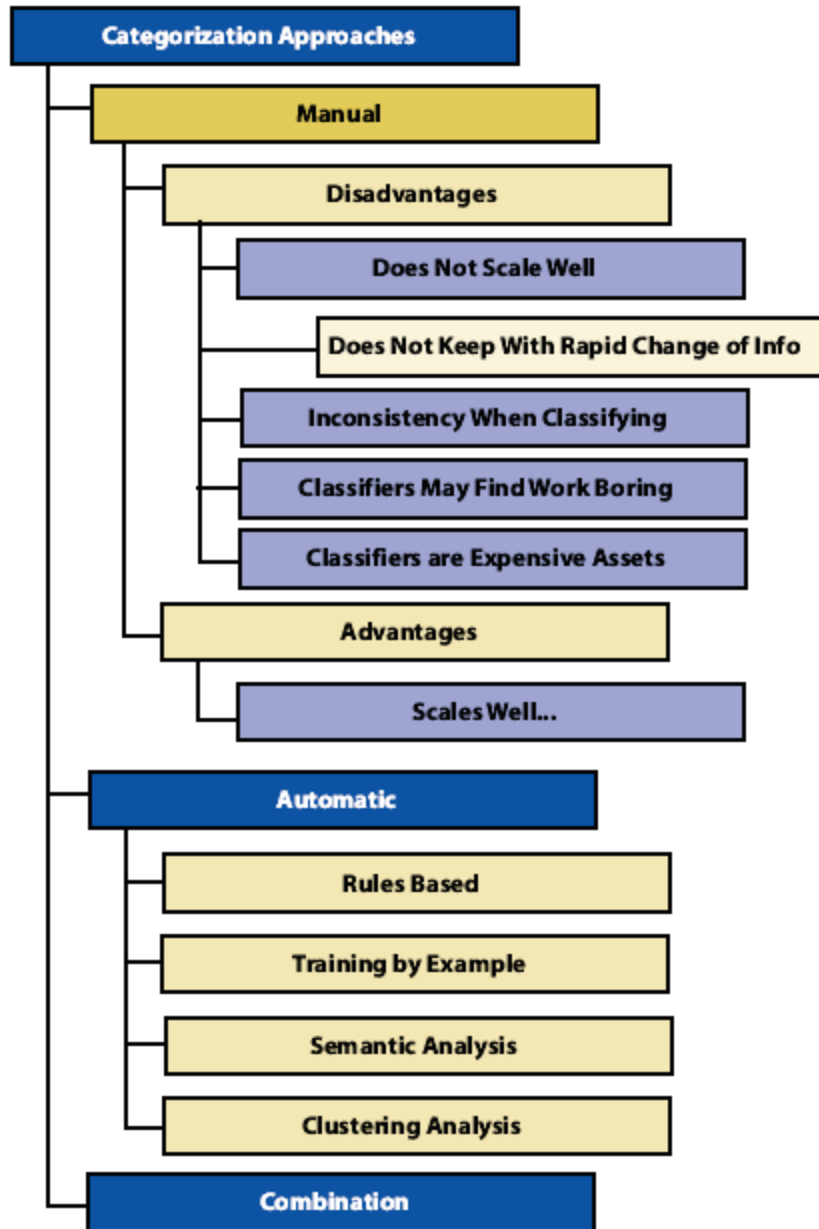
What is the precise sequence of interactions that produces the knowledge needed by the organization? What comprises the interactions? Can you repeat the sequence each time? What rules govern the sequence?

Knowledge gaps



Source: Gartner

Taxonomies



- Manual and automatic means for creating taxonomies have pros and cons
- Taxonomies can have a significant impact on search speed

Source: Delphi Group

Closing the gaps

- The knowledge gap can be closed through data mining, analysis, and aggregation of data. Closing the knowledge gap requires smart employees skilled in these areas
- The execution gap can only be closed through the human and social side of knowledge management and through a working decision-making process
- The execution gap is a difficult problem requiring multidisciplinary skills
 - Cognitive sciences, psychology, education
 - Business strategy
 - Organizational development and change
 - Financial and business process measurement skills

Implementation issues

- Critical mass of content to be produced and maintained
 - Identify internal, external content needed to drive use
- Critical mass of users who see enough functionality to make the transition to a portal worthwhile
 - Need to break down walls between functional units if collaboration is important
- Usability analysis and time to get the features and navigation right
 - Must get it right the first time
- Testing and performance analysis to ensure the response time is fast enough
 - Interactive knowledge workers have a need for fast response speeds The difference between 100 ms and 900 ms can be enormous
- For web services architectures, get an understanding of performance profiles early
 - Plan scalability first thing
- Instrument the portal site to identify production/consumption metrics

More implementation issues

- Plan the integration with existing technology
 - E-mail, calendars, file sharing, discussion groups, access to applications, authentication
- Determine which new technologies make sense
 - Chat and instant messaging, wireless access, workflow and business process control
- Ensure you have the right middleware integration
 - ETL for data warehousing, MOM for general purpose, transaction oriented messages, LDAP for access to security and access info
- Get your architecture right
 - POP3, IMAP4, SMTP, NNTP, IM, LDAP, Web services, etc.
 - Get all applications to cooperate via standard interfaces. Phase out older, non complying software

Coordinate with business users

- Find leaders in the business side of the organization to champion the portal
- Keep community involvement high, plan training early
- Plan the evolution of the portal early
- Identify critical risk/success factors early and build plans to address
- Develop a good ongoing communication protocol/plan
- Identify ownership issues, debates early and work through them
- Ask the question over and over:
 - “How will the intranet site make the organization successful”
 - Prove the statement out

Questions?

Thank you!