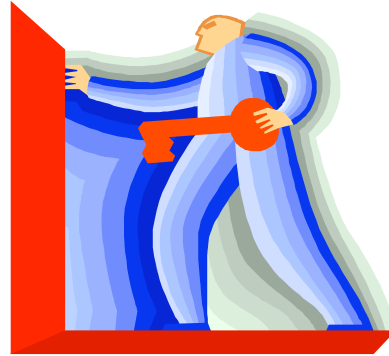


7. XML-based Portals

- Effort wasted on code/coding
- Extending data management technology reach to include previously unstructured data
- Opportunities to make data quality initiatives visible
- XML-based Portal advantages
- ERP Example



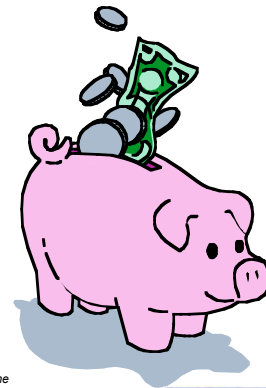
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A Legacy Example

- Cash Management System (CMS)
Functional Summary
- Supports check processing and other specialized services for large corporate customers:
 - Zero balance account
 - Reconciliation of cleared checks
 - Electronic funds transfer (Swift)
 - Lock box operations
 - On-line query facility
 - Cost: \$16 M/annually



Example from: Michael L. Brodie & Michael Stonebraker *Migrating Legacy Systems: Gateways, Interfaces & The Incremental Approach* Morgan Kaufmann Publishers, 1995

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CMS Technical Overview

- Most built in 1981 - 100 gigbytes
- 40 software modules
- 8 million lines of code
- COBOL/CICS/VSAM on IBM 3090
- Federal Reserve Bank connection Tandem (TAL)
- Lock box uses VAX (C)
- Processes 300,000 transactions daily & 1-2 million checks nightly
- Generations of programmers



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Peeling

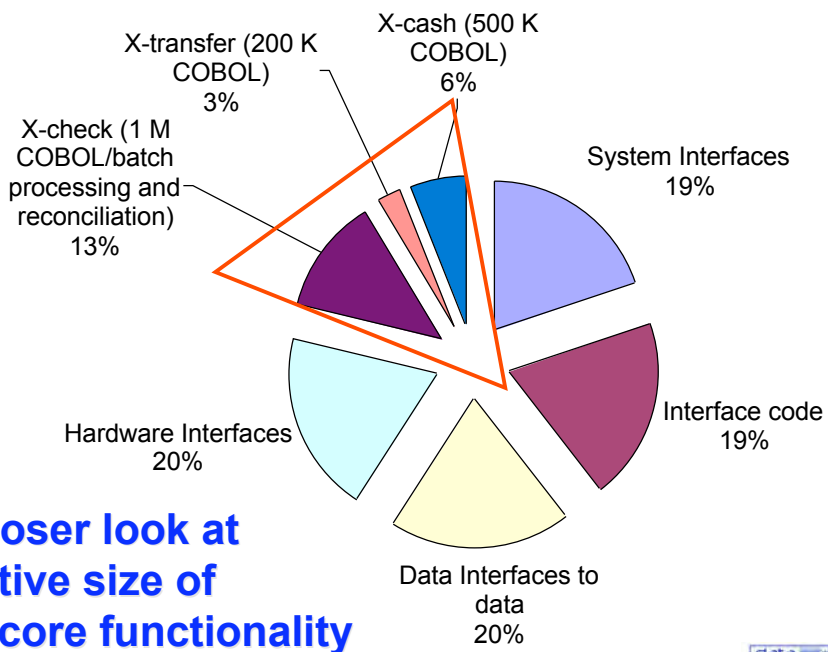
- 80 - 20 rule
- Slice away 6.3 of 8 LOCs as non-key functionality
- Xcheck (1 M COBOL/batch processing and reconciliation)
- Xtransfer (200 K COBOL)
- Xcash (500 K COBOL)
- Remainder
 - interfaces to other organizational parts
 - interface code
 - Interfaces to data
 - Interfaces to hardware (Check sorting hardware)



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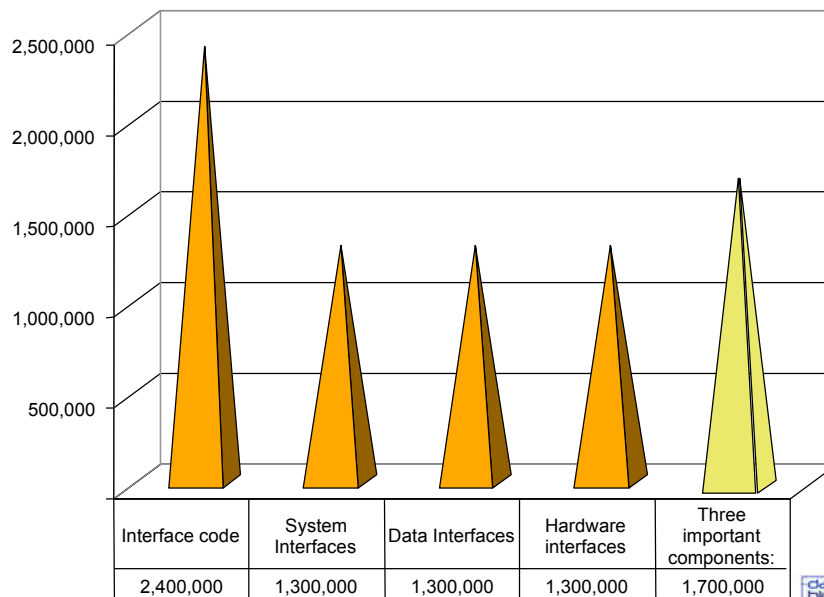
A closer look at relative size of the core functionality

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Another perspective (what's bigger than the combined "important" components?)

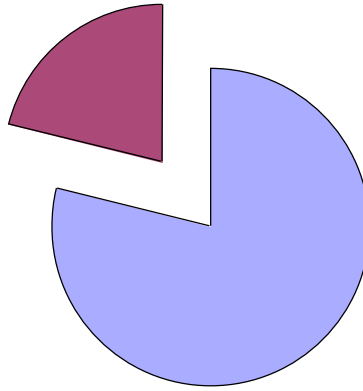


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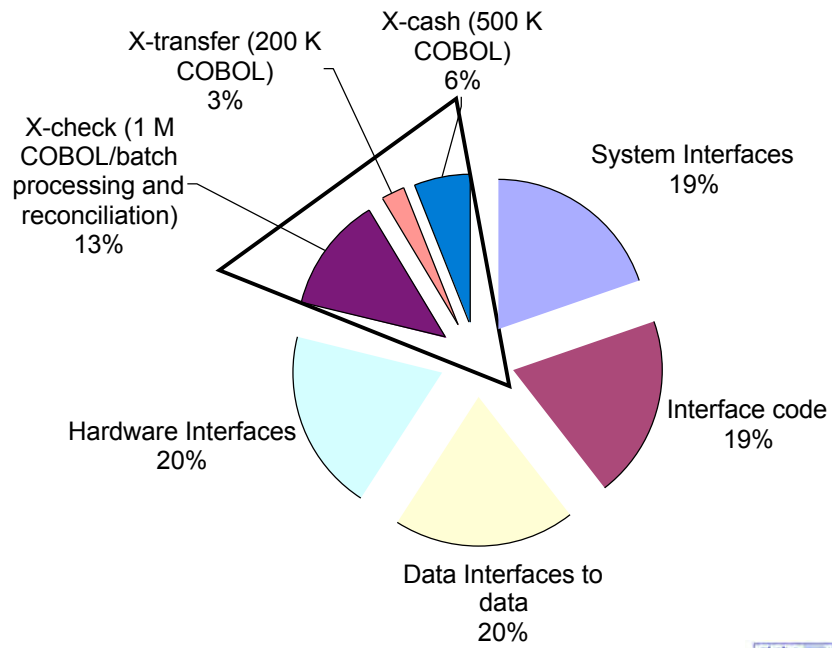


Business logic is contained in just 21% of the code



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Portal/Web Services

Integration Possibilities

- User Interface
- Business Process
- Application
- Data

AV Component

- Well defined components
- Self-contained
- No interdependencies



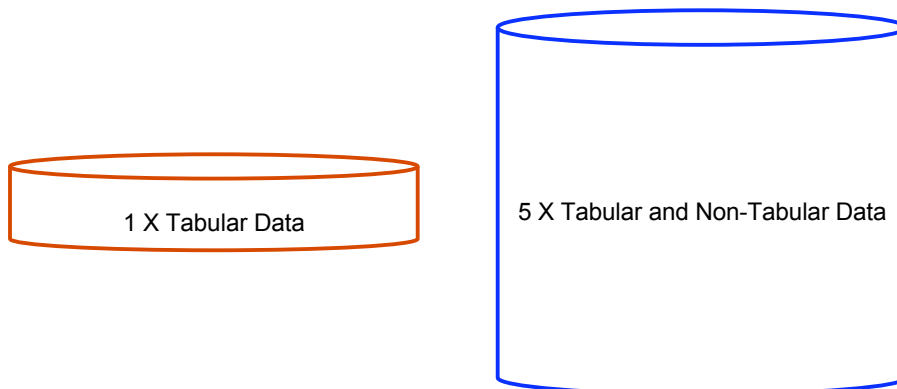
Analogy derived from D. Barry "Web Services" Intelligent Enterprise 10/10/03 pp. 26-47

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Increasing Scope and Volume of Data Management

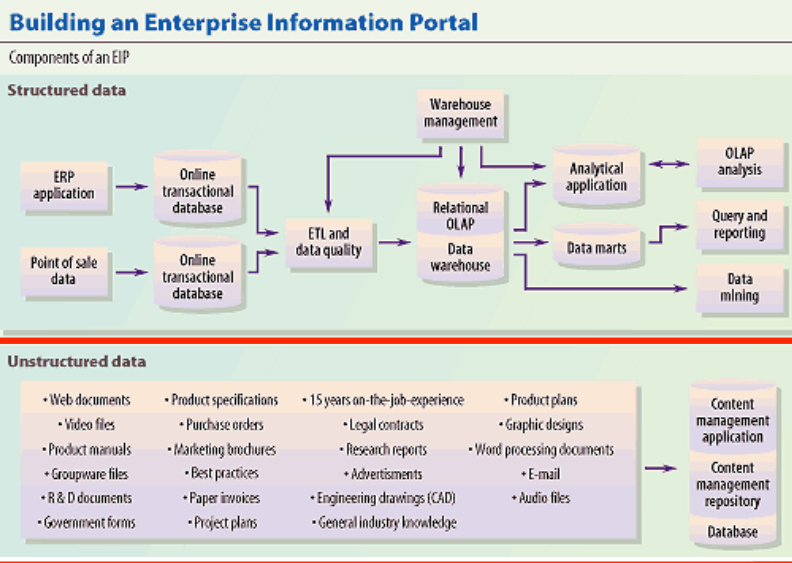


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Data Management Technology Reach

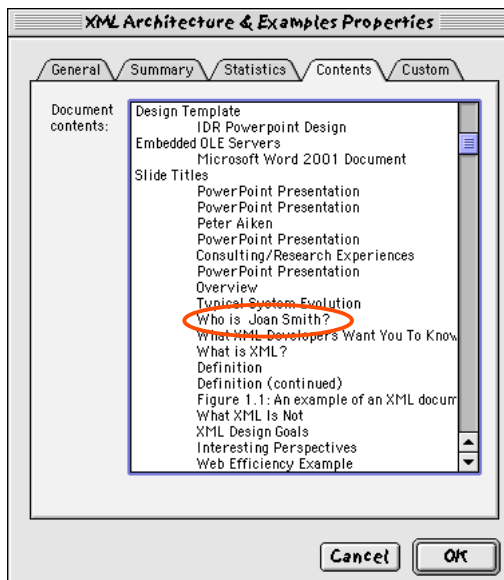


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Integration of Unstructured Data



- Properties selection under the file menu of MS-Office 2000 +
- Queries can be run for slide titles or other document structures

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```

<?xml version="1.0"?>
<Workbook xmlns="urn:schemas-microsoft-com:office:spreadsheet"
  xmlns:o="urn:schemas-microsoft-com:office:office"
  xmlns:x="urn:schemas-microsoft-com:office:excel"
  xmlns:ss="urn:schemas-microsoft-com:office:spreadsheet"
  xmlns:html="http://www.w3.org/TR/REC-html40">
  <DocumentProperties xmlns="urn:schemas-microsoft-com:office:office">
    <Author>KIHNEK</Author>
    <LastAuthor>Brian Magick</LastAuthor>
    <Created>2001-08-31T18:43:42Z</Created>
    <LastSaved>2001-11-13T20:07:24Z</LastSaved>
    <Company>AIM Management Group Inc.</Company>
    <Version>10.2625</Version>
  </DocumentProperties>
  <OfficeDocumentSettings xmlns="urn:schemas-microsoft-com:office:office">
    <DownloadComponents/>
    <LocationOfComponents HRef="file:///\"/>
  </OfficeDocumentSettings>
  <ExcelWorkbook xmlns="urn:schemas-microsoft-com:office:excel">
    <WindowHeight>9120</WindowHeight>
    <WindowWidth>12120</WindowWidth>
    <WindowTopX>240</WindowTopX>
    <WindowTopY>60</WindowTopY>
    <ProtectStructure>False</ProtectStructure>
    <ProtectWindows>False</ProtectWindows>
  </ExcelWorkbook>
  <Styles>

```

Office XML Example: Class Roster

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Key Knowledge Management Functionality

- **Gather:** Capture in a common repository information and its location from sources important to you so it can be contributed to the group memory
- **Organize:** Profile the information in the repository, organize it in meaningful ways for navigation and searching, enable pieces of information to be related to other pieces of information
- **Distribute/deliver:** Harvest or acquire knowledge, either through an active mechanism (search interface) or a passive mechanism (push)
- **Collaborate:** Collaborate through messaging, workflow, discussion databases ... and so on
- **Teach/learn:** Distance learning
- **Analyze/refine:** Analyze information in the knowledge repository (data mining to identify relationships or patterns)
- **Publish:** Publish information to a broader audience, including individuals outside the organization
- **Lifecycle management:** Securely store, migrate, and purge information after a set period
- **Mediate:** Manage knowledge workers' time

Adapted from DocuLab's Special Report on KM Products, April 2000

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Portal Definitions

- "Envision the enterprise information portal as a browser-based system providing ubiquitous access to business related information in the same way that Internet content portals are the gateway to the wealth of content on the web"
 - [InfoWorld Electric] Web site
- Portals are applications that enable organizations to more rapidly interchange internally and externally stored information, and provide users a single gateway to personalized information needed to make informed business decisions. Portals are an emerging market opportunity; an amalgamation of software applications that consolidate, manage, analyze and distribute information across and outside of an enterprise (including business intelligence, content management, data ware-house and mart, and data management applications).
 - [Merrill Lynch: [SageMaker] Web site]

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Portal Examples

- Corporate Portal or [Enterprise Portal](#)
 - "Single gateway via corporate Intranet or Internet to relevant workflows, application systems and databases – integrated using XML and tailored to the specific job responsibilities of each individual."
- Corporate Portal as "[Employee Portal](#)"
 - All employees can access processes, systems and databases via Intranet or Internet to carry out job responsibilities
 - Full security and firewall protection required
- Corporate Portal as "[Customer Portal](#)"
 - "Single gateway across Internet, or via secure Extranet, to details about products and services, catalogues, and order and invoice status for customers – integrated using XML and tailored to the unique requirements of each customer."
 - Opportunities for one-to-one customer personalization and management – Customer Relationship Management (CRM)
- Corporate Portal as "[Supplier Portal](#)"
 - "Single gateway to purchase orders and related status information for the suppliers of an enterprise."
- Corporate Portal as "[Partner / Shareholder Portal](#)"
 - "Single gateway for business partners or shareholders."

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Portal Motivation

- Portals do for the web what Windows did for DOS



[Adapted from Terry Lanham *Designing Innovative Enterprise Portals and Implementing Them Into Your Content Strategies*
 Lockheed Martin's Compelling Case Study Web Content II: Leveraging Best-of-Breed Content Strategies - San Francisco, CA 23

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Portal Solution



[Adapted from Terry Lanham *Designing Innovative Enterprise Portals and Implementing Them Into Your Content Strategies*
 Lockheed Martin's Compelling Case Study Web Content II: Leveraging Best-of-Breed Content Strategies - San Francisco, CA 23

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XML-based Portals Provide Branding Opportunities

Portal metadata can include:

- Quality attribute measures
- Single source for newly cleansed data sources
- Simplified registry of data uses facilitates information sharing
- Information branding offers increased potential information value

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The screenshot shows a web browser window titled "GSTG Knowledge Window Contents". The address bar contains the file path: "file:///Macintosh%20HD/Ver%20Sites/website/projects/dna/kw/index.html". The browser's menu bar includes "File", "Edit", "View", "Go", "Favorites", "Tools", "Window", and "Help". The page content is organized into three sections:

- Contents:**
 - Enterprise Architecture [Components](#)
 - Enterprise Architecture [Framework](#)
 - Integrated Enterprise and 13 Subject Area [Conceptual Data Models](#)
 - Data AdministrationTasks [Overview](#)
- Context:**
 - [What](#) is the Knowledge Window?
 - How were the architecture components [developed](#)?
 - Tell me [about](#) the Enterprise Architecture?
- Development:**
 - Who [developed](#) the Knowledge Window?
 - Where did that nice piece of [stained glass](#) come from?
 - What latin inside of the orange circle [say](#)?

A vertical stained glass image is positioned on the left side of the page. The browser's status bar at the bottom indicates "Local machine zone".

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File Edit View Go Favorites Tools Window Help

Architecture Framework Overview

Back Forward Stop Refresh Home AutoFill Print Mail

Address: file:///Macintosh%20HD/Web%20Sites/website/projects/dbna/kw/contents/framework/dbtrader/arch/overview.html

Google AltaVista Yahoo! paiken (1) paiken IDR IDR (1) dataware NPR USAir groups eProject DealTime Quicken

Enterprise Architecture Framework Overview

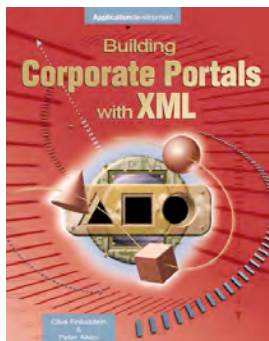
	DATA	FUNCTION	NETWORK	PEOPLE	TIME	MOTIVATION
SCOPE	Entity List	Process List	Location List	Organization List	Major Event List	Objective List
ENTERPRISE MODEL	Enterprise Architecture Data Model	Enterprise Process - Resource - Enterprise Process	Enterprise Location - Enterprise Channel - Enterprise Location	Organization - Work - Organization	Enterprise Event - Enterprise Cycle - Enterprise Event	Objective - Strategy - Objective
SYSTEM MODEL	Conceptual Architecture Data Model	System Process - User View - System Process	Site - Link - Site	Role - Presentation - Role	System Event - System Cycle - System Event	Criterion - Choice - Criterion
TECHNOLOGY MODEL	Data Structure - Referential Integrity - Data Structure	Application - Device Format - Application	Technical Architecture	User - Technical Interface - User	Technical Event - Technical Cycle - Technical Event	Condition - Action - Condition
COMPONENTS	Data Container - Acquisition - Data Container	Module/Object - Couple/Message - Module/Object	Address - Protocol - Address	Individual - Transaction - Transaction	Component Event - Component Cycle - Component Event	Sub-condition - Step/Task - Sub-condition
FUNCTIONING SYSTEM	Information - Integrity - Information	Procedure - Request - Procedure	Client/Server - Access - Client/Server	Worker - Work Session - Worker	Operating Event - Operating Cycle - Operating Event	Target - Option - Target

View the architecture overview with [textual](#) descriptions of the contents of each cell, [graphical](#) depictions, the [CoC Enterprise Integration Questions](#), or return to the [CoC Knowledge Window Contents](#)

Local machine zone

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XML-base Portals

- A *style* of developing information delivery systems
- Three key elements:
 - Engineered, XML-based and metadata-based data integration
 - Internet, Intranet, TCP/IP-based interfaces and delivery
 - Extensive use of new technologies including
 - 4GLs
 - Data analysis tools
 - Business rule engines
 - Data logistic networks
- *Users won't know or really care about any of the above!*

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Portal Navigation Rules

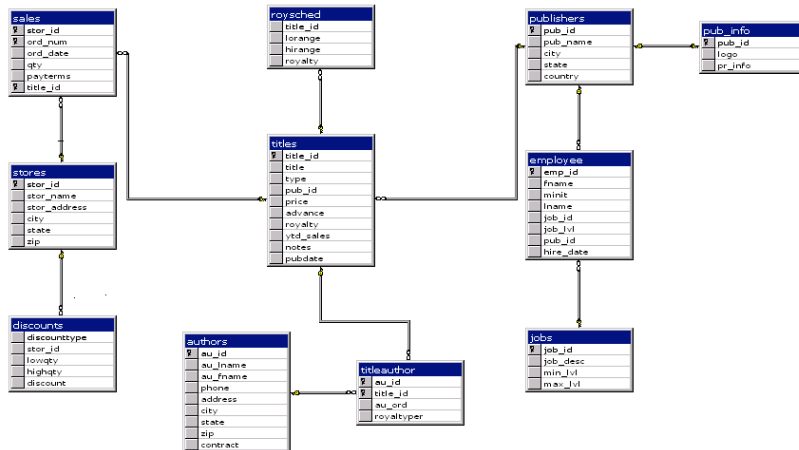
1. Any-to-any relationships
2. Drag and relate interaction metaphor
3. Point of view navigation
4. Metalinks
5. Three way scalability
 - Objects
 - Users
 - Records
6. Integration from different data sources and different data stores
7. Confederated Components Model

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XML-based Portal Example

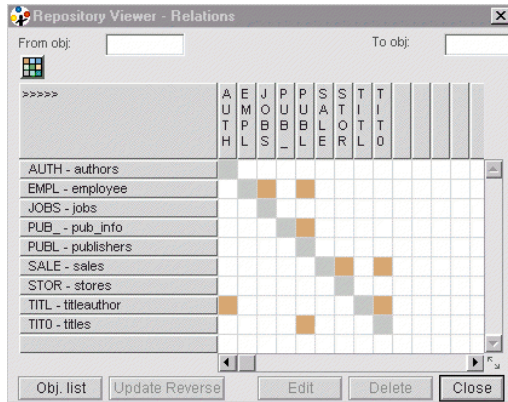


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Relational Data Base Access Possibilities

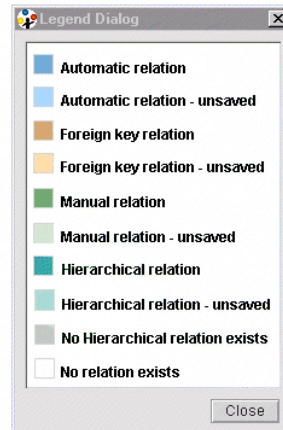
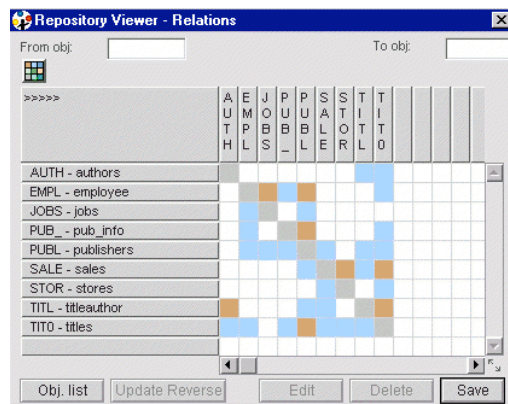


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1st Level Transitive Closure

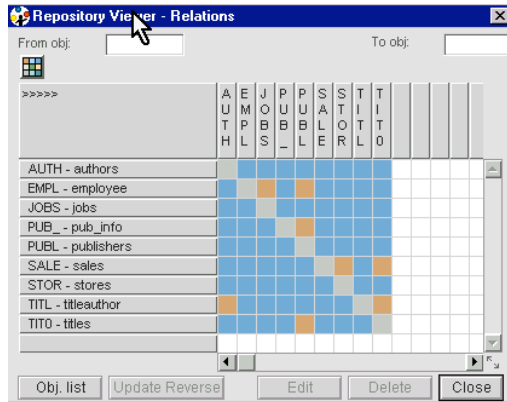


If
 $A \rightarrow B$
 and
 $B \rightarrow C$
 then we should be able to
 navigate directly from
 $A \rightarrow C$

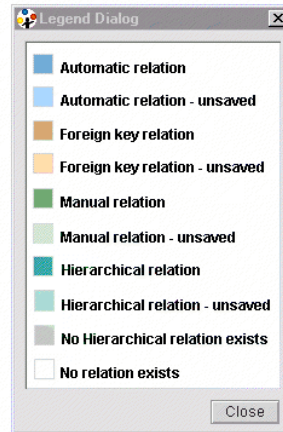
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Autocomplete for all possibilities

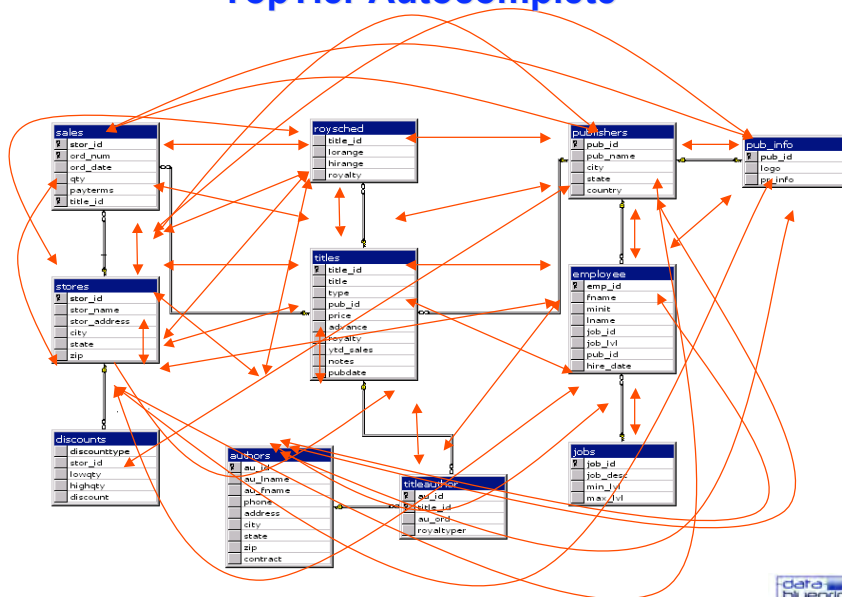


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Metadata before and after TopTier Autocomplete



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Key Portal Attributes

- **Web/file indexing, cataloging:** Crawl and index Web sites and file directories and make them searchable in the portal
- **Application/data integration:** Link to databases, back-end servers, and third-party applications
- **Authentication and access rights** (for administrators): Create users, integrate with external directories, and control access to portal content through user and group roles
- **Personalization features** (for portal users): Customize design and content of their personal portal pages, notification, and content contribution features
- **Customization/extensibility** (for administrators): Change the design and layout of the portal to match company content and modify features through APIs and/or open standards
- **Management/administration:** Administer and configure the portal and the portal's facilities to view and track user activities
- **Scalability:** Manage increasing workloads and extend across the enterprise via multiple servers and/or system implementations

Adapted from Buchrab's Special Report on CRM Products, April 2000

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Advanced Features of Portal Products

- **Abstraction:** Most portal products have "portal components" that are used to access repositories and applications. Many portal components are written for each repository or application. Usually, low-level APIs are accessed, and individual portal components are needed to access each API. An advanced feature appearing in portal products is an abstraction layer. This may take the form of the "bus" approach of Tibco, or the "generic API" approach of Virtual, or the "metadata of metadata" approach of TopTier. Whatever the method of abstraction, this will become the preferred approach for integrating repositories and applications.
- **Federated Search:** Portal products use search components from vendors like Autonomy, Verity, Excalibur and Ultraseek. With these search tools, Web crawlers are dispatched on a regular basis to index the contents of (and in some cases categorize) the information that the portal manages. Federated search capabilities are showing up in portal products, where the search engine can not only search its own indexes, but also search the indexes of other repositories or search engines and return a consolidated result set to the user.
- **Visual Portal Component Builders:** Portal components from most portal products are created outside the portal or are created with text-editor-like features. Advanced portal products are beginning to utilize visual tools for building portal components.
- **Federated Portals:** Most portals are islands unto themselves. Advanced portals recognize the existence of other portals in the enterprise and cooperatively work with those other portals in servicing user needs.
- **Legacy Application Support:** Many portal products do not recognize that many legacy applications may not be integrated into the portal via portal components, if ever at all. Advanced portal products provide access to legacy applications directly via 3270/5250 emulation, or support for WTS or Citrix.
- **Internationalization:** For global enterprises, internationalization of portal products is a necessity. This includes not only foreign language support for the portal screens themselves, but also support for index, search and categorization of foreign language documents.
- **Mobile/Wireless Support:** Advanced portal products have adopted delivery of portal information and services to non-PC devices, predominantly mobile and wireless devices.
- **Offline Support:** For those non-PC devices that are not always connected, the ability to work in offline mode is important. Advanced portal products provide offline support; at the moment, such support is limited for PDAs.
- **Web "Collectors":** An advanced feature related to content is appearing in some portal products. This feature allows the capture of segments of a Web page vs. the entire page. Select artifacts (e.g., graphics, text, tables) can be "collected" from Web pages and served up to users. Some portals are implementing these Web collectors in their products.

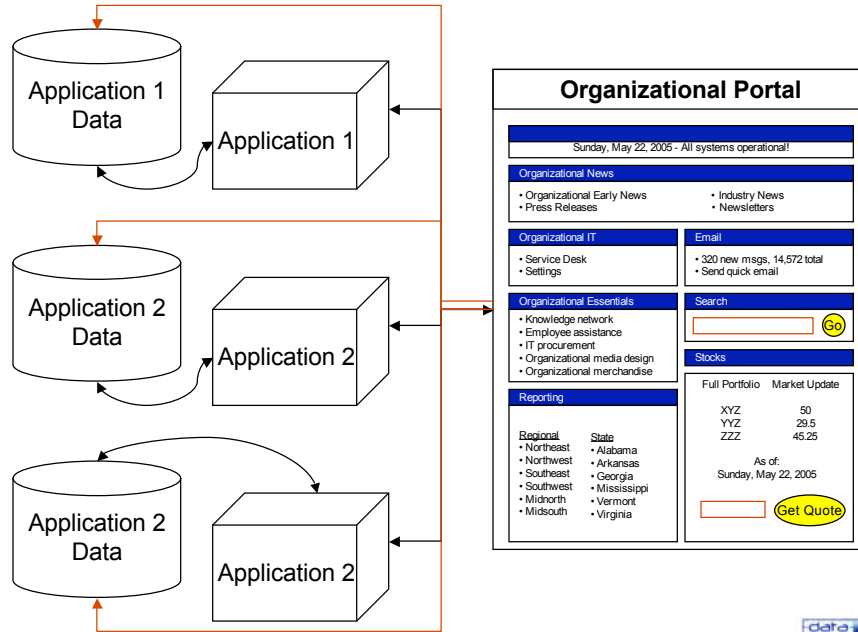
["Advanced Features of Portal Products" from gartner.com]

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XBPs Can Be Used to Access Legacy Data Directly

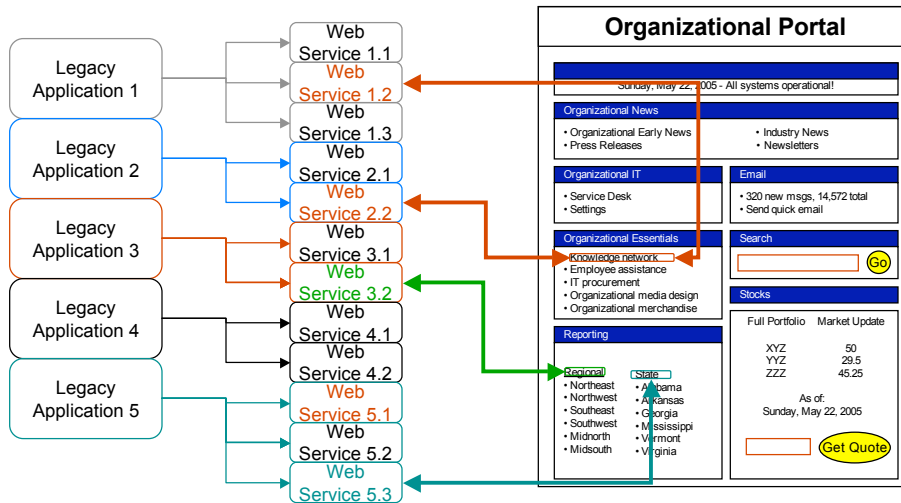


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Legacy Systems Transformed Into Web-services Accessed Through a Portal



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A 3270 Screen Opens Up

NetscapeTn3270

U-20137 - SECURITY - YOU MAY NOT UPDATE ON THIS SCREEN
 107 Class List SYSTEMS ANALYSIS AND DESIGN
HUBONA 6

Screen: _____ SID: _____ Course: **1HF0361902** Term: **993 Fall 1999**

Page 1 of 3

Line	Student Name	Student ID	Col	Cls	Maj	Registration Status
1	AKHTAR, HASINA		BUS	JR	ISY	Enrolled
2	BATDORF, MARK A.		BUS	JR	BFO	Enrolled
3	BOJKEK, ASHLEY		BUS	UC	ISY	Enrolled
4	BRINKLEY, STEPHEN C		BUS	UC	ACC	Enrolled
5	DANIELSEN, ANTHONY		BUS	UC	ISY	Enrolled
6	DAUGHTRY, DAVID L		BUS	UC	ISY	Enrolled
7	DAWSON, STEFANI P		BUS	SR	FIN	Enrolled
8	DEBERRY, CHERYL M		BUS	UC	ISY	Enrolled
9	DIDDEN, CHRISTOPHER		BUS	UC	ISY	Enrolled
10	DIGGS, SAMUEL		DUU	US	DHU	Enrolled
11	DIXON, BRIAN		BUS	UC	ISY	Enrolled
12	GRANT, JAMES T		BUS	SR	ISY	Enrolled
13	HAAS, MICAH P		CHS	SR	MRS	Enrolled
14	HAMILTON, GARY M		BUS	UC	ISY	Enrolled
15	HOLICKY, JOSEPH J, III		BUS	UC	ISY	Enrolled

Sun 05 Sep 11:13

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eESS@VCU

EMPLOYEE SELF SERVICE @ VCU

electronic access to employee records

Virginia Commonwealth University

Personal Information Payroll Information Leave Information TDA Information

ID and PIN
 Your eESS@VCU ID is the last 9 digits of your VCU Card. Your initial PIN is your date of birth (DOB) - "MMDDCCYY" (ex. 07081948). Your new PIN can be up to 8 characters and can include letters, numbers or a combination (ex. GORAMS12 or 1234).

To change your PIN: enter ID, enter current PIN, enter new PIN and re-enter new PIN.

Important: Please note that the default PIN (your DOB) is public information so it provides little or no security. We strongly suggest that you change your PIN to a "password" which is known only to you and is very difficult to guess. For additional protection, change your PIN regularly. Failure to regularly change and to safeguard your PIN places you and your personal data at risk of discovery by others.

Important! Press enter (or click) only once. Repeated clicking will prevent you from accessing the system or will result in your being logged off the system.

Forgot your PIN? Click on "ForgotPin" button above.

Other problems or questions: (Click here)

Related sites

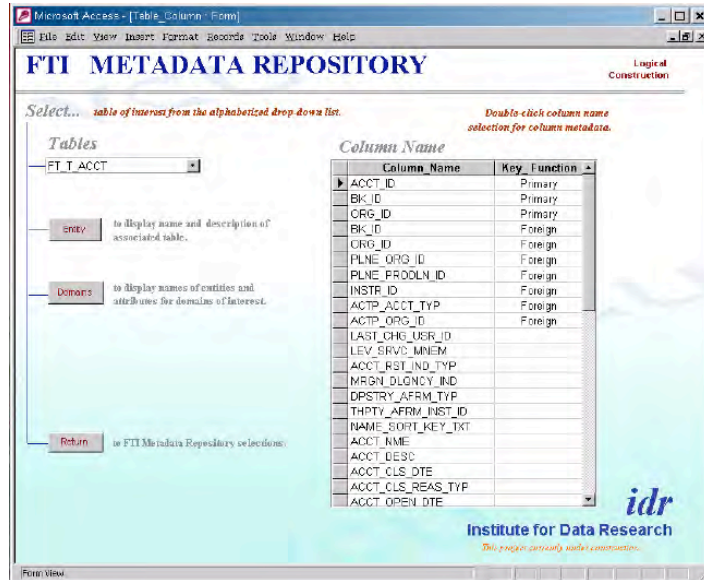
Virginia Commonwealth University
 AIT/HRS home | eESS@VCU
 Modified 12.31.09

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Browser-based Reengineering

Window's based Reengineering



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mySAP.com Welcome Lou Silver Tuesd

Top Tier Demo

Sales document Edit Goto Extras Environment System Help

Display Credit Memo Request 65145866: Overview

Orders

Credit Memo Request	65145866	Net value	300.00
Sold-to party	36981	York Enterprises / 4924 Hope Avenue / Philadelphia 19113	
Ship-to party	36981	York Enterprises / 4924 Hope Avenue / Philadelphia 19113	
Purch.order no.		PO date	

Sales | **Item overview** | Item detail | Ordering party | Procurement

Sales document item	10	Item category	Request
Material	CF-600	Irish Blend Coffee	
		Pricing date	08/09/07
Target quantity	10	CSE	1 CSE <->
Reason for rejection	Delivery date too late		
Incoterms	CFR Philadelphia	Fixed val.date	
Payment terms	0002	Add.value days	
Billing block			

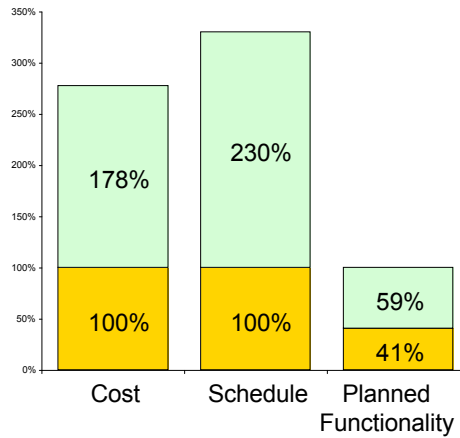
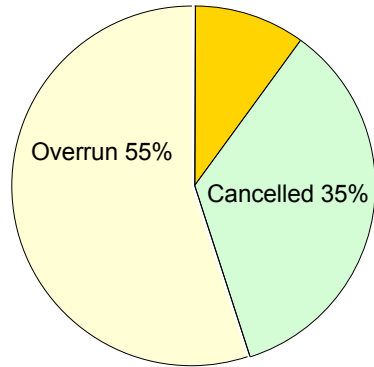
@0B@0C@0E@0C@0E

All items

Item	Material	Target quantity	UoM	Net value	RJ	Description	Customer r
10	CF-600	10	CSE	300.00		Delivery date too late	Irish Blend Coffee

ERP Implementation Success

On time, within budget, as planned 10%



- Most ERP implementations today result in cost and schedule overruns; courtesy of the Standish Group

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Change Requests



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Reverse Engineering PeopleSoft

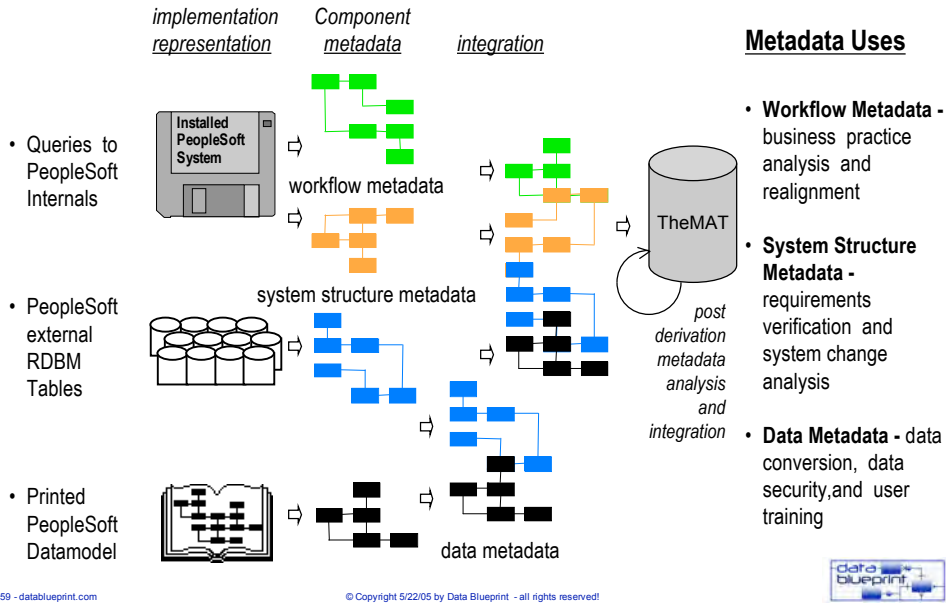


Figure 1: PeopleSoft Metadata Records

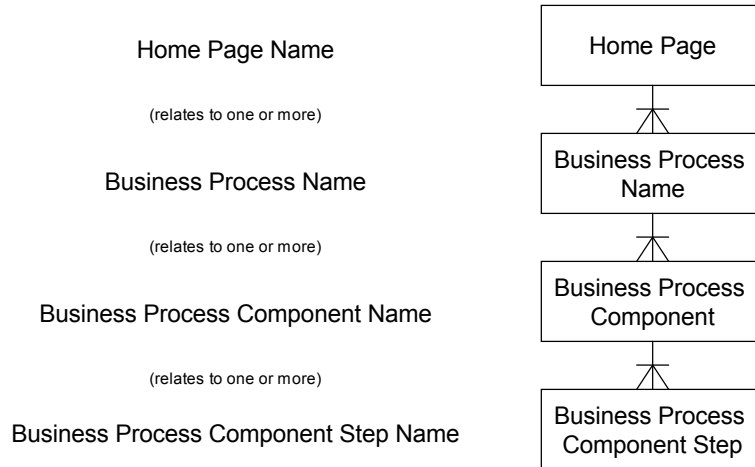
PRCSBARNAME	PSDBFIELD	PSPCMPROGDEL	PSTOOLBARDEFN
PRCSDEFN	PSDBFIELD_VW	PSPNLDEFN	PSTOOLBARDEL
PRCSDEFNGRP	PSDBFIELDLANG	PSPNLDEFN_VW	PSTOOLBARITEM
PRCSDEFNPNL	PSDDDEFPARMS	PSPNLDEL	PSTREBRADDEL
PRCSDEFNREF	PSDDLMODEL	PSPNLFIELD	PSTREBRANCH
PRCSITEMNUM_VW	PSEVENTDEFN	PSPNLFIELD_VW	PSTRECTRL
PRCSJOBDEFN	PSEVENTLANG	PSPNLDEFNLANG	PSTREDEFN
PRCSJOBGRP	PSEVENTROUTE	PSPNLGROUP	PSTREDEFNLANG
PSACCESSPRFL	PSEVENTRLANG	PSPNLGRUPLANG	
PSACTIVITYDEFN	PSFMTDEFN	PSPNLGRPDEFN	
PSACTIVITYDEL	PSFMTITEM	PSPNLGRUPLANG	
PSACTIVITYDES	PSHOLIDAYDEFN	PSPNLRECTRL	
PSACTIVITYDESGL	PSHOLIDAYDEL	PSPRCSLOCK	
PSACTIVITYLANG	PSHOLIDAYDEL	PSPRCSRFL	
PSACTIVITYMAP	PSHOMEPAGE_VW		
PSACTIVITYTXT	PSHOMEPAGEDEFN		
PSACTIVITYXTLGL	PSHOMEPAGEDEL		
PSACTIVITYXREF	PSHOMEPAGELANG		
PSAEAPPLDEFN	PSHOMEPAGEMAP		
PSAEAPPLDEL	PSHOMEPAGEOPR		
PSAEAPPLSTATE	PSHOMEPAGESEC		
PSAEAPPLTMP	PSHOMEPAGETXT		
PSAEAPPLTMP	PSHOMEPAGETXTLGL		
PSAEOPTIONS	PSHOMEPAGEXREF		
PSAEREQUEST	PSIXDDLPARM		
PSAEREQUESTARM	PSIMPDEFN		
PSASECTDEFN	PSIMPEL		
PSASECTTMP	PSIMFIELD		
PSASITERDEFN	PSIMPLAT		
PSASITERTMP	PSINDEXDEFN		
PSASITMADDEFN	PSKEYDEFN		
PSASITMADTMP	PSLOCK		
PSASITMDEFN	PSMAPEXPR		
PSASITMDEFNADJ	PSMAPFIELD		
PSASITMTEMP	PSMAPLEVEL		
PSAPPSTLVER	PSMAPRECFIELD		
PSASOFDATE	PSMAPROLEBIND		
PSAUT	PSMAPROLENAME		
PSAUTHITEM_VW	PSMENUDEFNLANG		
PSAUTHRCRS	PSMENUDEL		
PSAUTHSIGNON	PSMENUITEM		
PSAUTHSIGNON_VW	PSMENUITEMLANG		
PSBUSCOMPDEFN	PSMSGAGTDEFN		
PSBUSCOMPDEL	PSMSGACTLANG		
PSBUSCOMPLANG	PSNSBOK		
PSBUSCOMPREC	PSNSBOKLANG		
PSBUSPROCDEFN	PSNSBOKREQUST		
PSBUSPROCDEFN_VW	PSOBJGROUP		
PSBUSPROCDEL	PSOPRALLAS		
PSBUSPROCDDES	PSOPRALLAS		
PSBUSPROCDDESGL	PSOPRCLSTYPE		
PSBUSPROCLANG	PSOPRCLS		
PSBUSPROCMAP	PSOPRCLS_TEMP		
PSBUSPROCDSEC	PSOPRDEFN		
PSBUSPROCTXT	PSOPRDEFN_INTFC		
PSBUSPROCTXTLGL	PSOPRDEFN_TEMP		
PSBUSPROCDREF	PSOPRDEFN_VW		
PSCHGCTLIST	PSOPRJOB		
PSCHGCTLOCK	PSOPTIONS		
PSCLCK	PSOPNAME		
PSCOLORDEFN	PSPCMINAME_VW		
PSCOLORDEL	PSPCMPROG_VW		
	PSPCMPROG		
	PSSTVLEDEL	XREF_PANEL_VW	
	PSTBARITEMLANG	XREF_PNLREC_VW	
		XREF_VVIEW	

PeopleSoft Metadata

Example Query Outputs

Row	Home Page Name	Business Process Name	Component Name	Step Name	Counter
1	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Benefit Program Participation	1
2	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Benefits Deduction Summary	2
3	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Benefits Summary	3
4	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Disability Benefits	4
5	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Employee Data Summary	5
6	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	PSA Benefits	6
7	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Health Benefits	7
8	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Leave Plan Benefits	8
9	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Life and AD&D Benefits	9
10	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Savings Plan Benefits	10
11	Benefits	Administer Base Benefits	Manage Benefit Enrollments-LS	Vacation Buy/Sell Benefits	11
12	Benefits	Administer Base Benefits	Manage Dependents/Benefits	DepBen Comments	12
13	Benefits	Administer Base Benefits	Manage Dependents/Benefits	Dependent/Beneficiary Summary	13
14	Benefits	Administer Base Benefits	Manage Dependents/Benefits	Dependents/Beneficiaries	14
15	Benefits	Administer Base Benefits	Manage Leave Accruals	Report Leave Accruals	15
16	Benefits	Administer Base Benefits	Manage Leave Accruals	Review Leave Accruals	16
17	Benefits	Administer Base Benefits	Manage Leave Accruals	Run Leave Actual Process	17
18	Benefits	Administer Base Benefits	Manage Leave Accruals	Benefits Contribution Register	18
19	Benefits	Administer Base Benefits	Manage Leave Accruals	Credits Carrier Interface	19
20	Benefits	Administer Base Benefits	Manage Leave Accruals	Deduction/Benefits Register	20
21	Benefits	Administer Base Benefits	Manage Leave Accruals	Health Benefits Participation	21
22	Benefits	Administer Base Benefits	Manage Leave Accruals	Life and AD&D Participation	22
23	Benefits	Administer Base Benefits	Manage Leave Accruals	Load Carrier Reporting Table	23
24	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Adjustment Summary	24
25	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Balance Review	25
26	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Charge Adjustment	26
27	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Charge Review	27
28	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Chg Summary - Bill Ind	28
29	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Chg Summary - Plan Typ	29
30	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Manual Charge Entry	30
31	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Payment Adjustment	31
32	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Payment Review	32
33	Benefits	Administer Base Benefits	Maintain Billing Accounts	Billing Payment Summary	33
34	Benefits	Administer Base Benefits	Maintain Billing Accounts	Manual Billing Pymt Entry	34
35	Benefits	Administer Base Benefits	Maintain Billing Accounts	Override Billing Environment	35

PeopleSoft Process Metadata

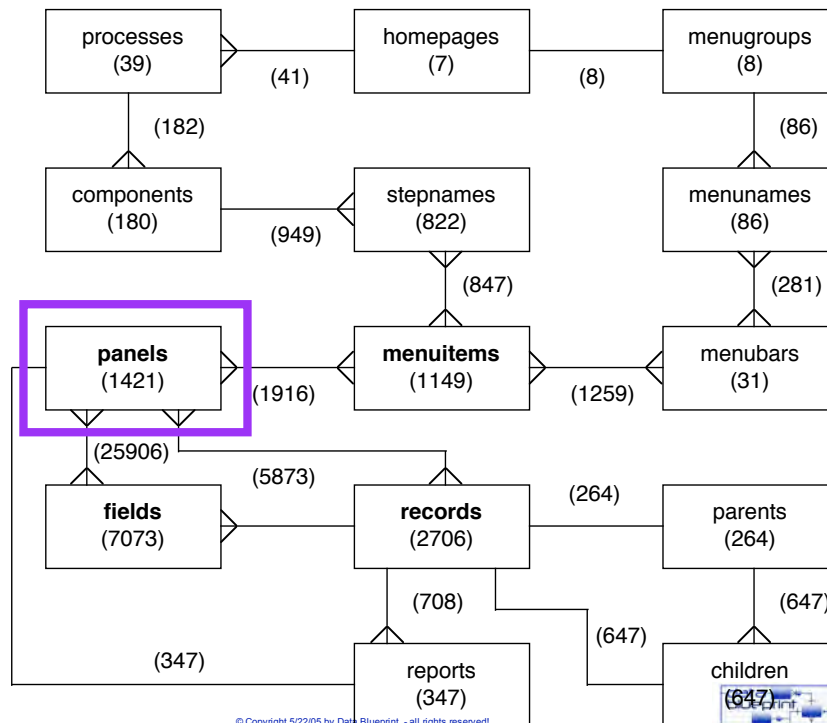


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Panels is used to link in the Data Metadata Structure



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Metadata Uses: Requirements

- Systematically determine the requirements that the PeopleSoft enterprise software could meet
- Document discrepancies between system capabilities and organizational needs
- Panels presented to users in JAD-like sessions that were organized using system structure metadata
- Functional users determined and certified the overall system functionality
- Associating requirements with components
- Discrepancies were noted for subsequent investigation and resolution

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Metadata Uses: System Changes ...

- Evaluated proposed system changes, modifications, and enhancements
- Metadata types used to assess the magnitude of proposed changes
- For example: *what are number of panels requiring modification if a given field length was doubled?*
- Analyze the costs of changing the system versus changing the organizational processes

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Metadata Uses: Practice Analysis

- Identify gaps between the DP&T/DOA business requirements and PeopleSoft
- Process components were mapped to user activities and workgroup practices
- Users focused their attention on relevant portions of the system
- For example, the payroll clerks accessed the metadata to determine which panels 'belonged' to them.



Metadata Uses: Realignment

- Realignment addressed gaps between functionality and existing work practices
- Once users understood the system's functionality and navigate through process component steps
- Compared the system's inputs and outputs with their own information needs
- If gaps existed, metadata used to assess the relative magnitude of proposed changes
- Forecast system customization costs
- Evidence for changing the business practice instead of the system



Metadata Uses: Training

- Training specialists used mappings to determine relevant combinations of panels, menuitems, and menubars
- Display panels in the sequence expected by the system users
- Users were able to swiftly become familiar with their 'areas'
- Screen session recording and playback capabilities



Metadata Uses: Additional Metadata

- Metadata describing LS1 & LS2
- Metadata supporting data conversion
 - initial motivation for the metadata development
 - each decision to convert a data item was recorded, permitting the tracking of the number of data items that had been mapped, converted, and to what they had been converted
- Associations with system batch reporting programs called SQRs
- User and user type metadata



Metadata Uses: Database Design

- CASE tool integrated to extract the database design information directly from the physical database
- Integrated into TheMAT
- Decomposition of the physical database into logical user views
- Document how user requirements were implemented by the system
- Planning security access levels and privileges

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Metadata Uses: Statistical Analysis

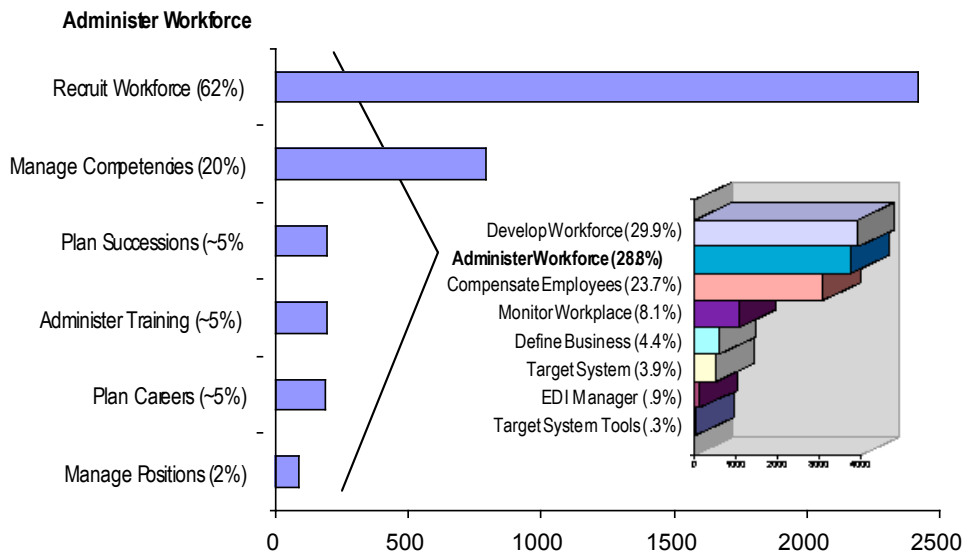
- Guiding metadata-based data integration from the two legacy systems
- For example, the ERD information was used to map the legacy system data into PeopleSoft data structures
- Statistical summaries described the new system to users

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Metadata Uses

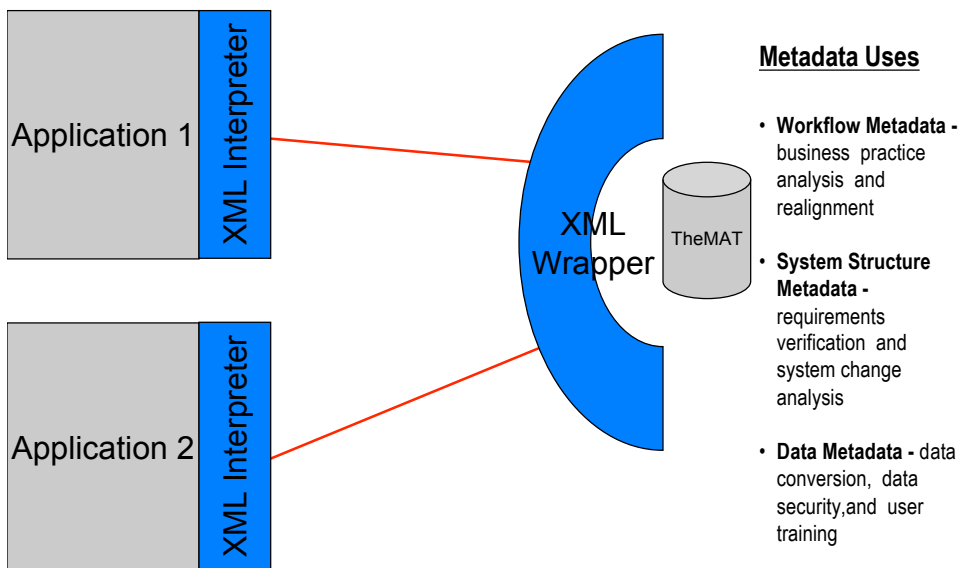


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XML-Wrapping PeopleSoft Metadata



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Implement using Commercial-Off-The-Shelf (COTS) technology



- At this point buy instead of build as much as possible
- Architecture should be flexible because it will need to adapt
- XML-based maintenance of metadata will ensure rapid recovery from inevitable mistakes
- Repeat guidance for implementing metadata repository functionality

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Implementing Metadata Repository Functionality

- "The repository" does not have to be an integrated solution
 - it must be an easily integrateable solution
- Repository functionality = repository
 - metadata must easily evolve to repository solution
- Multiple repositories are not necessarily bad
 - as interim solutions, Excel has been working quite well
- Minimal functionality includes ability to create, read, update, delete, and evolve metadata items
- Remember the 1st law of data management
 - In order to manage metadata, you need metadata repository functions

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3-Way Scalability

Expand the:

1. Number of data items from each system
 - How many individual data items are tagged?
2. Number of interconnections between the systems and the EIL hub
 - How many systems are connected to the hub?
3. Amount of interconnectability among hub-connected systems
 - How many inter-system data item transformations exist in the rule collection?



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Approach Benefits

- Reusable formalized understandings
- Single metadata management format
- Ability to employ various data management technologies
- Clear migration path to evolving technologies
- Establishment of common business vocabulary
- Likely to be less expensive than other approaches



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Portal Summary

- Effort wasted on code/coding
- Extending data management technology reach to include previously unstructured data
- Opportunities to make data quality initiatives visible
- XML-based Portal advantages
- ERP Example



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7. XML-based Portals

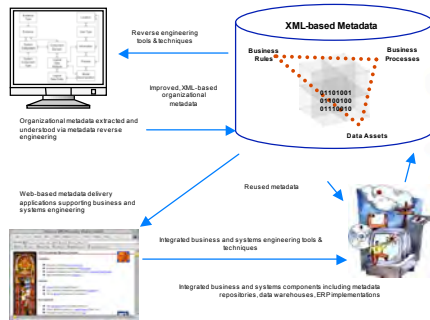
- Effort wasted on code/coding
- Extending data management technology reach to include previously unstructured data
- Opportunities to make data quality initiatives visible
- XML-based Portal advantages
- ERP Example



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Greetings from **Montpelier, Virginia** - welcome to my website! You might be wondering what's here? I've structured the contents into a number of menu topics. Please click on each topic for a description of its contents. (Incidentally, "paiken" has been my e-mail address prefix since 1991 - Allen Tsaiensky named this website.)

Some topics of interest include the VCU School of Business - Department of Information Systems - where my affiliation dates to 1978.

Relatedly, in 2000, VCU spun off a company named "Data Blueprint" to capitalize on intellectual property developed as part of my research into data engineering and data engineering. I regularly give talks and appear at conferences, speaking on these and related topics as part of the IEEE, DAMA and other distinguished speaker programs.

Last of all, I really enjoy both playing and listening to music in various forms with lots of different friends!

Thank you for looking around. If you have questions or comments please contact me via e-mail at: paiken@datablueprint.com. This is my web site - none of the opinions here represent the opinions of my various employers. Thank you for visiting!

Peter Aiken  Macintosh

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