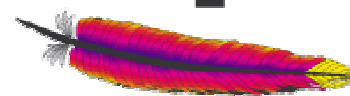


One Hour Portal with Apache Cocoon

Carsten Ziegeler
cziegeler@apache.org

Competence Center Open Source
S&N AG, Germany

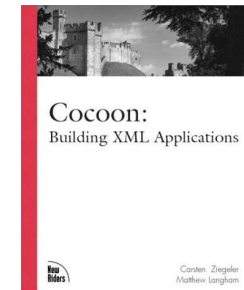
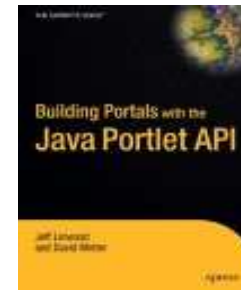
A Portal solution and more



ApacheCon
Europe 05

About

- Member of the Apache Software Foundation
- Committer in some Apache Projects
 - Cocoon, Excalibur, Pluto, Incubator
- Chief Architect of the Competence Center Open Source, S&N AG, Germany
- Article and Book Author
- Technical Reviewer



Agenda

- Requirements
- Viewpoints
- Real Life examples
- The Cocoon Portal – explained
- Tools
- Wrapup
- Demo

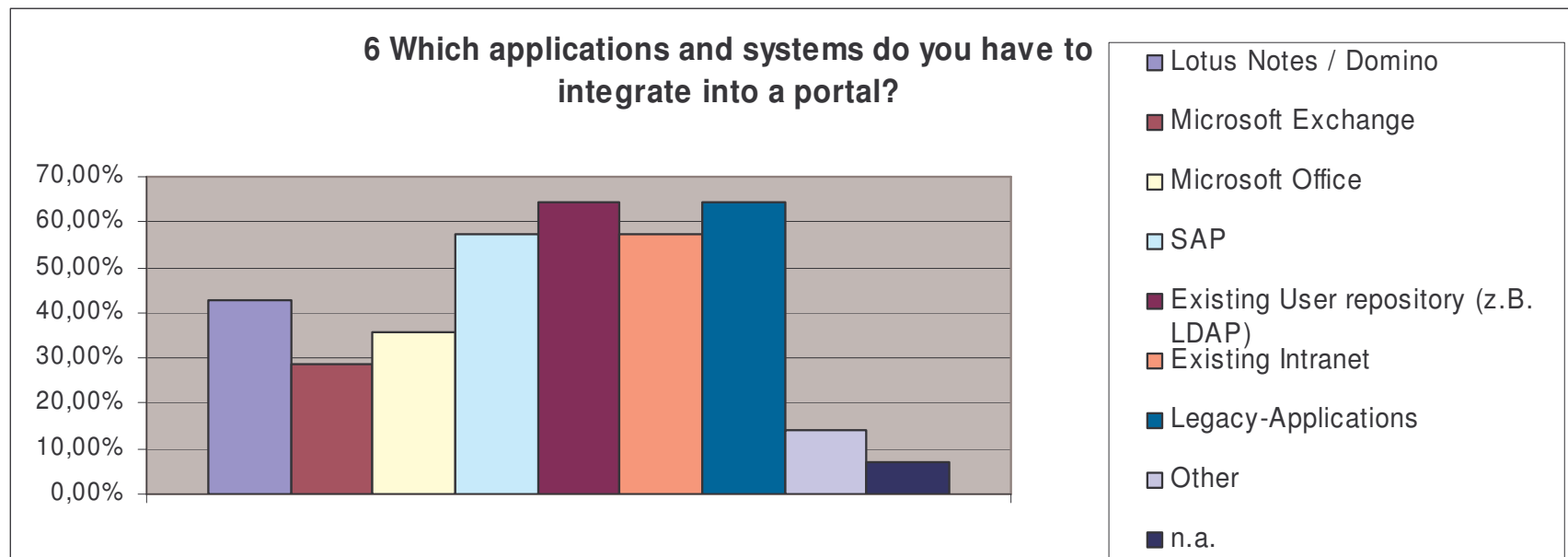
Portal Requirements

- Integration of existing heterogenic systems, data and processes
- Existing (Web) Applications and User repositories must be integrated
- Flexible and efficient architecture that reduces vendor lock-in and allows „DIY“

Portal Requirements

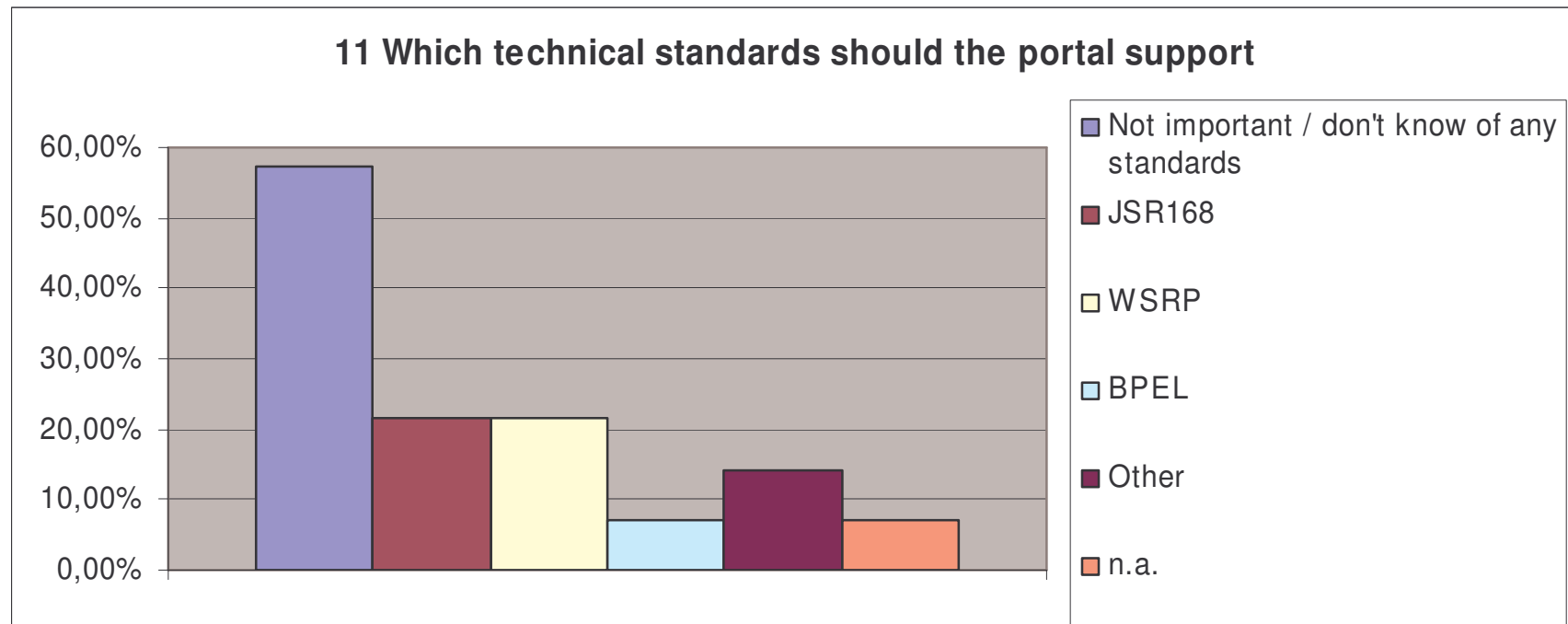
- Create a unified look-and-feel over all applications
- Manage sessions between users, EAI platform and back-ends
- Build unified navigation
- Create pass-through links
- Create a single sign on solution

Portal Requirements



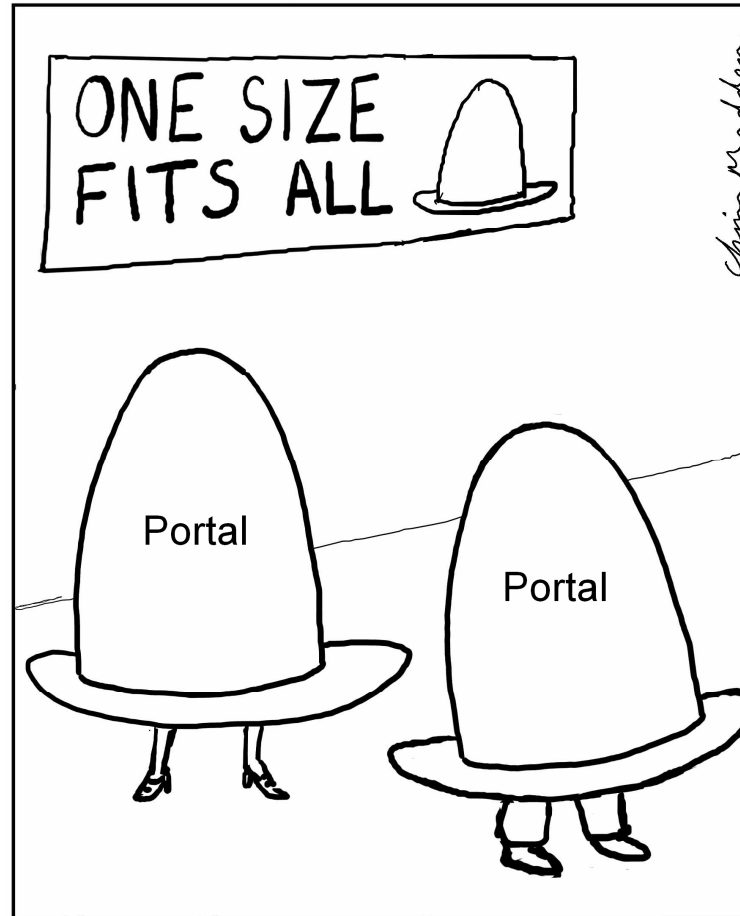
Source: S&N poll 2005

Portal Requirements



Source: S&N poll 2005

Viewpoints: One size?



Viewpoints: Open Source portals

- Meta Group
 - **Portals are also settling into place as infrastructure frameworks rather than standalone applications.**
- AMR Research
 - **"Standardisation will hasten the commoditisation of portal servers, like the application server and database markets before them," "The increasing proliferation of portals and standardisation of the technology should also drive the take-up of open source infrastructure."**
- Gartner
 - **One doesn't buy an uberportal, one builds it. The best portal products for the uberportal are open architected, service-oriented and standards-based.**

Viewpoints: Building on Pareto

- 80% of an Enterprise Portal will become standardized
 - ❑ Data integration: JSR168, JSR170, WSRP, XML/HTTP
 - ❑ Process integration: BPEL
 - ❑ User integration: LDAP
 - ❑ User viewing: HTML, XHTML, PDF, Office formats, SVG
- You should be worrying about (and paying for) the 20% that matter
 - ❑ Individual: your legacy system
 - ❑ Individual: your specific processes
 - ❑ Differentiation to your competitor

Real Life Examples



The screenshot shows the homepage of the ÖAMTC (Österreichischer Automobil-, Motorrad- und Touring Club) website. The header features the ÖAMTC logo, a banner with the text "SCHUTZBRIEF", and a "Nothilfe 120" button. The main navigation bar includes tabs for "Auto", "Reise", "Verkehr", "Versicherung", and "Recht". Below this, a secondary navigation bar lists various services: "Mitgliedschaft & Schutzbrief", "Technische Dienste", "Clubdaten", "Fahrsicherheit", "Flugrettung", "Pannenhilfe", and "Akademie".

On the left side, there is a "Suche" (Search) section with a search bar and a "Partnersites" section featuring logos for "auto touring" and "OSK Motor sport". Below these is a "Pressebox" section with links to "Richtlinie für Fußgänger", "Spritpreiserhöhung nicht gerechtfertigt", and "ÖAMTC-Ambulanzjet holt Urlauber heim".

The central area features a large yellow banner with the text "Ihr Club sagt Danke!" and a "Kontakte" (Contacts) section providing the following information:

- Österreichischer Automobil-, Motorrad- und Touring Club (ÖAMTC)
- Straße: Schuberttring 1-3
- PLZ / Ort: 1010 Wien
- Telefon: 0043/1/71199-0
- E-mail: Online-Formular
- Internet-Adresse: <http://www.oeamtc.at>
- Vereinsregisternummer: XIV - 701
- Vereinsregisterbehörde: Bundespolizeidirektion Wien, Vereinsbüro

On the right side, there is a "Login" section with fields for "Username" and "Passwort", an "anmelden" button, and links for "Passwort vergessen", "Username vergessen", and "Neu-Anmeldung". Below this is a "Shortcuts" section with links to "Routenplaner", "Spritpreise", and "Verkehrsservice". At the bottom right, there is a "Landesvereine" section displaying various regional club logos.

Deutsche Börse

Deutsche Börse Group - XBRL Initiative - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

http://xbrl.deutsche-boerse.com/xbrl/list,all,all,0,no,all-de.html?t=18563508

DEUTSCHE BÖRSE GROUP XBRL-Initiative

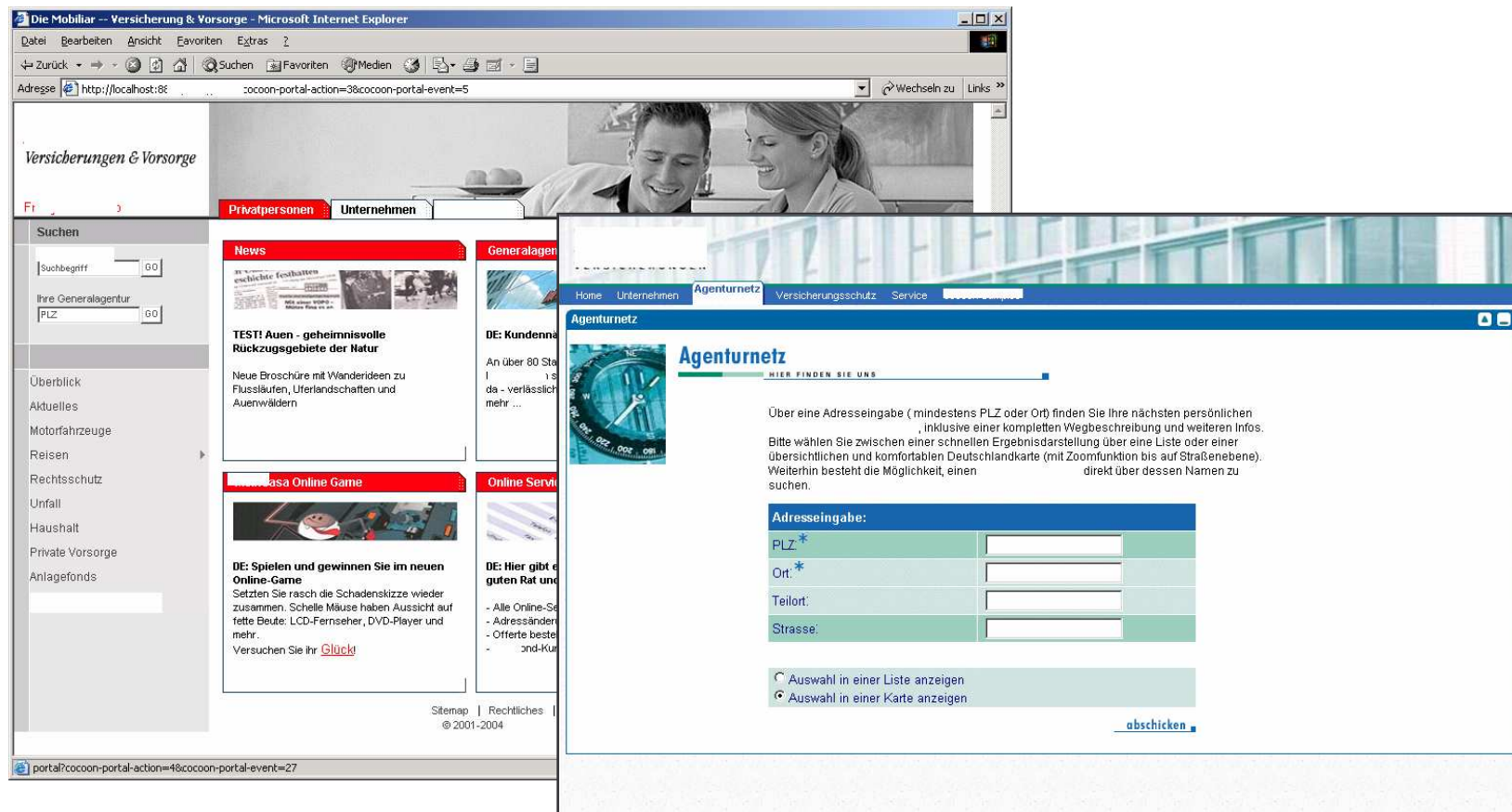
Überblick weitere Informationen **alle Berichte** Hilfe Förderer der Initiative English Version

Übersicht aller Berichte

Lieferdatum	alle	Quartal	von - bis	Branche	alle	Unternehmen	alle	Ansicht	Download	Original
									Mehrfachauswahl	
01.12.2004		Q3/2004	01.07. bis 30.09.2004	Industrial		Advanced Photonics Technologies AG		HTML	XBRL Excel PDF ERS	
29.09.2004		Q2/2004	01.04. bis 30.06.2004	Industrial		Advanced Photonics Technologies AG		HTML	XBRL Excel PDF ERS	
29.09.2004		Q1/2004	01.01. bis 31.03.2004	Industrial		Advanced Photonics Technologies AG		HTML	XBRL Excel PDF ERS	
14.12.2004		Q3/2004	01.07. bis 30.09.2004	Software		ATOSS Software AG		HTML	XBRL Excel PDF ERS	
15.09.2004		Q2/2004	01.04. bis 30.06.2004	Software		ATOSS Software AG		HTML	XBRL Excel PDF ERS	
15.09.2004		Q1/2004	01.01. bis 31.03.2004	Software		ATOSS Software AG		HTML	XBRL Excel PDF ERS	
15.11.2004		Q3/2004	01.07. bis 30.09.2004	Transportation		Fraport AG		HTML	XBRL Excel PDF ERS	
15.11.2004		Q2/2004	01.04. bis 30.06.2004	Transportation		Fraport AG		HTML	XBRL Excel PDF ERS	
27.09.2004		Q1/2004	01.01. bis 31.03.2004	Transportation		Fraport AG		HTML	XBRL Excel PDF ERS	
11.11.2004		Q3/2004	01.07. bis 30.09.2004	Software		GFT Technologies AG		HTML	XBRL Excel PDF ERS	
01.09.2004		Q2/2004	01.04. bis 30.06.2004	Software		GFT Technologies AG		HTML	XBRL Excel PDF ERS	
31.08.2004		Q1/2004	01.01. bis 31.03.2004	Software		GFT Technologies AG		HTML	XBRL Excel PDF ERS	
25.11.2004		Q3/2004	01.07. bis 30.09.2004	Telecommunication		mobilcom AG		HTML	XBRL Excel PDF ERS	
19.10.2004		Q2/2004	01.04. bis 30.06.2004	Telecommunication		mobilcom AG		HTML	XBRL Excel PDF ERS	
19.10.2004		Q1/2004	01.01. bis 31.03.2004	Telecommunication		mobilcom AG		HTML	XBRL Excel PDF ERS	
13.12.2004		Q3/2004	01.07. bis 30.09.2004	Software		Software AG		HTML	XBRL Excel PDF ERS	
24.09.2004		Q2/2004	01.04. bis 30.06.2004	Software		Software AG		HTML	XBRL Excel PDF ERS	
24.09.2004		Q1/2004	01.01. bis 31.03.2004	Software		Software AG		HTML	XBRL Excel PDF ERS	

[Impressum](#) Die XBRL-Initiative der Deutschen Börse wird gefördert von der DGAP, DVFA, Fraunhofer IPSI, Software AG, S&N AG, XBRL Deutschland und mit Unterstützung von Ernst & Young

Versicherungen



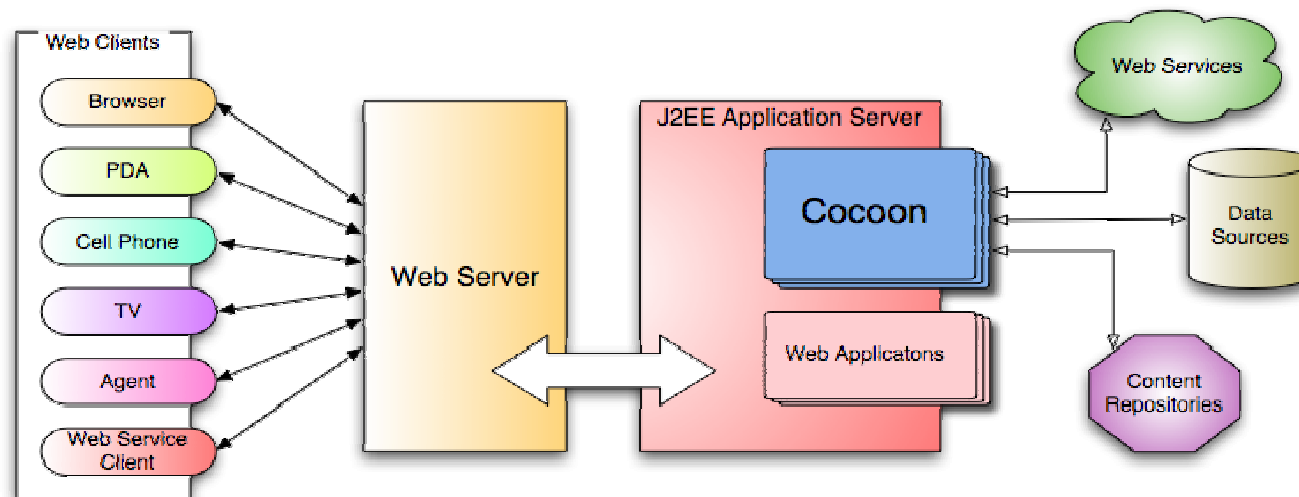
Why did they choose Cocoon?

- Cocoon often already used as an XML application platform
- Different heterogenic systems needed integrating
 - E.g. Existing databases or Web applications
- Multi-Channel Publishing
 - Data inside the portal and as PDF or Excel
- Efficient time to market for required functionality
- Java programming skills not a necessity
- Community Support
- Commercial support available
- Cocoon provides a ***portal framework***

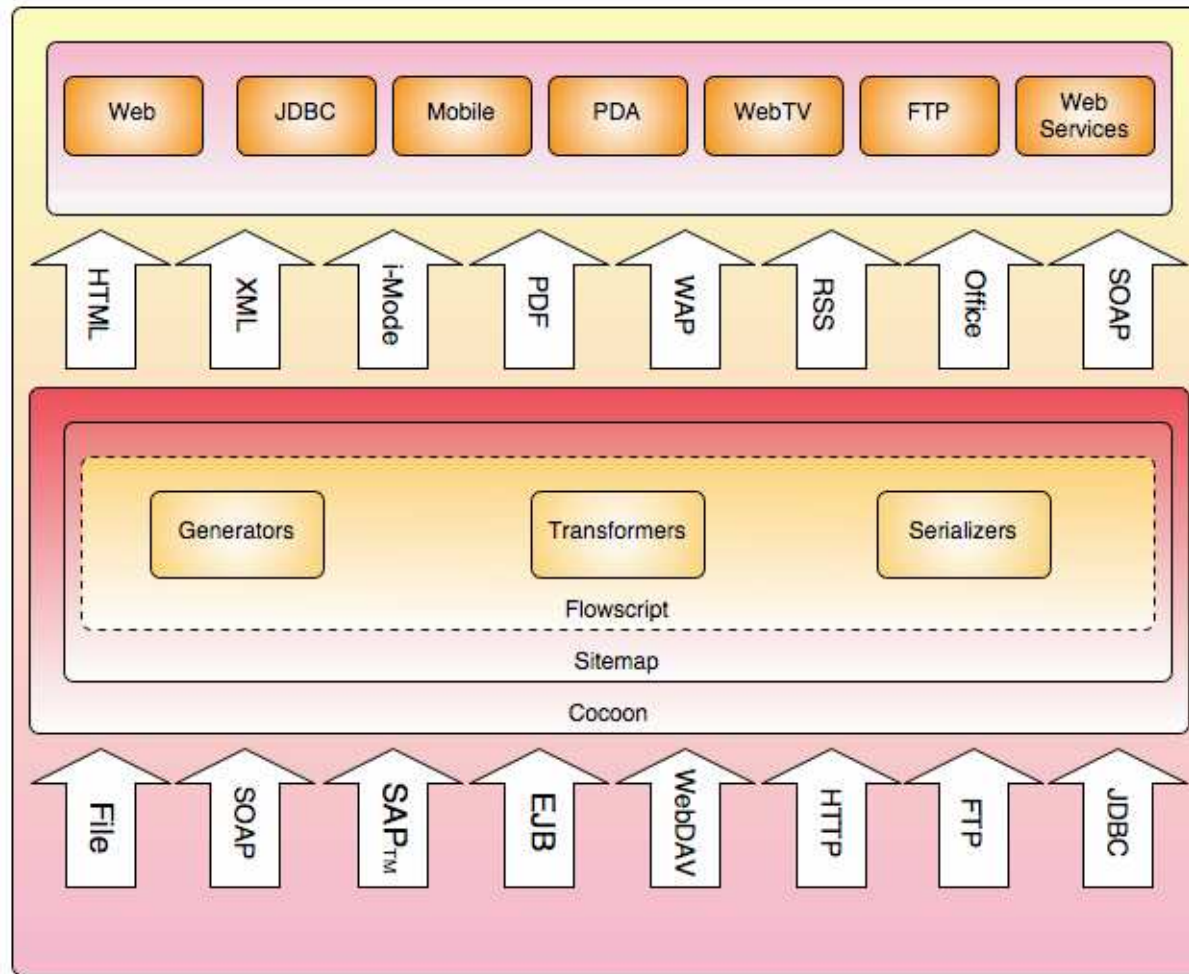
History

- Started in September 2000
 - ❑ Commercial product developed by S&N
 - ❑ Based on Cocoon
 - ❑ Additional components and project specific additions
 - ❑ CMS, Tools, documentation, trainings
- Completed in mid 2001
 - ❑ sunRise and sunSpot
 - ❑ Used in various projects
- Donated to the Cocoon project in February 2002
 - ❑ Used around the world
- Started new Portal Engine in the end of 2002
 - ❑ Together with other interested parties
 - ❑ The usual advantages
- New portal engine in Cocoon since the beginning of 2004

Cocoon in a picture



..Ok, make that 2



Portal as an integrated solution

- Adopt given strategies
 - ❑ Multi-Channel
 - ❑ Separation of Concerns
- Use available components
 - ❑ Pipelines
 - ❑ Data integration
- Use available sub-frameworks
 - ❑ Forms
 - ❑ Flow

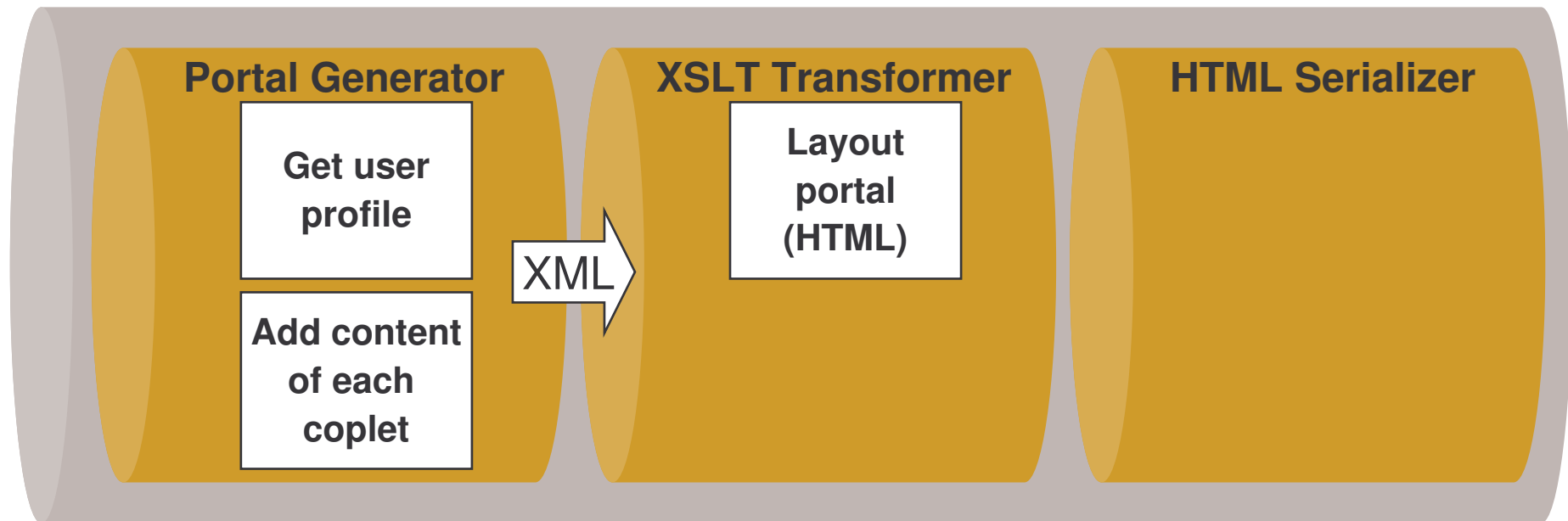
And add

- User-Authentication
 - Integrate LDAP, Database, ... through components and pipelines
 - Add your own via custom components or tweaks
- Flexible Profile management
- Flexible layout concept
- Coplet concept
- Support for portal standards

Overview

- Definition and configuration in XML
 - ❑ Layout (ordering) separated from content
 - ❑ Using existing types
 - ❑ Requires no Java coding
- Predefined coplet types
 - ❑ More than a portlet
 - ❑ Simple usage of Cocoon for delivering content
 - ❑ Requires no Java coding

It's a pipeline, Jim



Generating the Portal View

- Getting the Profile
 - Layout
 - User preferences
- Rendering the View
 - Drawing the layout
- Aggregating Content
 - Include content of selected coplets

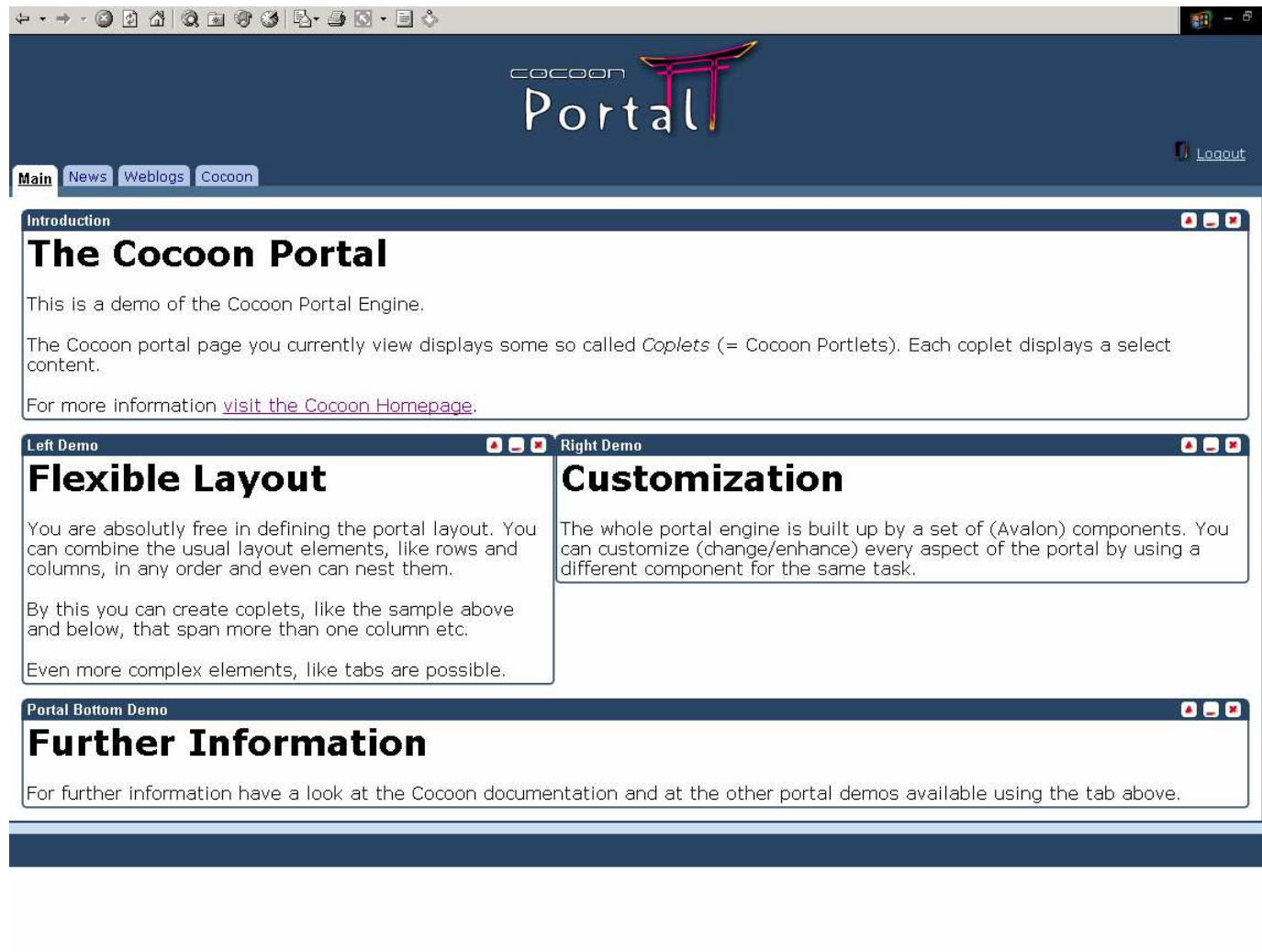
Profile Management

- Hierarchical Portal profiles possible for
 - Anonymous
 - Roles
 - Users
- Profiles stored (via a Pipeline) in
 - File
 - Database
 - ...

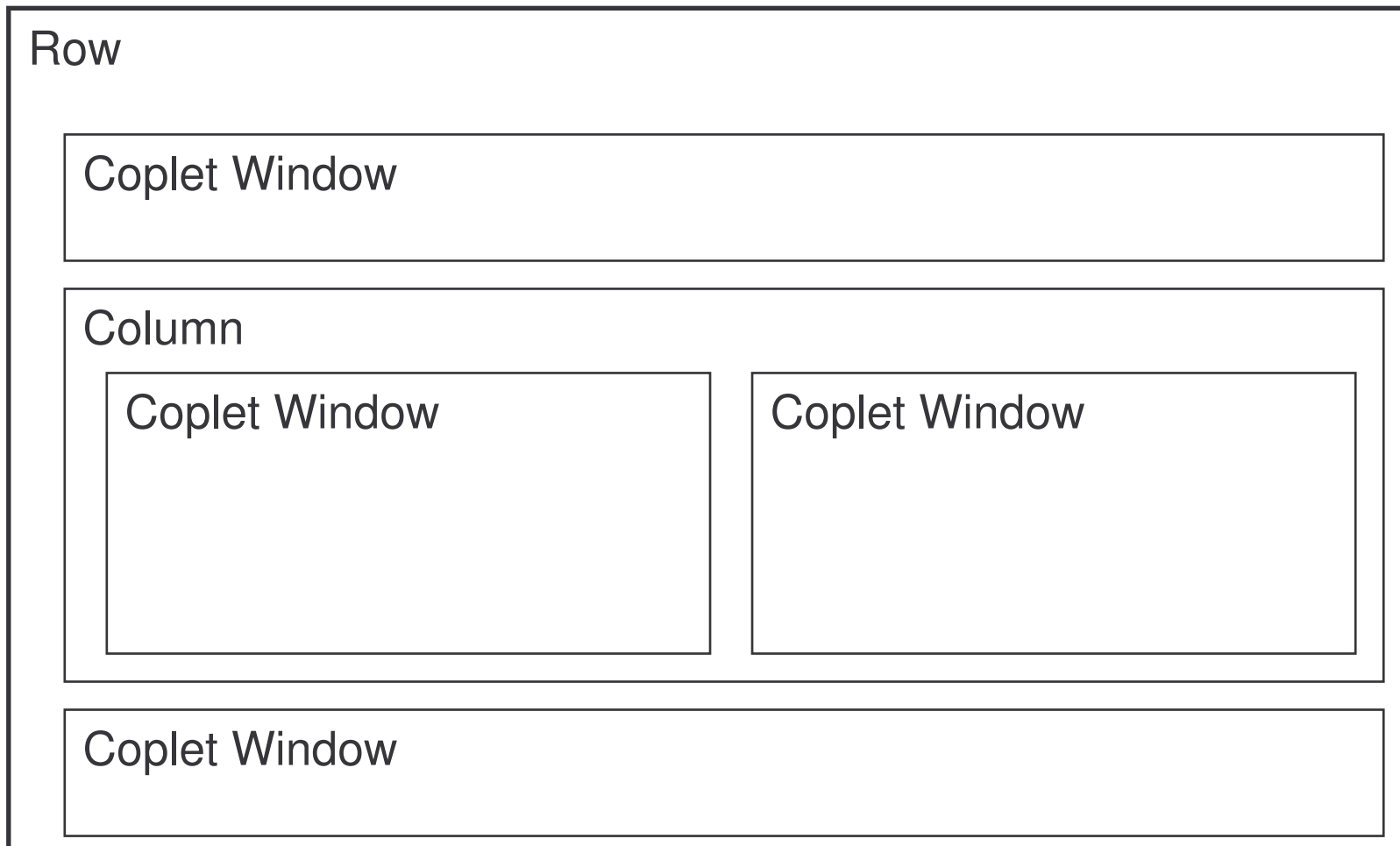
Defining The Portal Layout

- Hierarchical Tree of
 - Composite Layout Objects
 - Row, Column
 - Tab
 - ...
 - Single Layout Objects
 - Coplet Window
 - Frame
 - Link
 - ...
 - Deep nesting possible!

Layout Management



Layout Management

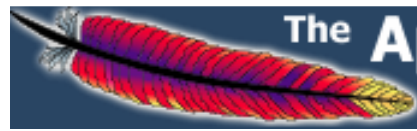


Layout Management

```
<composite-layout name="row">
  <item>
    <coplet-layout name="coplet">
      <coplet-instance-data>First</coplet-instance-data>
    </coplet-layout>
  </item>
  <item>
    <composite-layout name="column">
      <item>
        <coplet-layout name="coplet">
          <coplet-instance-data>Left</coplet-instance-data>
        </coplet-layout>
      </item>
      <item>
        <coplet-layout name="coplet">
          <coplet-instance-data>Right</coplet-instance-data>
        </coplet-layout>
      </item>
    </composite-layout>
  </item>
  <item>
    <coplet-layout name="coplet">
      <coplet-instance-data>Bottom</coplet-instance-data>
    </coplet-layout>
  </item>
</composite-layout>
```

Rendering The Portal Layout

- Configured renderer for each layout component
 - Individual XSLT stylesheets
 - Or plug in a Java class
 - Generate: XML, HTML, WML, ...
 - Renderers traverse the tree
- Placeholder for each coplet
 - Filled with content in a separate step

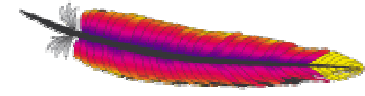


The **Apache Cocoon Project**

<http://cocoon.apache.org/>

COCOOON

Integrating content

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JSR 168

- Java API (based on J2EE 1.3)
 - Portlet Development
 - User Preferences
 - Localization
- Similar to Servlet API
 - Request-Response Cycle
 - Own Deployment Descriptor
- Portlet Container extends Servlet Container
 - Servlet Specification 2.3
 - **Not** covered in the JSR
- Reference Implementation: Apache Pluto

What's this coplet thing?

- A coplet is so much more than a portlet 😊
 - ❑ A URI
 - ❑ A Pipeline
 - ❑ A JSR-168 portlet
 - ❑ WSRP consumer (coming real soon)
 - ❑ Your own Java Class

What's this coplet thing?

- Definition of coplets ($\triangleq$ classes)
 - Unique id
 - Required type
 - Configuration

```
<coplet-data id="CZ Weblog" name="standard">
```

ID

```
<title>CZ's Weblog</title>
```

```
<coplet-base-data>URICoplet</coplet-base-data>
```

Type

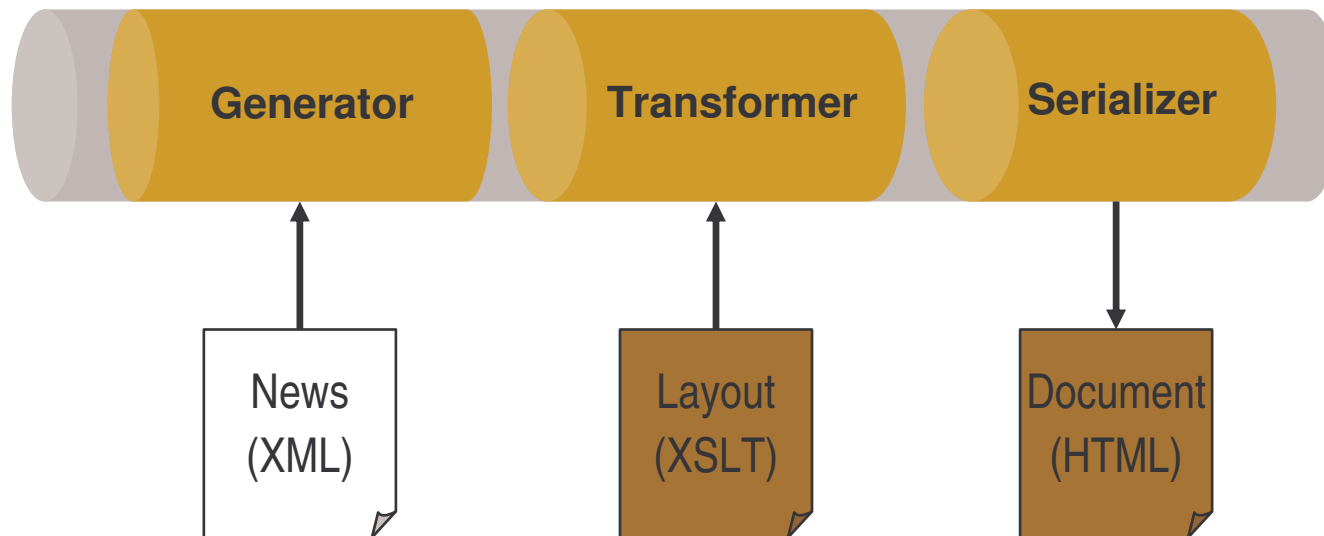
```
<uri>cocoon:/pipelines/portal/weblog</uri>
```

Optional
Configuration

```
</coplet-data>
```

A Pipeline is a pipeline is a ...

- Reads news from RSS feed
 - Example: <http://radio.weblogs.com/0107211/rss.xml>
- Transforms news to HTML
- Uses a simple Cocoon pipeline



It's all the same to the user

The image shows a screenshot of the Cocoon Portal web application. The browser window title is "Cocoon Portal". The page layout includes a left sidebar with navigation links: "Welcome", "Personalize", "Customize", "Information", and "Logout". The main content area is divided into several sections:

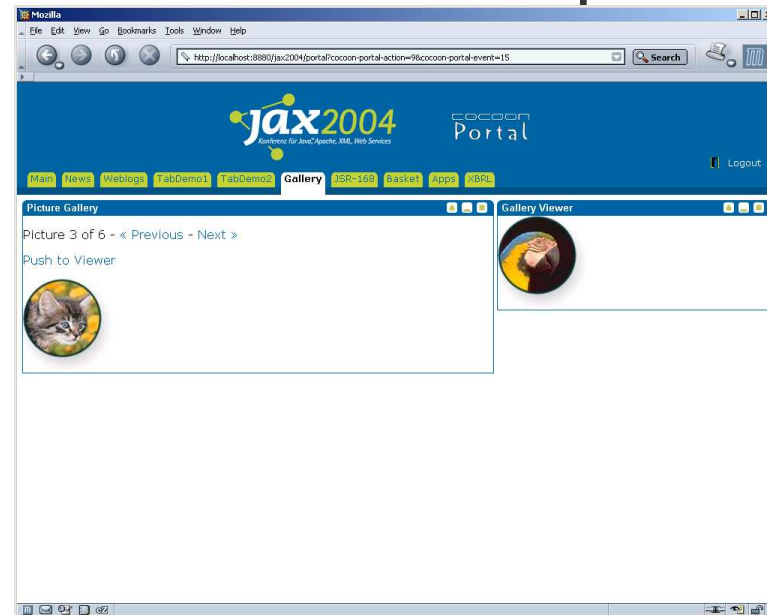
- Administration**: Includes links for "User Management", "Portal Management", and "Documentation".
- s&n News**: A list of news items with titles and dates, such as "S&N übernimmt Beteiligung an der Amadeus IT GmbH" (19.04.2002) and "CeBIT 2002 - Rückblick" (22.03.2002).
- My News**: A section with a "Newsfeed" dropdown menu set to "USA" and a "Change" button.
- Germany News**: A list of news items, including "Siemens Goes for" (Apr 25 2002 5:4) and "Czechs maintain" (Apr 25 2002 4:02AM).
- Banking News**: A list of news items, including "BCI warns of refinancing woes in Brazil" (Apr 25 2002 5:36AM) and "Welcome to the HSBC network" (Apr 25 2002 3:30AM).
- Feedback**: A section with a "Feedback" button and a message: "If you like this, check out the Cocoon homepage for more information."

Annotations with callout boxes point to various parts of the application:

- Static Coplet XML File**: Points to the "Welcome" link in the sidebar.
- Role Dependent Coplet Pipeline: XML + XSLT**: Points to the "Administration" section.
- Dynamic RSS Coplet Pipeline: Remote XML XSLT**: Points to the "Germany News" section.
- Dynamic Portlet using JSR 168**: Points to the "s&n News" section.
- Static Coplet Own Java Class**: Points to the "Feedback" section.

Coplet communication

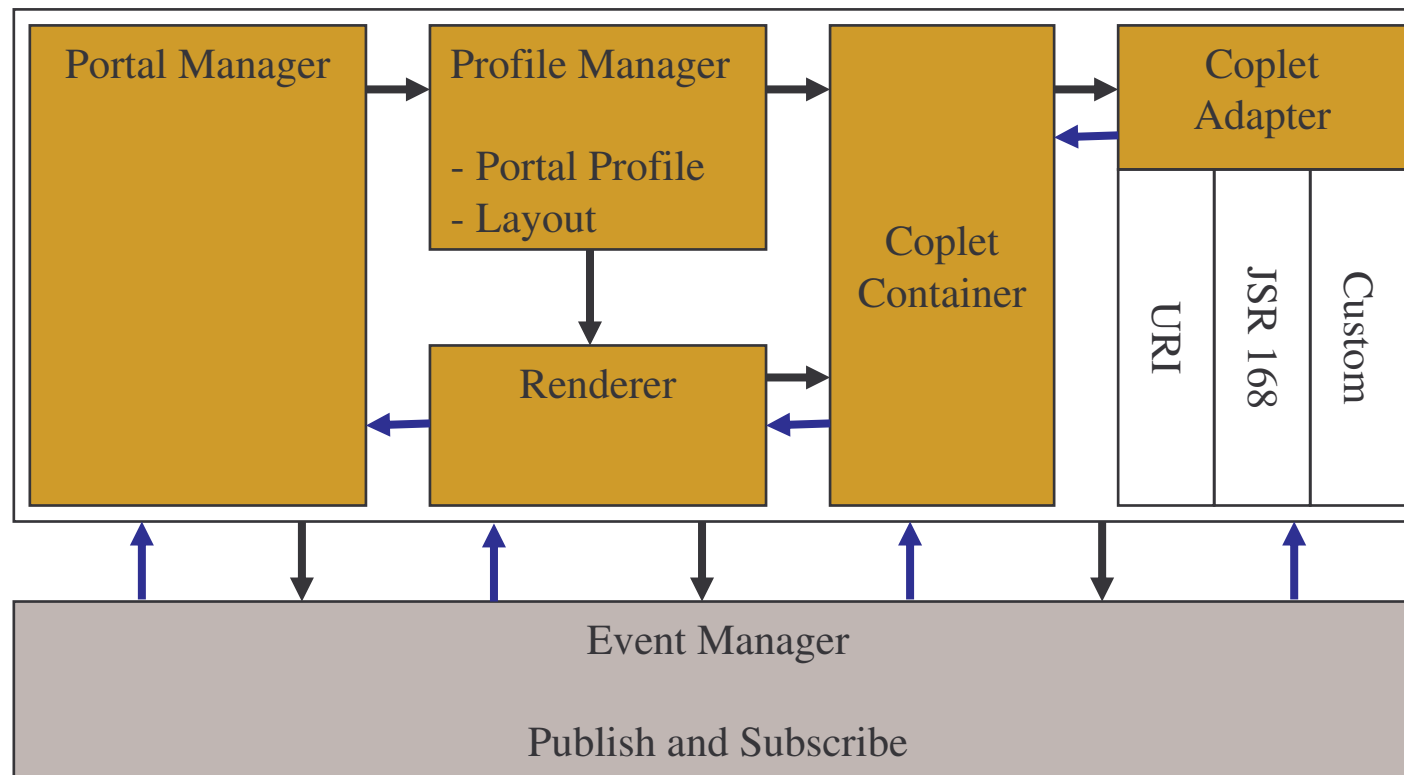
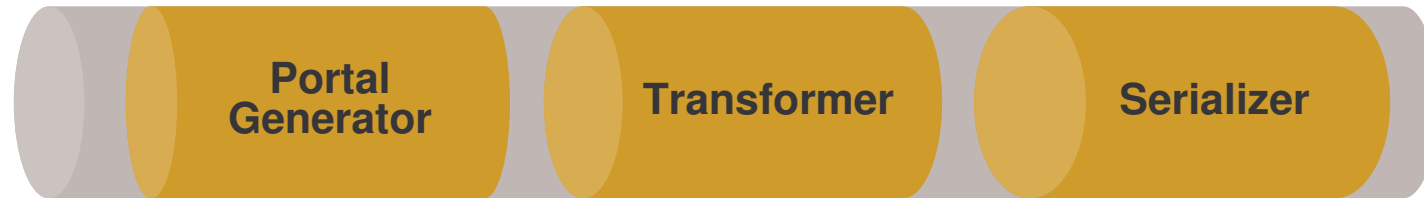
- Publish Subscribe mechanism
- Selection in one portlet affects other parts
- Display content in another area of the portal

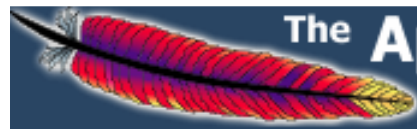


More Portal goodies

- Profile can be changed at runtime
 - Using events
 - Example: Important coplet changes position
- Layout engine can be used without additional Portal functionality
- Existing Cocoon applications can be integrated with no change

Technology Roundup



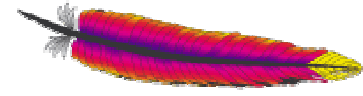


The **Apache Cocoon Project**

<http://cocoon.apache.org/>

COCOOON

Cocoon Portal Tools

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Tools - Concept

- Missing tools for the portal engine
- As the portal is highly customize- and extendable the tools must be too
- A framework for a framework
- Make it easy to develop/add tools
- Separate the tools from the portal

Requirements

- Provide an easy way to integrate/add tools to the Portal (Plugin-Architecture)
- Provide a standard how to develop tools for the Cocoon portal
- Offer a userinterface for functions provided by the Portal
- Provide examples

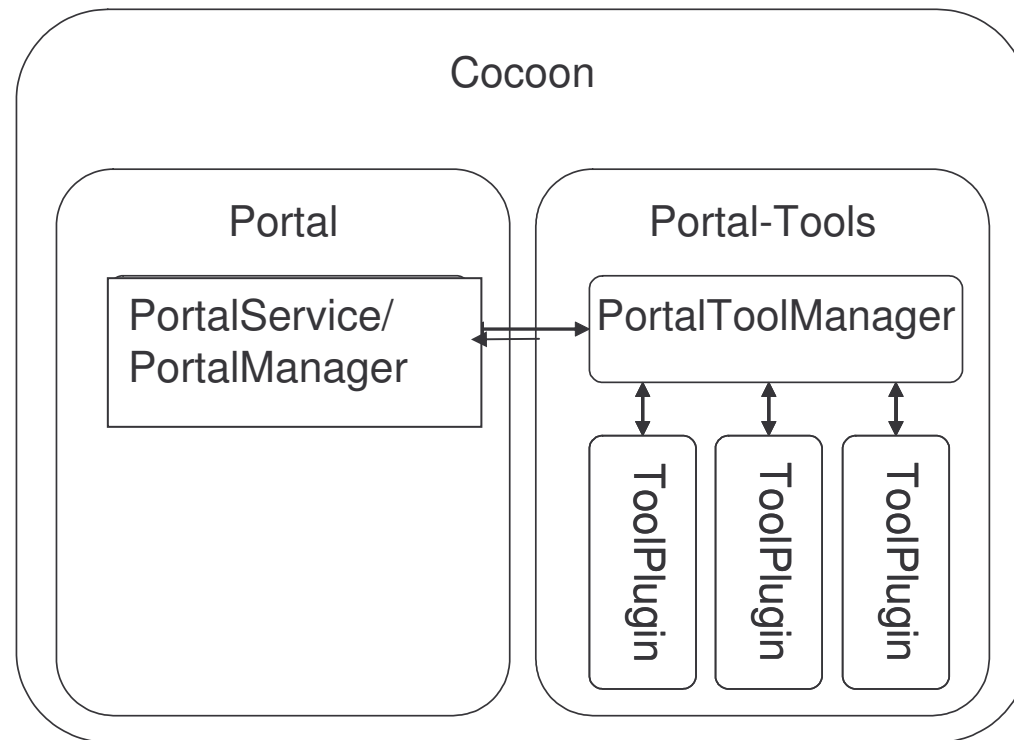
Concepts/Functionality

- Offer a unique userinterface for all tools
- Add/remove tools easily
- Automatic menu generation
- Provide i18n-Support
- Provide access/rights management for the tools
- Provide access to the important portal objects

Concepts/Functionality

- ATM only suitable for user tools, as we have only access to the users 'objects' via the portal.
- Requires the latest Cocoon 2.1.7

Tools Framework - Architecture



Tools Framework – Examples

- Coplex Management
- User Management

Coplet Management

- Functions
 - ❑ Change the skin
 - ❑ Move/Create/Delete/Configure
 - Tabs
 - Columns
 - Rows
 - Coplets



User Management

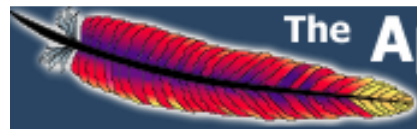
- Simple GUI-Prototype
- Just grabs the user data from the context and displays it
- Must be connected to the Database/LDAP/etc. for production use



The screenshot shows a web application interface for user management. At the top, there is a navigation bar with three tabs: 'Coplet-Verwaltung', 'Benutzer-Verwaltung' (which is active), and 'PortalTool Management'. Below the tabs, there is a sub-navigation bar with three links: 'Benutzerdaten anzeigen', 'Benutzerdaten editieren', and 'Benutzer hinzufügen'. The main content area is titled 'Benutzerdaten:' and contains a profile for a user named Christoph Kolumbus. On the left is a portrait of Christopher Columbus. To the right is a form with two sections: 'Basis-Informationen' and 'Kontakt Daten'. The 'Basis-Informationen' section includes fields for Vorname (Christoph), Nachname (Kolumbus), Titel (Mr.), UserID (guest), derzeitige Rolle (guest), and bevorzugte Spracheinstellung (it). The 'Kontakt Daten' section includes a field for eMail.

Basis-Informationen	
Vorname:	Christoph
Nachname:	Kolumbus
Titel:	Mr.
UserID:	guest
derzeitige Rolle:	guest
bevorzugte Spracheinstellung:	it

Kontakt Daten	
eMail:	

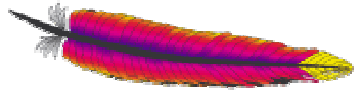


The **Apache Cocoon Project**

<http://cocoon.apache.org/>

COCOOON

Real Life II

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Portal Example at RZB/RIZ

- Raiffeisen Zentralbank Österreich (RZB)
- Raiffeisen Informatik Zentrum (RIZ)
- Worked jointly with S&N AG, BASF-IT Services to design and build the new Cocoon Portal version
- Cocoon Portal is the core of a new concept for employee workspace



Portal Example at RZB/RIZ

- Employee Workspace
 - ❑ Single view on existing Web applications with unified look and feel
 - ❑ Integration of additional utility applications (e.g. Google)
 - ❑ Integration of application navigation into portal
 - ❑ No changes to the underlying applications
 - ❑ Allow access to the same application in parallel – while maintaining state
 - e.g. Customer care application

Integration Applications

Distant Application directly

The screenshot shows a web browser window with the address bar displaying 'http://rzbax14/rsf/documentation.html'. The page title is 'RSF Documentation - Raiffeisen Services Framework Dokumentation - Microsoft Internet Explorer'. The page content includes a navigation menu on the left, a main content area with a table of contents, and a footer with contact information for RIZ IT 4 U.

Navigation Menu:

- Home
- Setup
- Problems
- Documentation
- Test Director
- Maven Goals
- Java Projects
 - RSF
 - RSFPresentation
 - RSFJMS
 - RSFSecurity
 - RSFWSIFProvider
 - RSFWorkflow
 - RSFTest
- Project Documentation
 - Front Page
 - Project Info
 - Project Reports
 - Development Process

Table of Contents:

Module	Type	Document.html	Document.doc
Spezifikation	Konzept	RSF_Spezifikation.htm	RSF_Spezifikation.doc
Gesamtdokument	technical Documentation	RSFGesamtdokument.htm	RSFGesamtdokument.doc

Basisservices:

Name	tech. Doku	xsd	wsdl	Konfig. in
Authentication Service	MS Word HTML	.xsd	.wsdl	rsfconfig.xml
Authorisation Service	MS Word HTML	.xsd	.wsdl	rsfconfig.xml
Caching Service	MS Word HTML	n/a	n/a	rsfconfig.xml bei zu cachendem Service
Logging Service	MS Word HTML	n/a	n/a	n/a
Mailing Service	MS Word HTML	.xsd	.wsdl	rsfconfig.xml
Resource Service	MS Word HTML	.xsd	.wsdl (config)	rsfconfig.xml
Storage Service				rsfconfig.xml

Integrating Applications

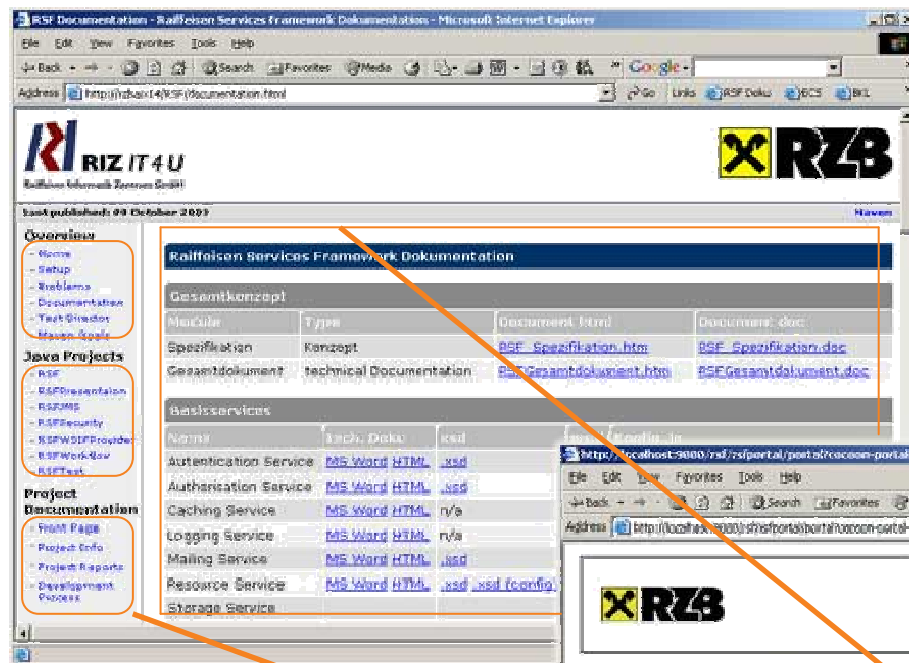
Distant Application in the Portal

The screenshot displays the RZB Demo Portal interface. At the top, there's a navigation bar with links like 'Schreibtisch', 'RSF', 'Bausparen', 'RVWeb', 'Elba', 'Google', and 'IBAN'. Below this, the main content area is titled 'Raiffeisen Services Framework Dokumentation' and 'Gesamtkonzept'. It features a table with columns for 'Module', 'Type', 'Document html', and 'Document doc'. The table lists various modules like 'Spezifikation', 'Gesamtdokument', and 'Basisservices'. To the right, there's a table titled 'Basisservices' with columns for 'Name', 'tech. Doku', 'xsd', 'wsdl', and 'Konfig. in'. This table lists services like 'Authentication Service', 'Authorisation Service', 'Caching Service', 'Logging Service', 'Mailing Service', and 'Resource Service'. The bottom of the page shows a 'Local intranet' section with a list of links including 'Schreibtisch', 'Login', 'Logout', 'Neue Instanz', 'Home', 'Setup', 'Problems', 'Documentation', 'Test Director', 'Maven Goals', 'RSF', 'RSFPresentation', 'RSFJMS', 'RSFSecurity', 'RSFWSPProvider', 'RSFWorkflow', 'RSFTTest', 'Front Page', 'Project Info', 'Project Reports', and 'Development Process'.

Module	Type	Document html	Document doc
Spezifikation	Konzept	RSF Spezifikation.htm	RSF Spezifikation.doc
Gesamtdokument	technical Documentation	RSFGesamtdokument.htm	RSFGesamtdokument.doc

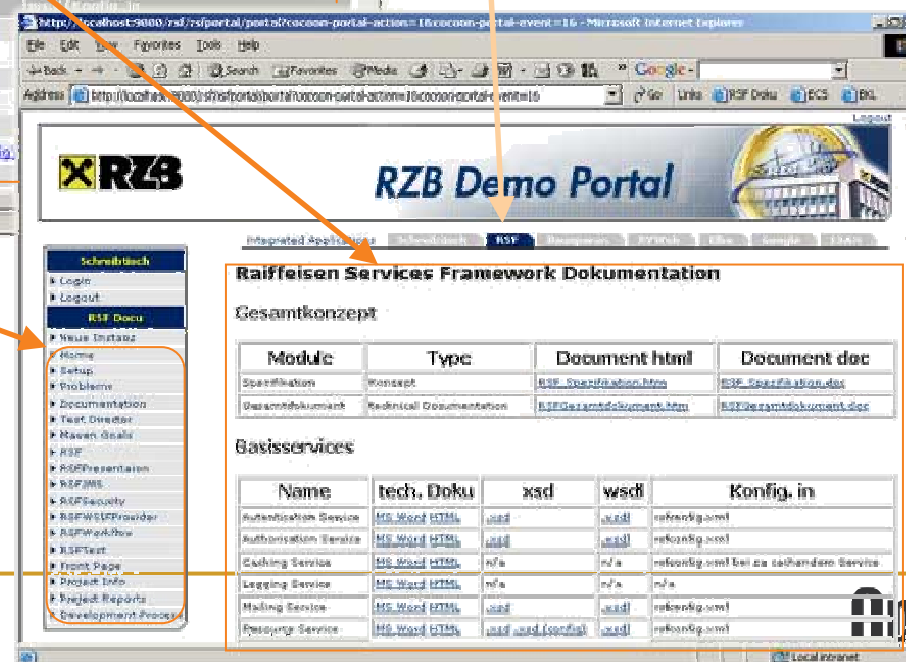
Name	tech. Doku	xsd	wsdl	Konfig. in
Authentication Service	MS Word HTML	.xsd	.wsdl	rsfconfig.xml
Authorisation Service	MS Word HTML	.xsd	.wsdl	rsfconfig.xml
Caching Service	MS Word HTML	n/a	n/a	rsfconfig.xml bei zu cachelndem Service
Logging Service	MS Word HTML	n/a	n/a	n/a
Mailing Service	MS Word HTML	.xsd	.wsdl	rsfconfig.xml
Resource Service	MS Word HTML	.xsd .xsd (confi)	.wsdl	rsfconfig.xml

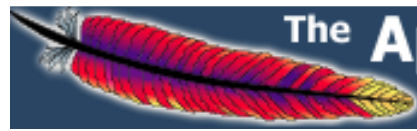
Integrating Applications



aggregated menu

integrated applications



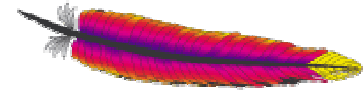


The **Apache Cocoon Project**

<http://cocoon.apache.org/>

COCOON

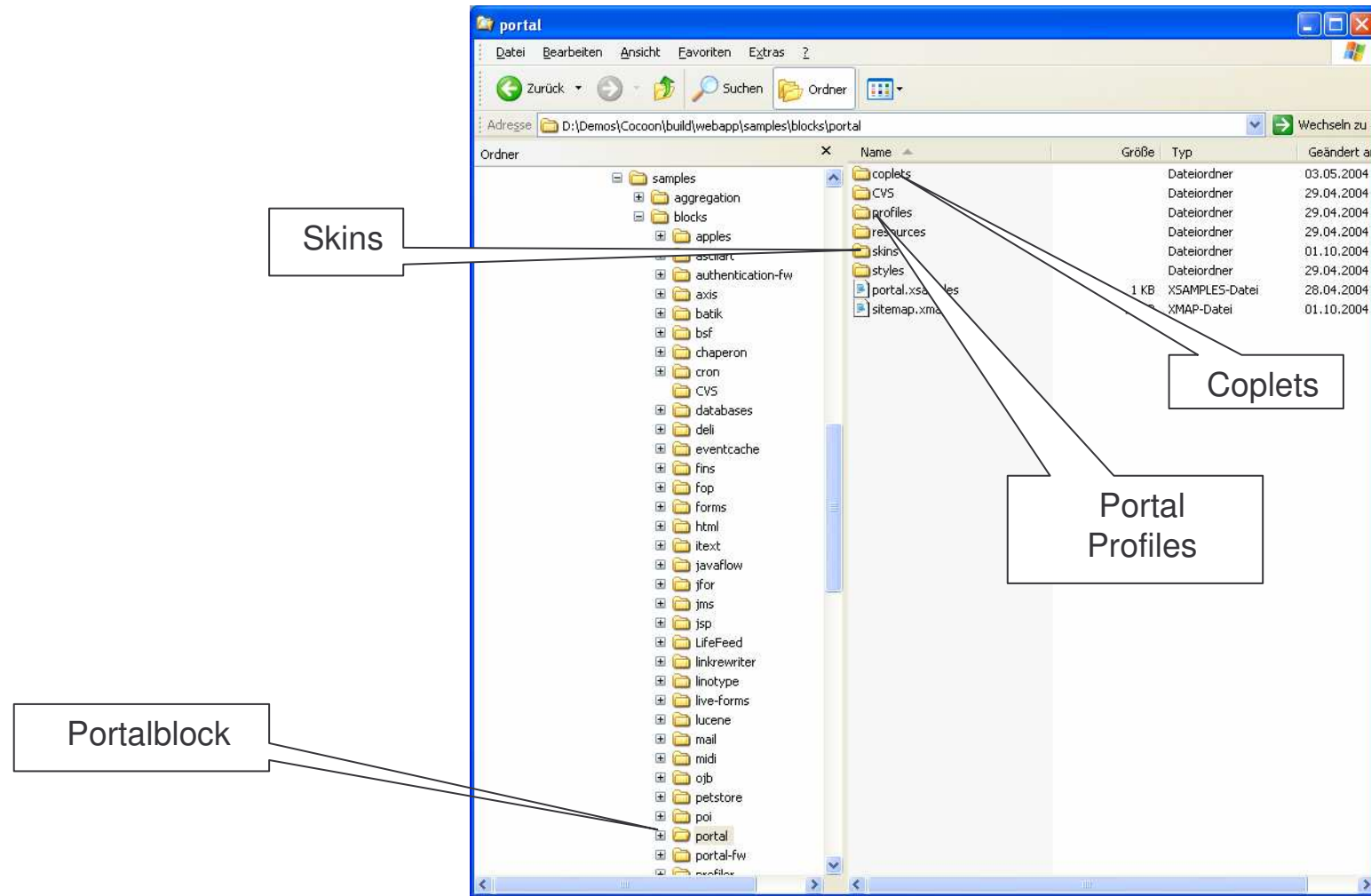
Let's get portalized with
Cocoon

ApacheCon
 **Europe 05**

Let's get Portalized

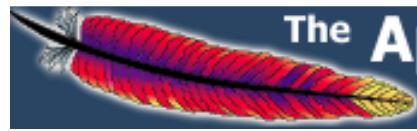
- Download Cocoon source distribution
 - cocoon.apache.org
- “build.bat” to build
- “cocoon servlet” to start
- Complete portal solution **demo** contained in the “blocks”

Let's get Portalized - files



The Future

- The Cocoon Portal is still growing
 - ❑ WSRP consumer support is coming soon
 - ❑ New additional components
 - Hot deployment of portlets
 - ❑ Spring Integration?
 - ❑ Better exchange with other Apache portals project
 - ❑ Might be based on Cocoon 2.2?

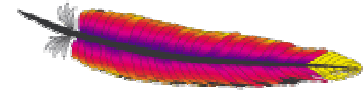


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COCOOON

Thanks for your attention!

ApacheCon
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