



ArsDigita

- The company
- Introduction to the ACS
- ... Custom web solutions

Barcelona, 2nd June 2001

The Sell

- ◆ Solutions powered by our open source toolkit – the ArsDigita Community System (ACS) feature:
 - greater flexibility and extensibility
 - reduced risk
 - simplicity of ownership
 - lower total cost of ownership
- ◆ ArsDigita enables customers to focus scarce resources on effectiveness and competitive differentiation rather than costly software licenses, multi-vendor system integration and software maintenance

The Vision

The ArsDigita Community System will be the worldwide standard for web application development. We will achieve our vision through:

- The open source paradigm
- Free and open education
 - ◆ Boot Camps / Problem sets
 - ◆ University courses
- Delivery of best in class solutions on time and on budget

History

- ◆ ArsDigita released ACS Version 1.0 in '97, formed by a handful of consultants in Cambridge, USA, including Philip Greenspun
- ◆ 200+ web services built since 1997
- ◆ \$38M in funding from General Atlantic Partners, Greylock, Trident, and Bain
- ◆ \$27MM revenue in 2000
- ◆ 29,000+ copies of the ACS downloaded to date
- ◆ Trained 5,000+ developers on the ACS
- ◆ Worldwide ACS developer community is more than 2000 members strong
- ◆ 185 professionals in 6 offices, including Munich and London
- ◆ High impact and diverse customer base globally

Why a Toolkit?

Content Management

- ◆ Content Repository
- ◆ Template Manager
- ◆ Metadata Manager
- ◆ Workflow
- ◆ Task Lists
- ◆ Site Map Browser
- ◆ Categorization
- ◆ Content Monitoring
- ◆ Content Association
- ◆ Multiple Language Support
- ◆ File Manager
- ◆ WML/XML
- ◆ Standard Production Interface

Commerce

- ◆ Product Catalog
- ◆ Order Management
- ◆ Inventory Mgmt
- ◆ Merchandising Mgmt
- ◆ Cross-sell/ Up-sell
- ◆ Multiple Store Fronts
- ◆ Multiple Price Lists
- ◆ Limited Time Pricing
- ◆ Promotion/ Discount
- ◆ Shopping Cart
- ◆ Tax & Shipping Calc
- ◆ Authorization
- ◆ Payment Processing
- ◆ Gift Certificates
- ◆ Wish List/ Gift Registry
- ◆ Formal Reviews
- ◆ Software Download

Marketing & Analysis

- ◆ Targeted E-mail Campaigns
- ◆ User Value Tracking
- ◆ Survey Administration
- ◆ Unified User Data Model
- ◆ User Profiling
- ◆ Advertisement Mgmt
- ◆ Banner Ideas
- ◆ Co-Branding
- ◆ Session Tracking
- ◆ Click-through History
- ◆ Sales Reports
- ◆ Database Change History

Personalization

- ◆ User Recognition
- ◆ Implicit/ Explicit User Information Gathering
- ◆ Visitor Experience Mgmt
- ◆ Personalized Ads
- ◆ User Group Definition
- ◆ Portal Management
- ◆ Categorization
- ◆ Recommended Products
- ◆ Group-based Pricing
- ◆ Comprehensive Order History
- ◆ Frequent Buyer Recognition

Customer Self Service

- ◆ Online Help
- ◆ E-mail Response Mgmt
- ◆ FAQ
- ◆ User Feedback Mgmt
- ◆ Site-wide Search
- ◆ Site Glossary
- ◆ General Alerts/Notifications
- ◆ E-mail Alerts
- ◆ Comprehensive User History
- ◆ Web-based E-mail

Collaboration

- | | | | | |
|---------------------------|---------------------|-------------------------------|-----------------------------|--------------------|
| ◆ Workflow Management | ◆ Discussion Boards | ◆ File Storage/ Sharing | ◆ Project Management | ◆ General Comments |
| ◆ Intranet | ◆ Contact Manager | ◆ Collaborative Presentations | ◆ Development Tracker | ◆ Task Management |
| ◆ Group/Personal Calendar | ◆ Member Reviews | ◆ Surveys/ Polling | ◆ Event Mgmt & Registration | ◆ Member Homepages |
| ◆ Chat | ◆ Member Directory | ◆ Classifieds/ Auctions | ◆ Education Management | ◆ User Ratings |

Administration

- | | | | | |
|---------------|---------------------|------------------------------|----------------------|-----------------------|
| ◆ Subsites | ◆ Site Management | ◆ Robot Detection/ Redirects | ◆ Parties and Groups | ◆ LDAP Authentication |
| ◆ Permissions | ◆ User Registration | ◆ Messaging | ◆ Package Manager | ◆ Object System |
| | | ◆ Templating | | |

ACS Customers

Partial List of Customers Serviced By ArsDigita

Oracle
Siemens
Deutsche Bank
Hewlett-Packard
Levi Strauss
The World Bank
Environmental Defense Fund
Away.com
WGBH

Partial List of Customers That Have Downloaded and Developed ACS-Based Solutions On Their Own

United Way
Disney
Solomon Smith Barney
Pfizer
i2
SAP
Nokia

Case Studies

site 59

SIEMENS

away.com

wineaccess.com
The Largest Online Wine Shopping Community



- ◆ Problem:
 - Travel industry -- perishable inventory
- ◆ Opportunity:
 - bundle different travel products for last minute sale to different customer segment – constrained by time and need for spontaneity, not cash
- ◆ Enabler:
 - TRACE aggregation/ package management solution
- ◆ Result:
 - *Forbes, Wall Street Journal* Best of Web
 - Closed nearly \$20M 2nd round funding from blue-chip financial and strategic backers
 - *PC Magazine* Top 100

- ◆ Problem:
 - Sales force effectiveness and efficiency in closing complex telecom switch deals
- ◆ Opportunity:
 - Share the best with the rest
- ◆ Enabler:
 - Global *flexible* knowledge management system
- ◆ Result:
 - APQC Best of Web 1999
 - \$20 million *annual* ROI claimed by Siemens, on \$2 million tech investment
 - Rolling out across other ICN functions and Siemens divisions

- ◆ Problem:
 - Small wine retailers facing dis-intermediation by big-box and e-tailers
- ◆ Opportunity:
 - Collaboration through shared web service to enhance customer loyalty and leverage purchasing volumes back into supply chain
- ◆ Enabler:
 - Store-level and service-wide community
 - POS inventory aggregation across participating network for 100% fulfillment
- ◆ Result:
 - Covered as one of most innovative web services of 2000 by CNN.com



Harnessing Customers

- ◆ Problem:
 - Growing beyond niche ecotourism
- ◆ Opportunity:
 - Customer *community* at the core of the service
- ◆ Enabler:
 - Personalization to hook casual visitor
 - Journal sharing/ trip reports for travelers
 - Thousand-operator extranet to book through
- ◆ Result:
 - Web's most popular adventure travel site
 - 1 million registered members
 - Order of magnitude lower cost for similar result vs. others
 - *Forbes* Best



Custom Solutions with the ArsDigita Community System

Questions and Comments:
Contact Tracy Adams (teadams@arsdigita.com)

Objective: A Custom Solution

Platform requirements key to customizable solutions:

- ◆ The platform provides 80% of the solution you need.
- ◆ Architecture provides flexibility and control.

ArsDigita Community System (ACS) is the ideal platform for custom solutions.

ACS Evolution

3.x - 1998

- ◆ User-centric data model
- ◆ Many content tables
- ◆ Core utility libraries
- ◆ Page-centric
- ◆ TCL

From its founding, the mission of ArsDigita has been to build the world's standard open-source web development platform.

4.0 - 2000

- ◆ Object-centric data model
- ◆ Sophisticated permissioning
- ◆ Content services
- ◆ Subsites
- ◆ Packages
- ◆ Templates
- ◆ TCL or Java Scripts

4.5 - 2001

- ◆ Application logic layer
- ◆ Object-relational persistence layer
- ◆ Embeddable components
- ◆ XSLT for presentation
- ◆ Standards-based

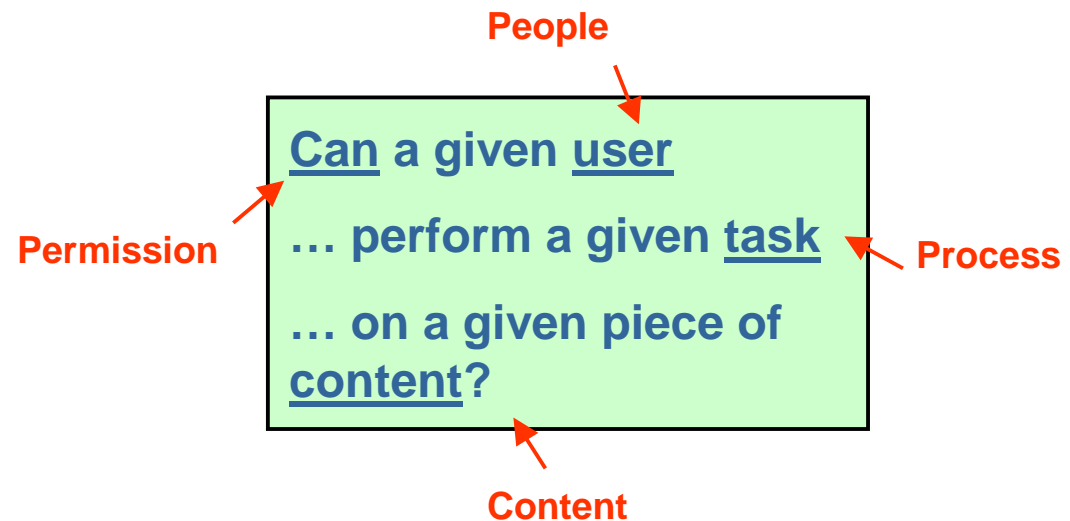
ACS evolution has emphasized:

- Creating generic solutions
- Upgrading architecture

Most web applications have the same basic needs

- ◆ Represent people and relationships
- ◆ Control access to functionality and data
- ◆ Manage content
- ◆ Manage processes

Often, we need answers to questions that span all solution areas above:



Content Management building blocks

People

- Users
- Authors
- Editors
- Publishers

Content

- Articles (extendable fields, categorization, search)
- Images



Permission

- Your account with personalized content
- Content management administrator

Process

- Content Management (writing, editing, approving, publishing)
- Customizing site

Knowledge management building blocks

People

- Users
- Countries
- Knowledge buddies
- Administrators

Content

- Knowledge objects (extendable fields, categorization, search)
- Comments

The screenshot shows a Microsoft Internet Explorer window displaying a web page titled "Sales Project: Multimedia Trial For Telekom Malaysia 2". The browser's address bar shows the URL: http://sharenet.arsdigita.com/library/object-view.tcl?obj_id=20752. The page content includes:

- My Workspace:** [Sales Projects](#) : Multimedia Trial For Telekom Malaysia 2
- View:** [[All Questions](#) | [Unanswered Questions](#) | [Linked Objects](#) | [Completed Content](#)]
- [Send this page to a colleague](#)
- Date Created:** Apr 30, 1999
- Last Modified:** May 16, 2001 ([History](#))
- Owner:** [Original Siemens](#)
- Name:** Multimedia Trial For Telekom Malaysia 2
- Overview:** Established synergy within the partnership between Siemens and Telekom Malaysia both inside and outside the project framework are expected to have a positive impact on the performance of
- Keywords:** Multimedia, Business Model, Business Plan, Malaysia
- Markets:**
 - Link to [Malaysia Multimedia Market](#) by [Original Siemens](#)
- As multimedia development is at an infancy stage in Malaysia, it is difficult for us to foresee the market potential. On top of this, there is no letter of credit issued thus payment from our customer...
- [Add a comment](#)
- View:** [[All Questions](#) | [Unanswered Questions](#) | [Linked Objects](#) | [Completed Content](#)]
- [Private] [Make public](#) | [Access Control](#) | [Delete Object](#)
- cciasolhw@arsdigita.com [My Objects](#) | [Incentive System](#) | [E-mail Alerts](#) | [Glossary](#) | [Logout](#) | [Help](#)

Permission

- Viewing and editing objects
- Administration

Process

- Entering and updating knowledge
- Publication of the knowledge
- Increasing quality of knowledge

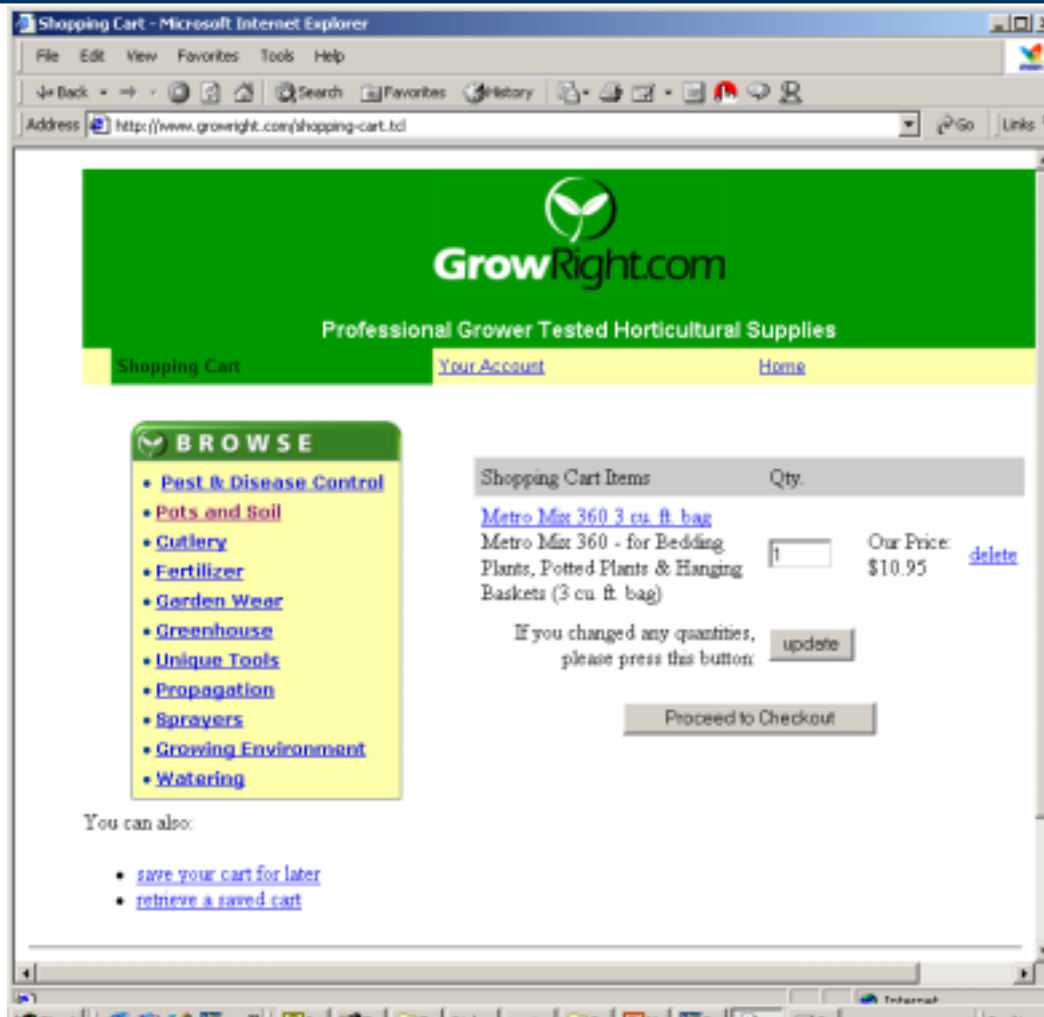
Ecommerce building blocks

People

- Users
- Discount groups
- Administrators
- Vendors

Content

- Products
- (extendable fields, categorization, search)
- Comments, ratings



Permission

- Your account
- Administrators (several levels)

Process

- Buying process
- Customer service
- Full-filling orders

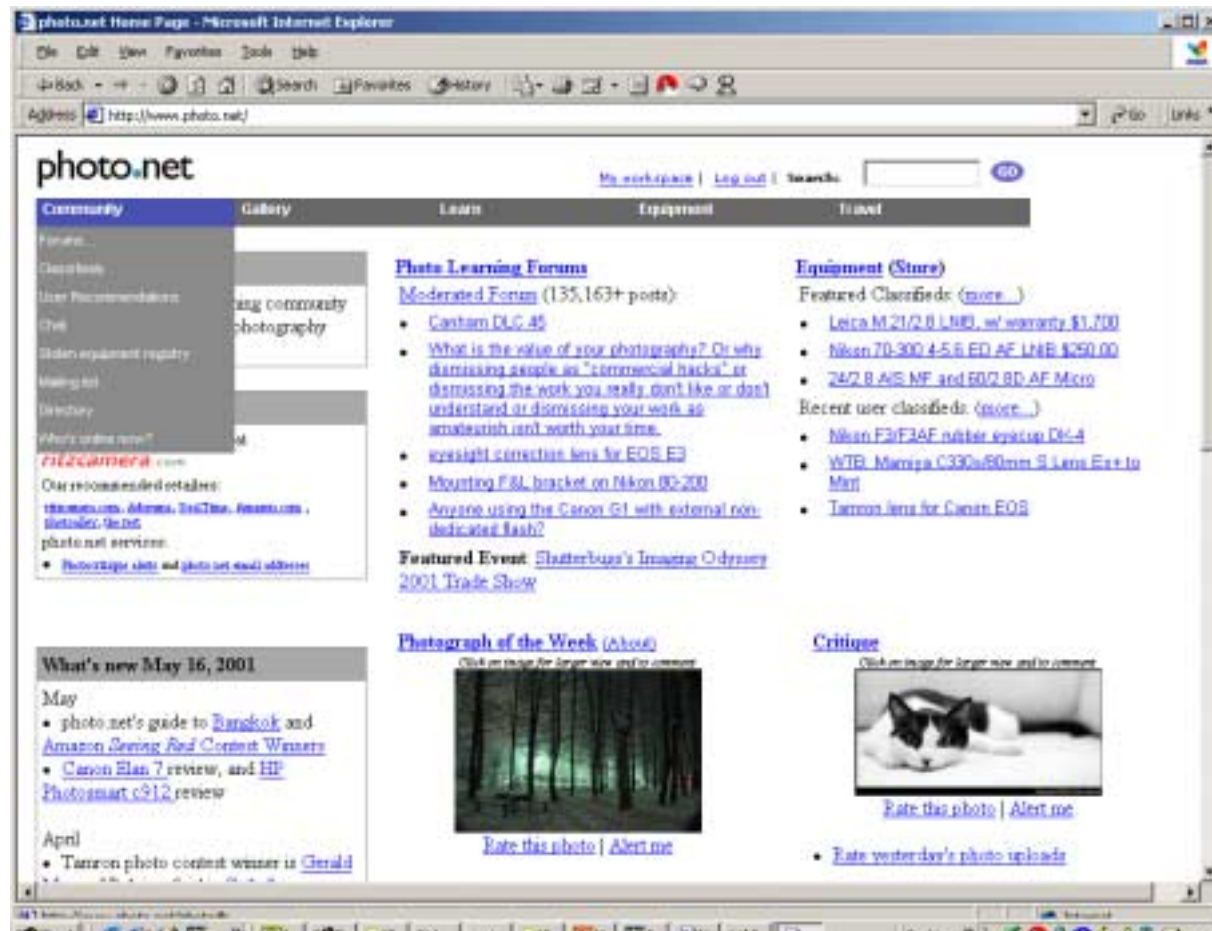
Collaborative education building blocks

People

- Users
- Moderators
- Publishers
- Vendors
- Admin

Content

- Articles
- Discussion forums / Classifieds
- Chat
- Comments / ratings



Permission

- User groups
- Moderating content and membership

Process

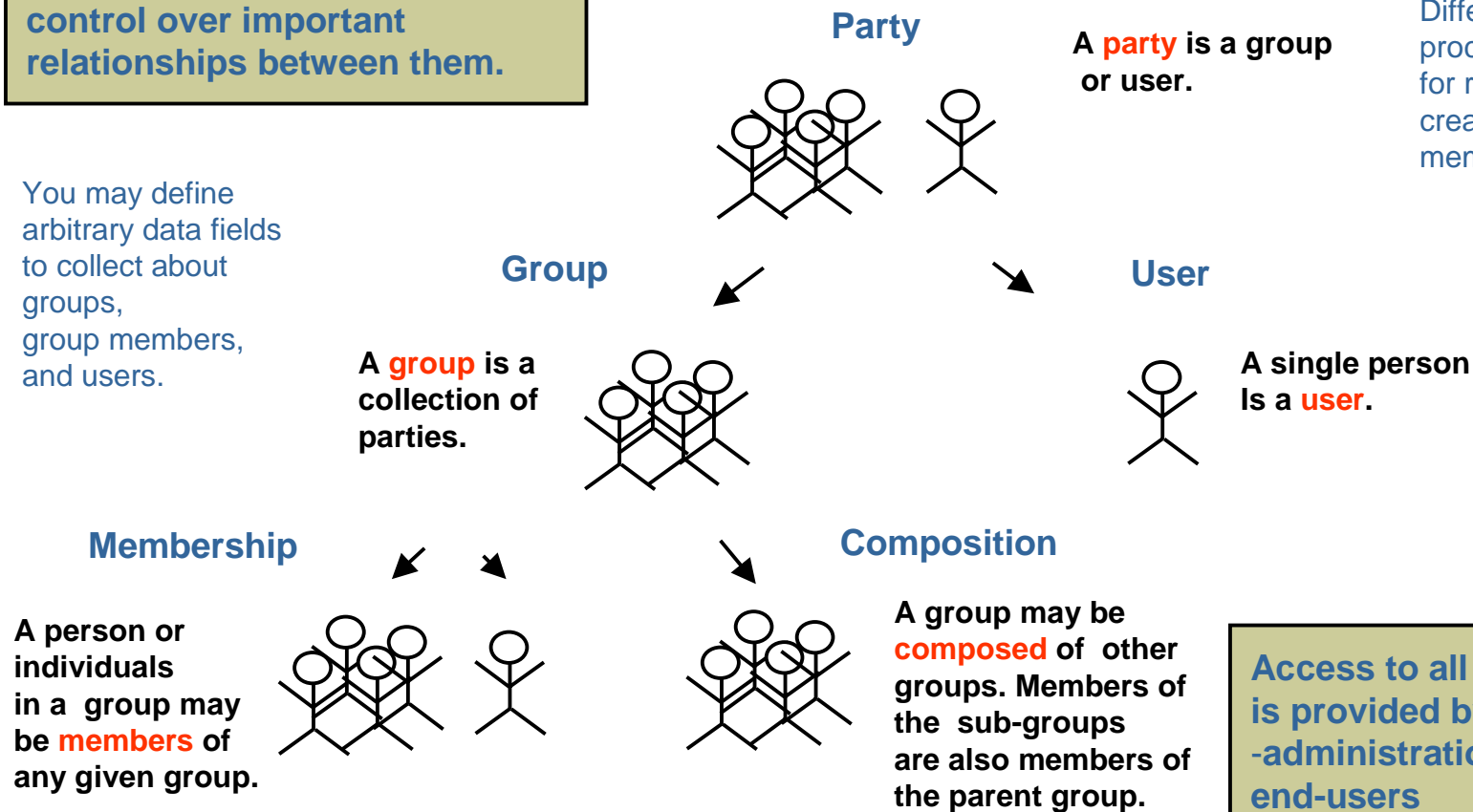
- Approving submissions
- Contests
- Keeping information up to date

Representing people and relationships

ACS can represent and provide control over important relationships between them.

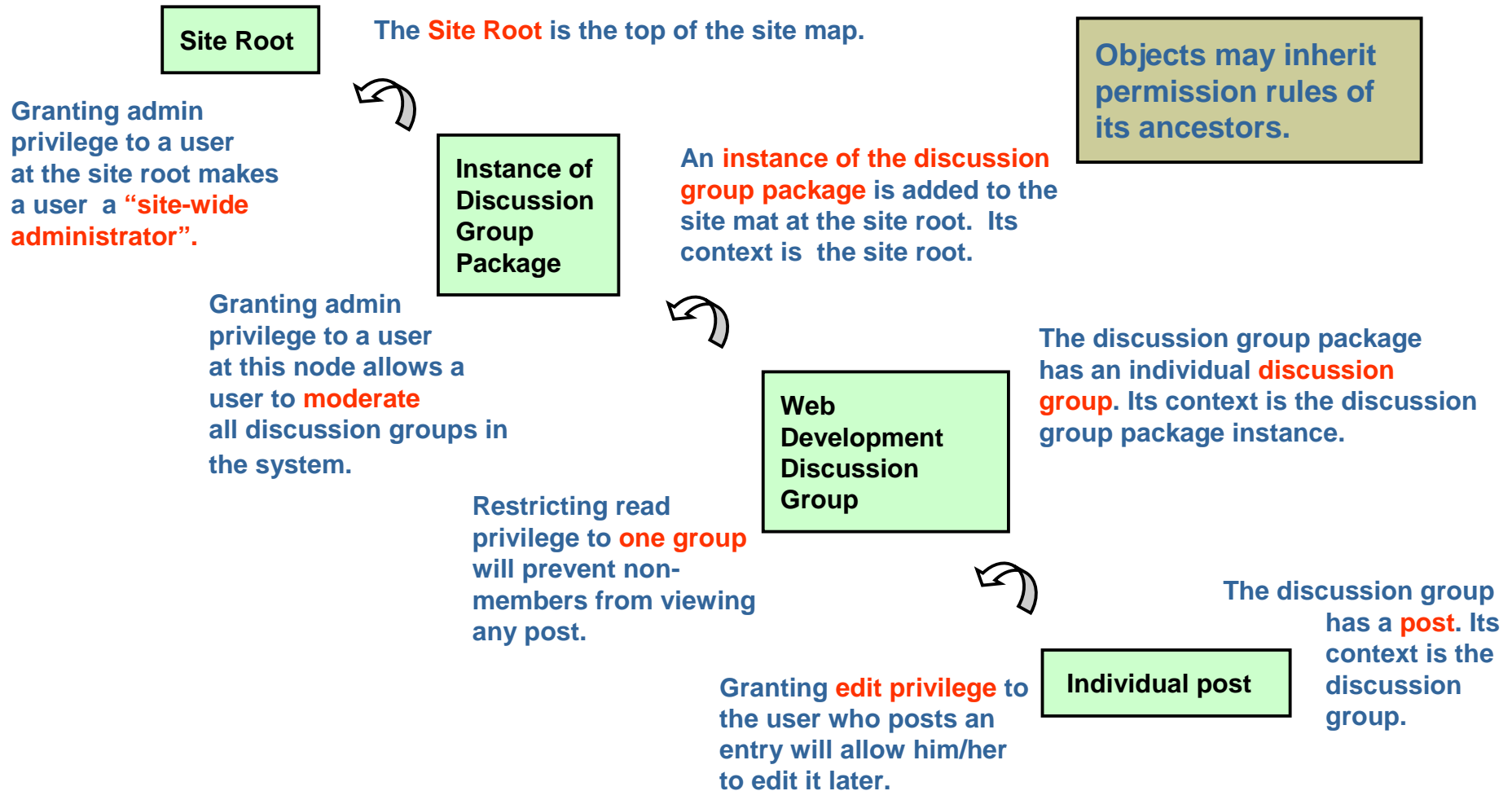
You may define arbitrary data fields to collect about groups, group members, and users.

Different approval processes are supported for registration, group creation and group membership.



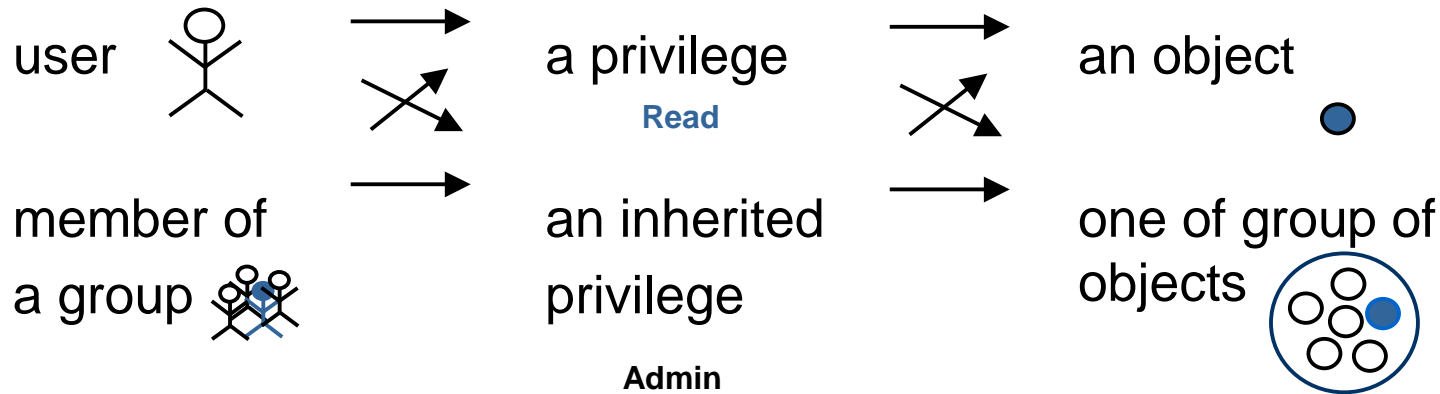
Access to all functionality is provided by:
-administration pages for end-users
-APIs for developers

Permissions on groups of objects



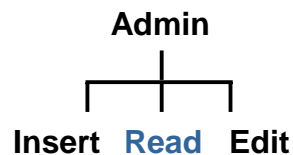
Controlling access to functionality and data

Does party x have y privilege on object z?



One type of privilege may **encompass** others.

Common privileges are installed with ACS. Others privileges and privilege inheritance may be added with APIs.



One API answers the question “Does party x have y privilege on object z” for all situations.

Managing content

Extend ACS to meet your specific content needs by creating your own custom content types.

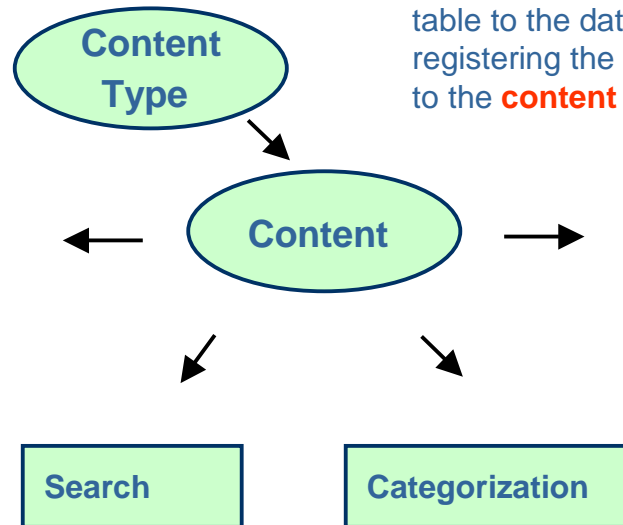
Content is broadly defined as any collection of text or binary-based elements.

Custom content types are created by adding a table to the database and registering the attributes to the **content services**.

ACS **version control** tracks the change history.

Versioning

You can define an approval and publishing **process** to control which revision is active.



Comments and rating

Gathering comments and ratings about pieces of content allow users to **collaborate**.

Search

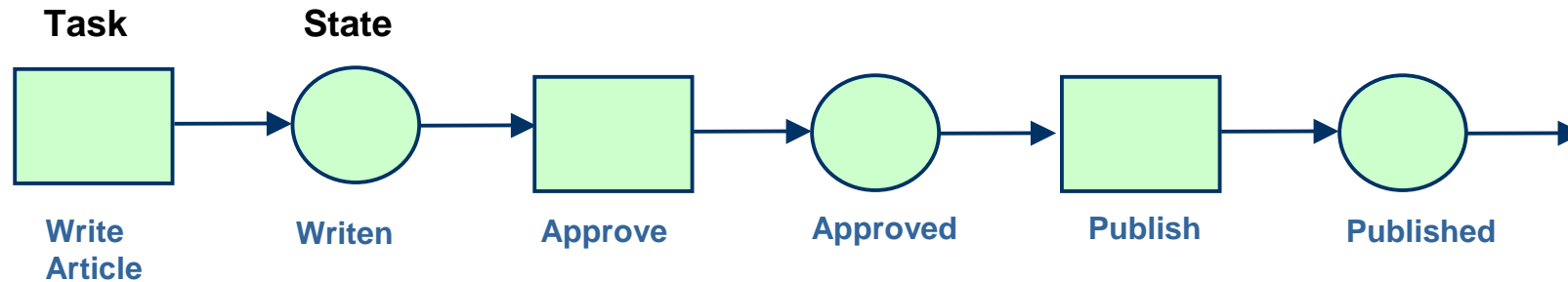
Categorization

Active revisions may be **searched** by content type and attribute.

Access to all functionality is provided by:

- Content Management System for end-users
- APIs for developers

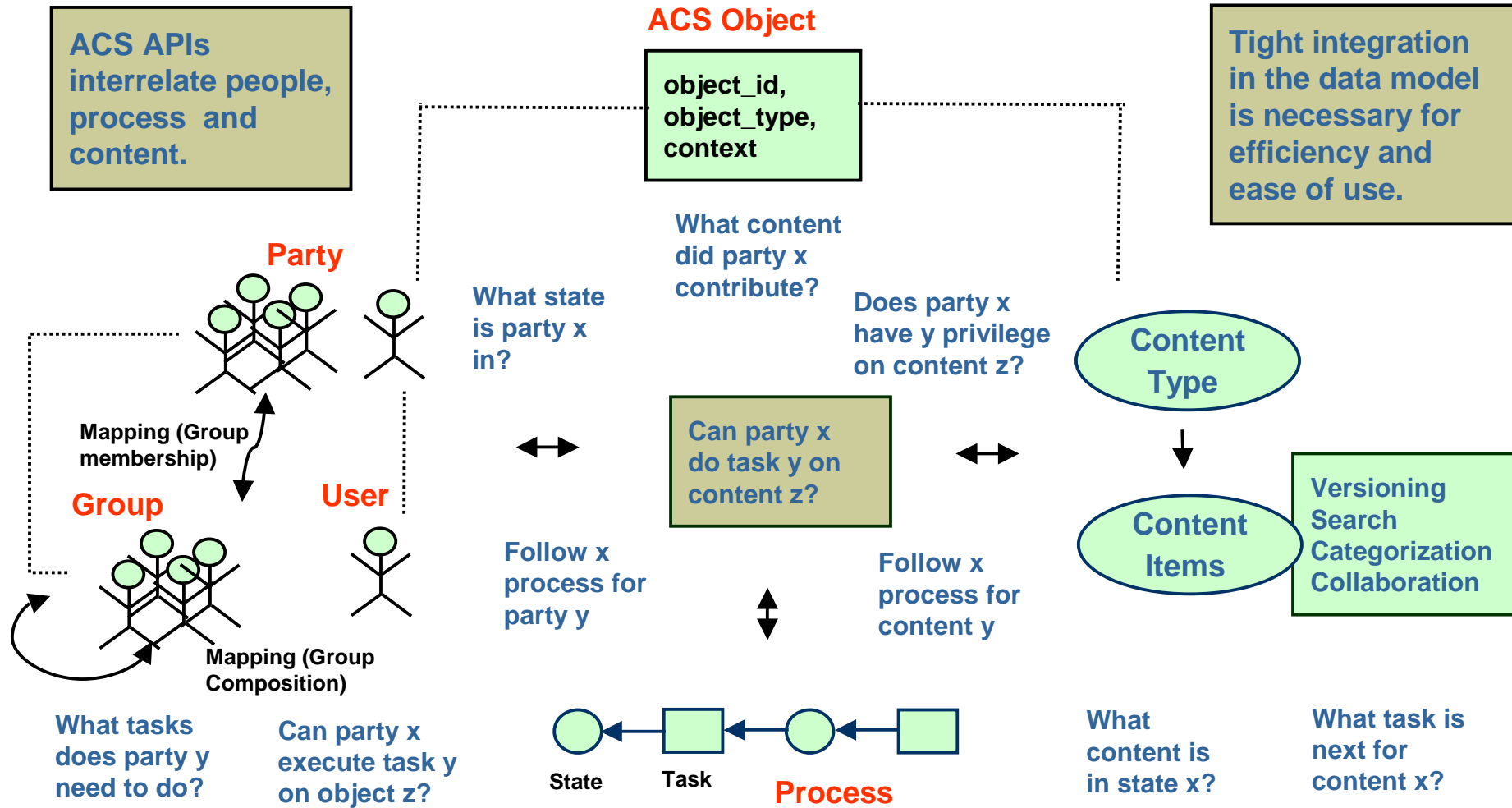
Defining and managing processes



- ◆ Adding processes to your application
 - Define states in the process
 - Define tasks that will move an object from one state to another
 - Define which users or what event can execute each task
 - Adding objects to the process (APIs only)

Access to functionality is provided by:
-Workflow for end-users
-APIs for developers

Integrating People, Process, and Content



Objective: A Custom Solution

Platform requirements key to customizable solutions:

- ◆ The platform provides 80% of the solution you need.
- Architecture provides flexibility and control.

ArsDigita Community System (ACS) is the ideal platform for custom solutions.

ACS is easy to modify

ACS is designed for modification

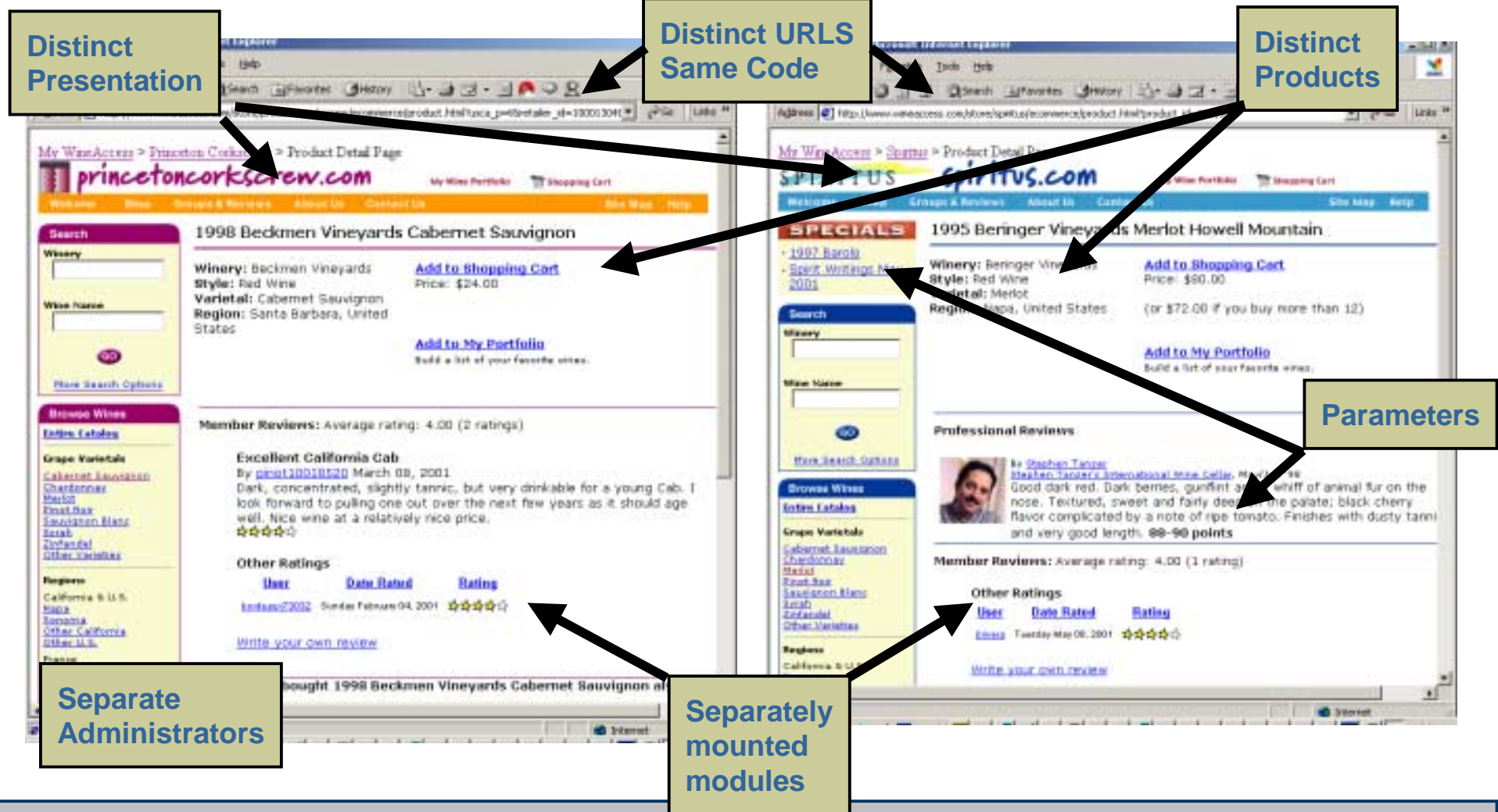
- ◆ Open source
- ◆ Knowledge of how to modify easily available
- ◆ Training programs
- ◆ Community of developers

It is easy to access the source code and knowledge needed to modify the ACS platform.

Modifying ACS is maintainable

- Control of site map and subsite capability
 - Multiple instances of same code
 - Specific content, presentation, parameters and modules in each instance
- Control of Presentation
 - Consistent styling of content
 - Tailored content delivery
 - Re-usable interface components
- Isolation from schema changes

Subsites example – multiple store fronts



Consistent styling of content

XML Document A

```
<news>
<title>ACS 5 released</title>
<body>ACS is the best in the world</body>
</news>
```

HTML Output after Document A is transformed...

ACS 5 released
ACS is the best in the world.

Using 1st News XSL Style sheet

ACS 5 released
ACS is the best in the world.

Using 2nd News XSL Style sheet

XML Document B

```
<contentx>.....</contentx>
<news>
<title>ACS 5 released</title>
<body>ACS is the best in the world</body>
</news>
<contenty>.....</contenty>
```

HTML Output after Document B is transformed...

.....
ACS 5 released
ACS is the best in the world.
.....

Using 1st News XSL Style sheet

.....
ACS 5 released
ACS is the best in the world.
.....

Using 2nd News XSL Style sheet

Tailored content delivery

XML Document A

```
<news>
<title>ACS 5 released</title>
<body>ACS is the best in the world</body>
</news>
```

User Environment

Web
Cobrand 1

Web
Cobrand 2

Palm Pilot

Telephone

After Transformation

ACS 5 released

ACS is the best in the
world.

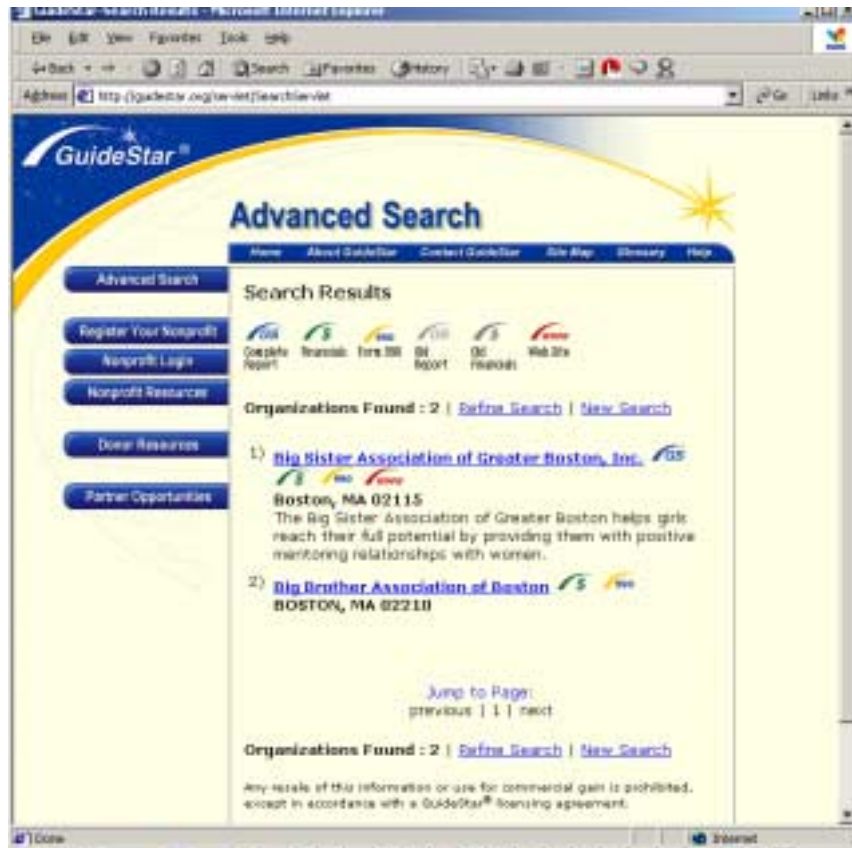
ACS 5
released

*ACS is the best in
the world.*

WML

VoiceXML

Customizable Content Delivery - Cobrand Example



The screenshot shows the GuideStar.org website with an "Advanced Search" interface. The page features a blue header with the GuideStar logo and a navigation menu. The main content area displays search results for "Organizations Found : 2". The results list two organizations: "Big Sister Association of Greater Boston, Inc." and "Big Brother Association of Boston". Each result includes the organization's name, location (Boston, MA), and a brief description. The page also includes a "Jump to Page" section and a disclaimer at the bottom.



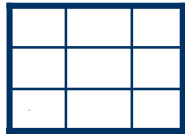
The screenshot shows the Helping.org website with a search results page. The page features a blue header with the Helping.org logo and a navigation menu. The main content area displays search results for "Organizations Found : 2". The results list two organizations: "Big Sister Association of Greater Boston, Inc." and "Big Brother Association of Boston". Each result includes the organization's name, location (Boston, MA), and a brief description. The page also includes a "Jump to Page" section and a disclaimer at the bottom.

Reusable Interface Components (Bebop)

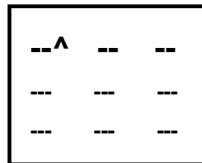
Text Block



Grid



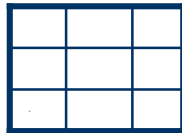
Sortable list



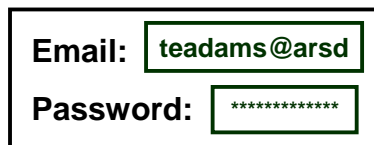
Tabbed-pane



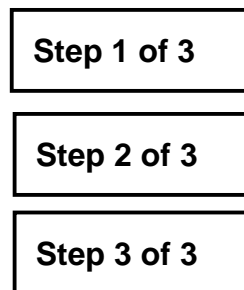
Customizable Portal



Form



Multi-step form



- ◆ Simple to sophisticated embedded layouts
- ◆ Forms
 - Generation with form widgets
 - Load existing data
 - Input validation and error messages
 - Form processing
- ◆ Multiple pages

Isolation from schema changes

Application logic

Java classes are designed to present the most logical view for the developer.

News Class
Title: String
Article:String

News class does not change despite changes in the lower layers. No code using the news class has to change.

Persistence

Java Class	Java Property	Database Table	Database Column
News	Title-string	News	Title-varchar(200)
News	Article- string	News	Body-varchar(2000)

Meta-Data Change

Java Class	Java Property	Database Table	Database Column
News	Title-string	News	Title-varchar(200)
News	Article- string	NewsClob	Body-clob

Data Storage

News Table

Title	Body
ACS 5 is launched	ACS 5 is the best
.....

Schema Change

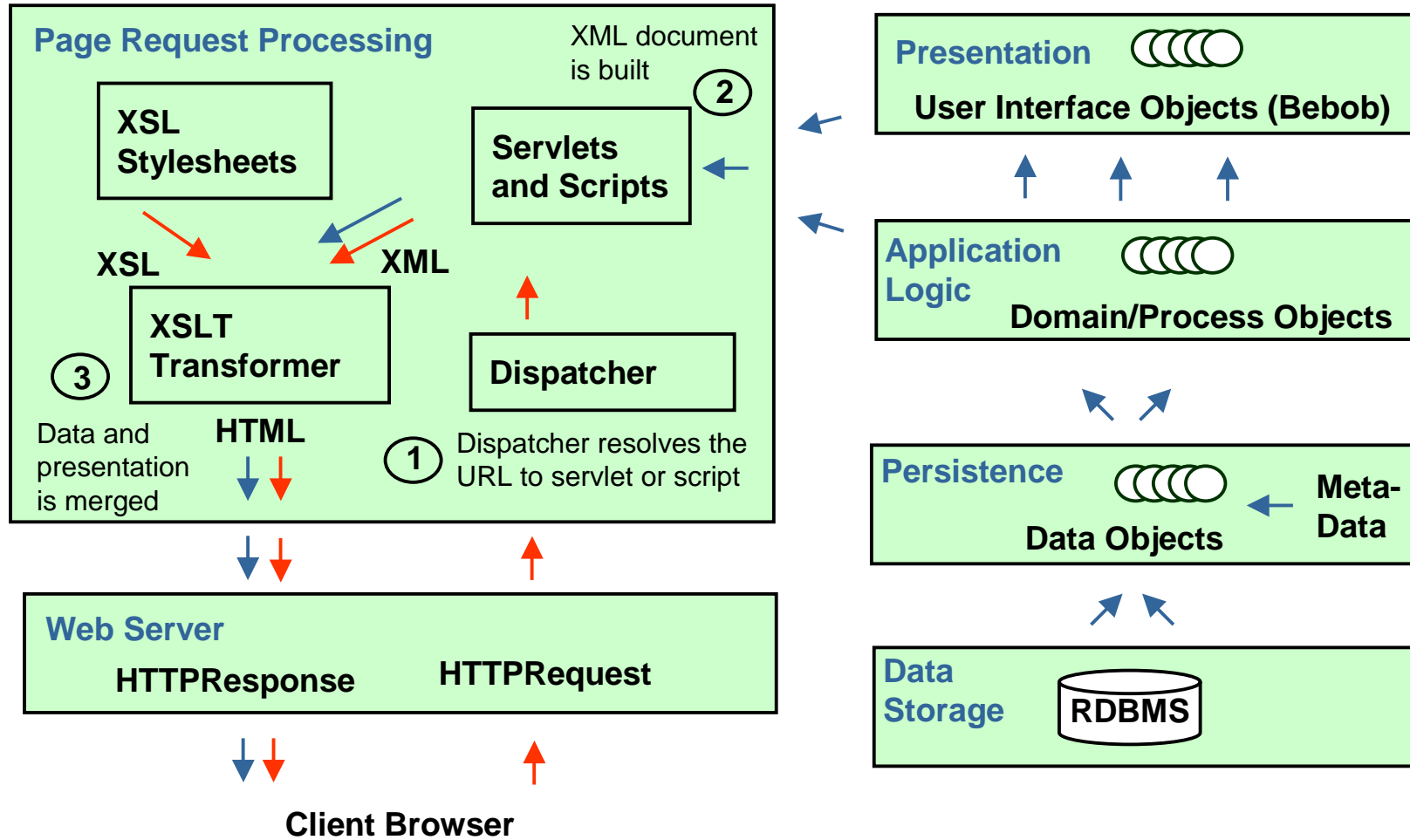
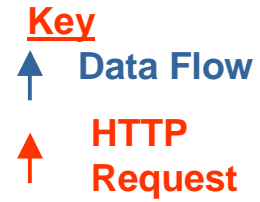
News Table

Title
ACS 5 is launched
.....

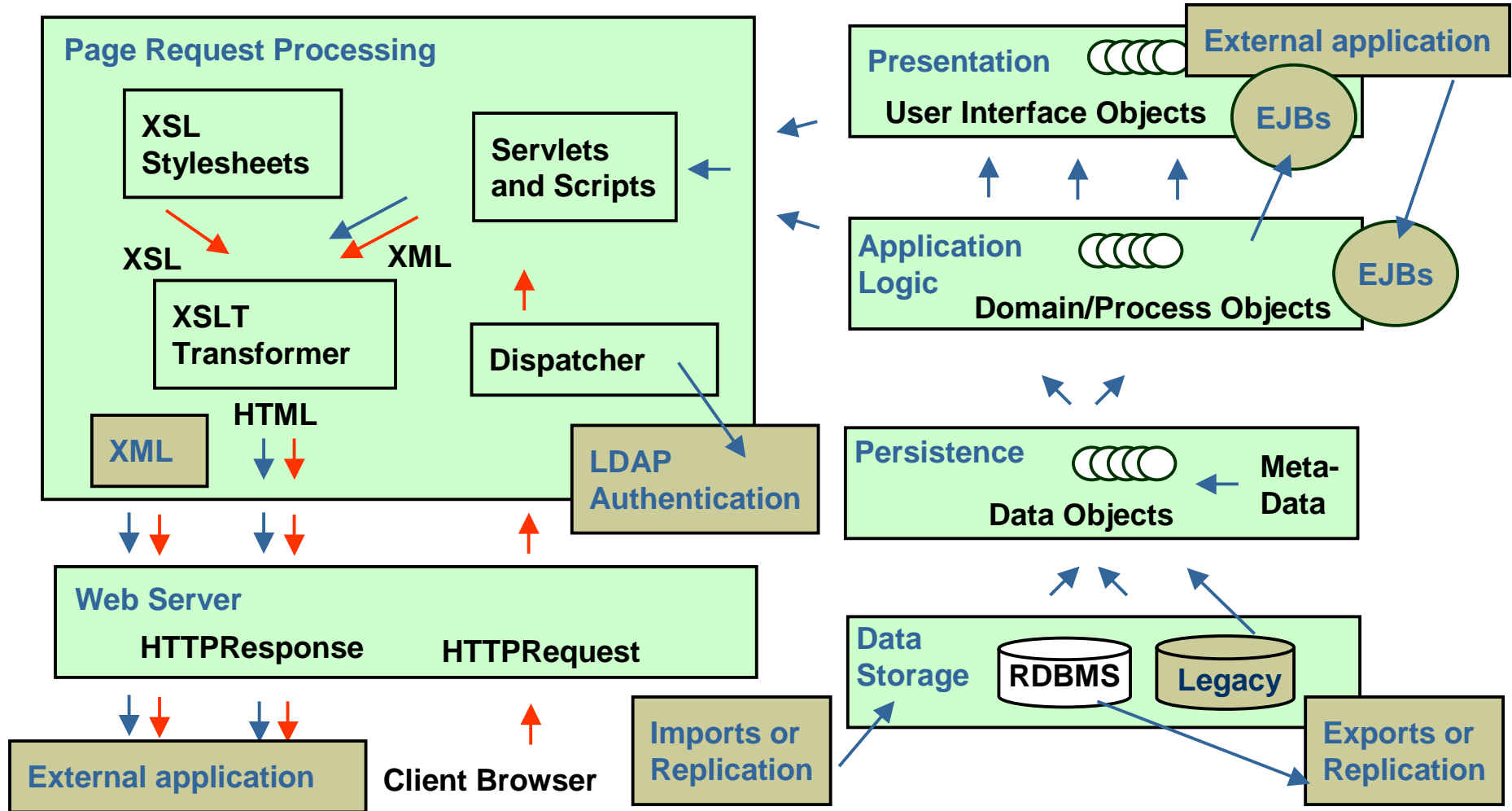
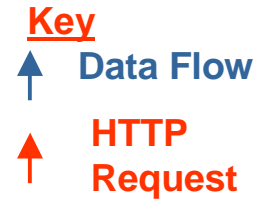
NewsClob Table

Body
ACS 5 is the best
.....

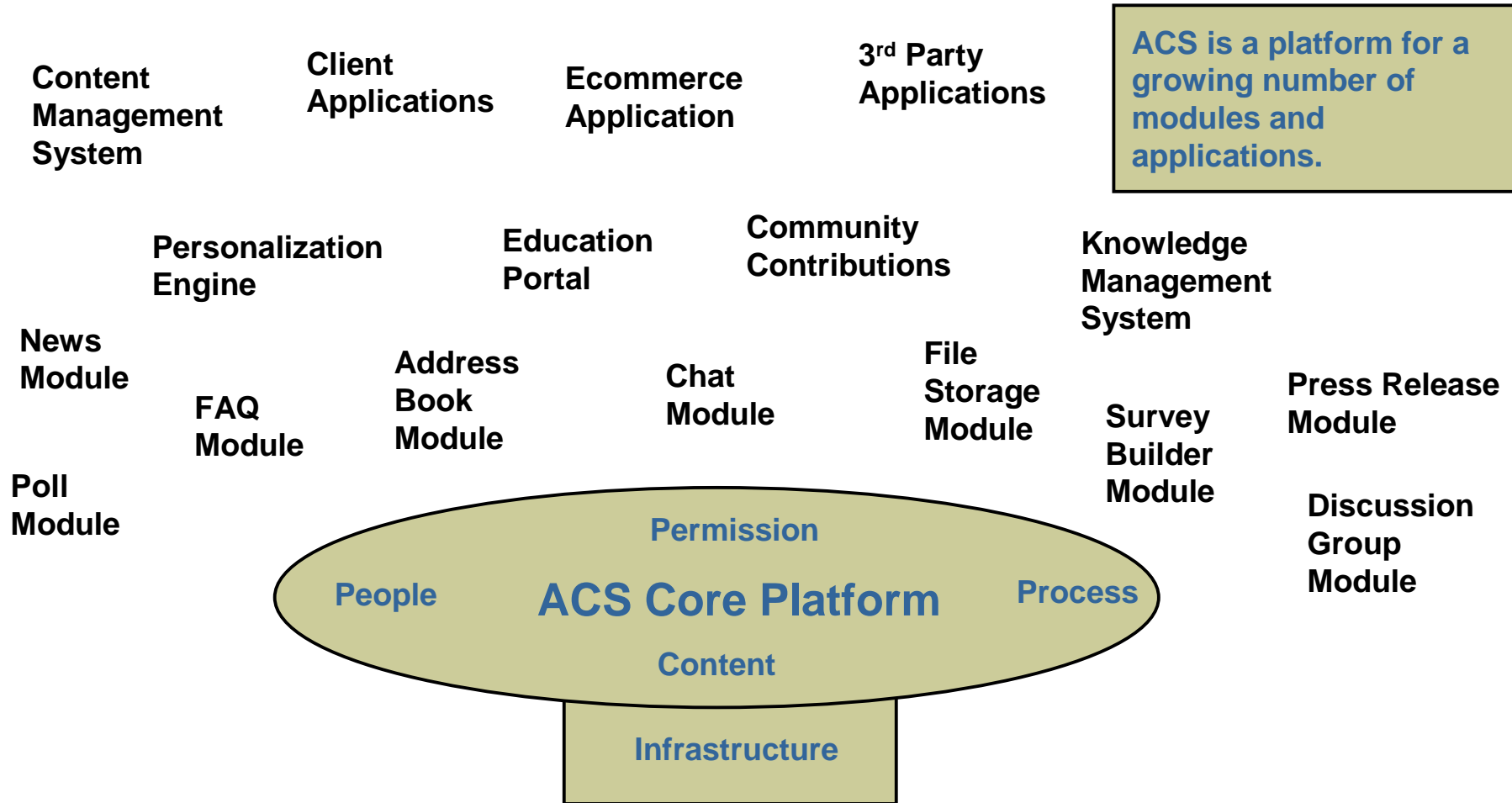
Architecture Overview



Integration Strategies



ACS-based Applications



ACS gets you 80% there

ACS Platform	Customization
Library of modules and applications	Add features/modules
Site management: site map and subsite capability	Mount and configure
Reusable interface components provide consistent page flows and user interaction	Custom layout, processing and pages
Presentation: XSLT transformation provide consistent styling and customizable delivery	Custom style sheets
People and relationships: Ability to model and manage typical structures	Map your model
Permissions: Sophisticated system than can manage permission rules encompassing inheritance rules for parties, privileges and objects	Add your criteria
Content: basic management, versioning, categorization, search, community features	Add types and content
Process: definition, task and state management	Define processes
Persistence layer providing isolation from schema changes	Add custom fields
J2EE-compliant architecture	Add Integration bridges