

Integration

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Please Note

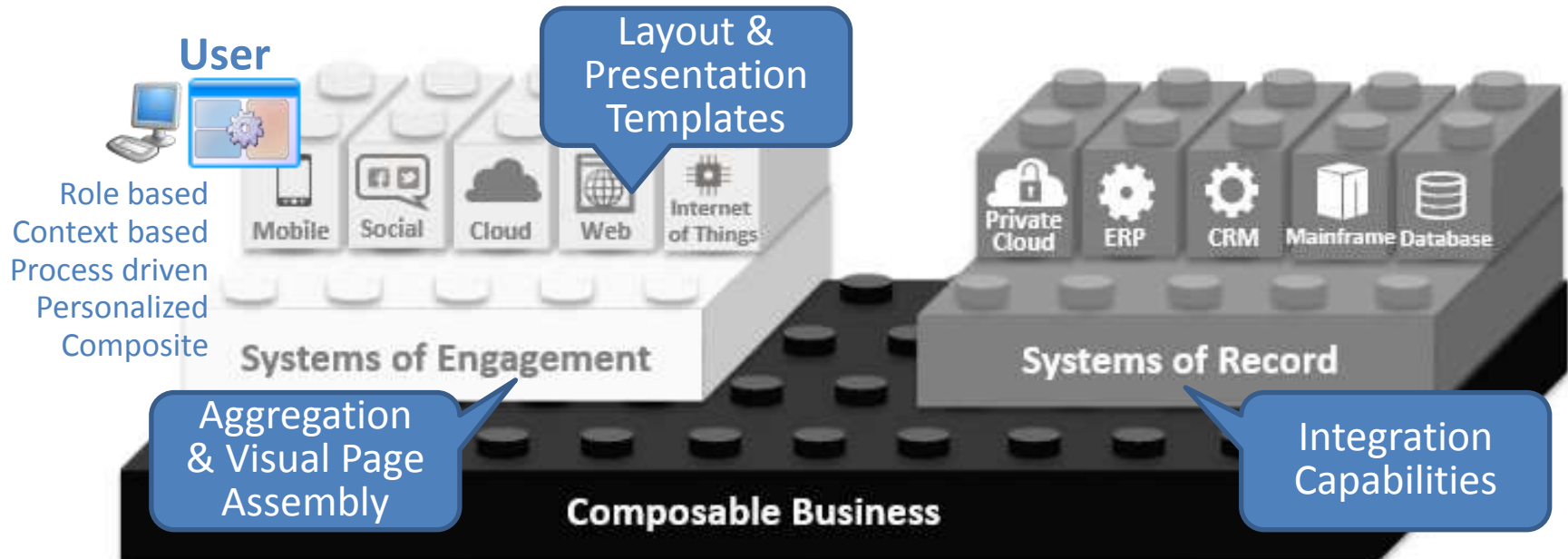
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Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.



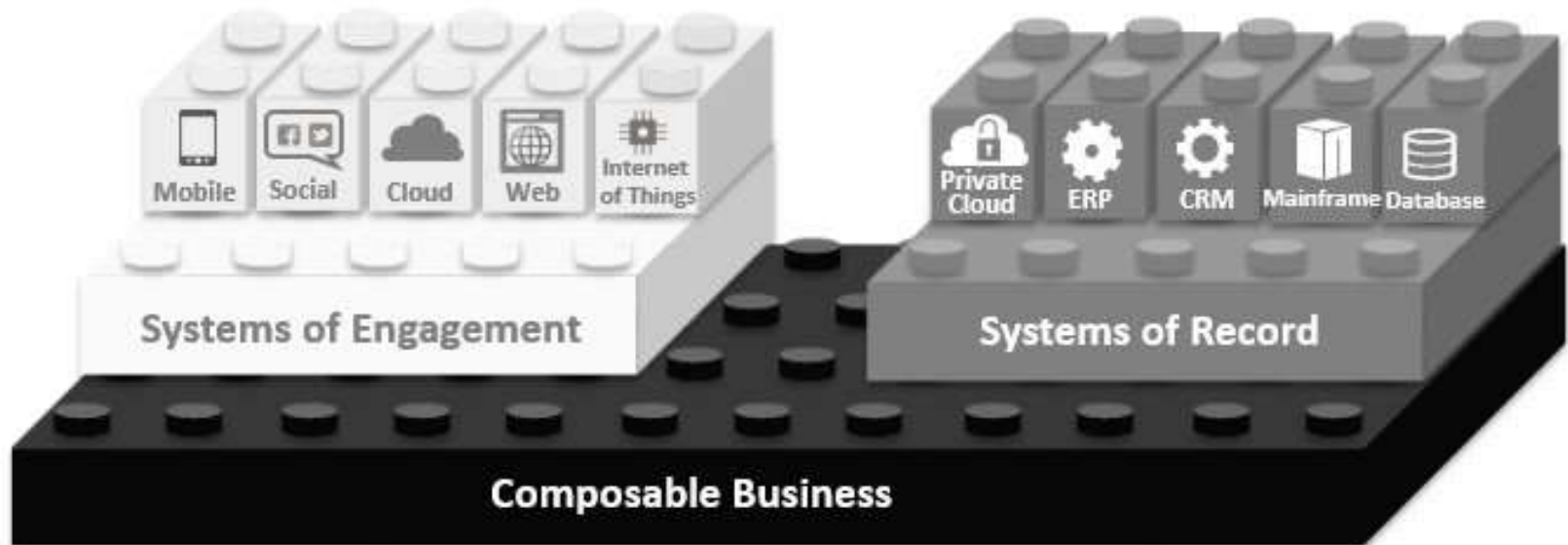
The traditional Portal Paradigma - Reloaded



- Portal gives the **illusion** of a nicely integrated system!
- But it's aggregation, composition and federation of lightweight UI components and services
- Let Portal pick the right face for the result
- Let another tier own the business logic (controller) and the data (model)



The traditional Portal Paradigma - Reloaded



Business

- Faster time to market
- Lower time to change



IT Operations

- Reduced risk during changes
- Failure ready infrastructure



Developers

- Can focus on innovation
- More freedom and choice



Blue Shield of California

- Their Mission: Ensure all Californians have access to high-quality health care at an affordable price
- They invested to build a strong, flexible system of record with great optimization for straight through processing....

IBM Portal

DB2

WCM

WODM

Data Power

Message Broker

IBM PureApp

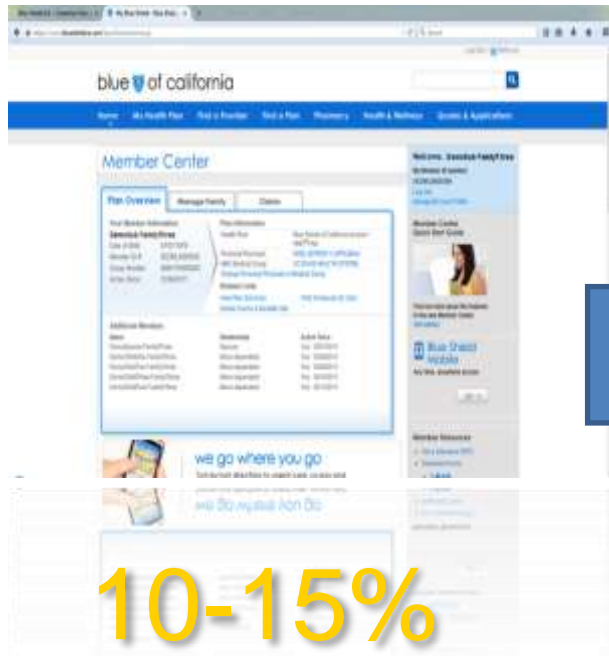
1,200

business rules
in WODM



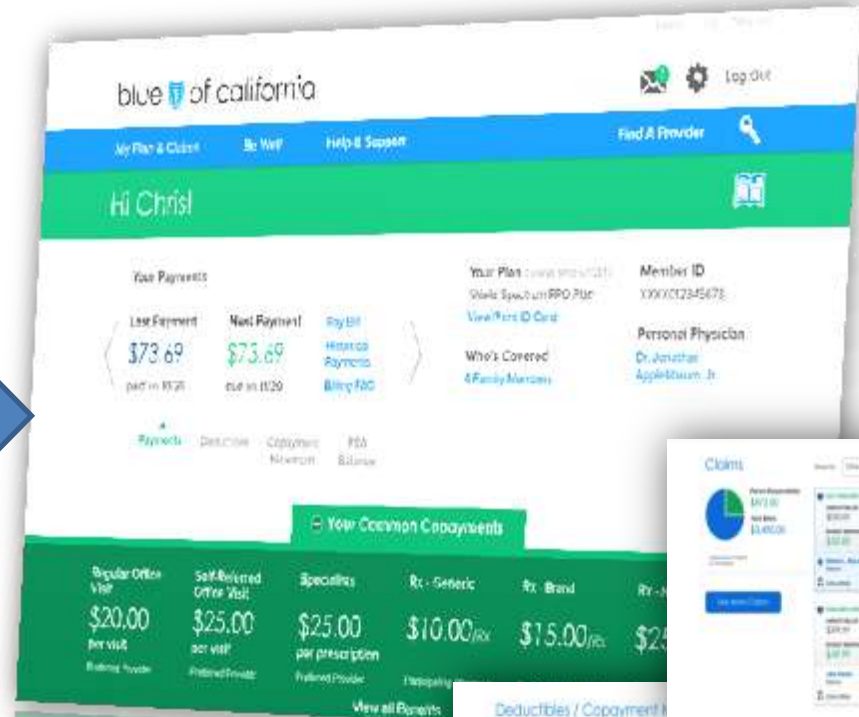
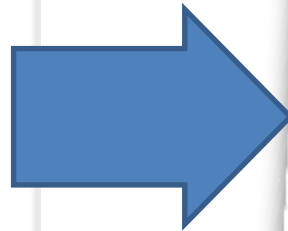
Member Center Re-Design

But their Systems of Engagement weren't delivering the users



10-15%

adoption



50%
adoption



Agenda

- IT Driven Integration
- „Business“ User Driven Integration
- Federation
- Security Considerations
- Examples
 - IBM Connections
 - WebSphere Commerce
 - Business Process Manager
 - Bluemix

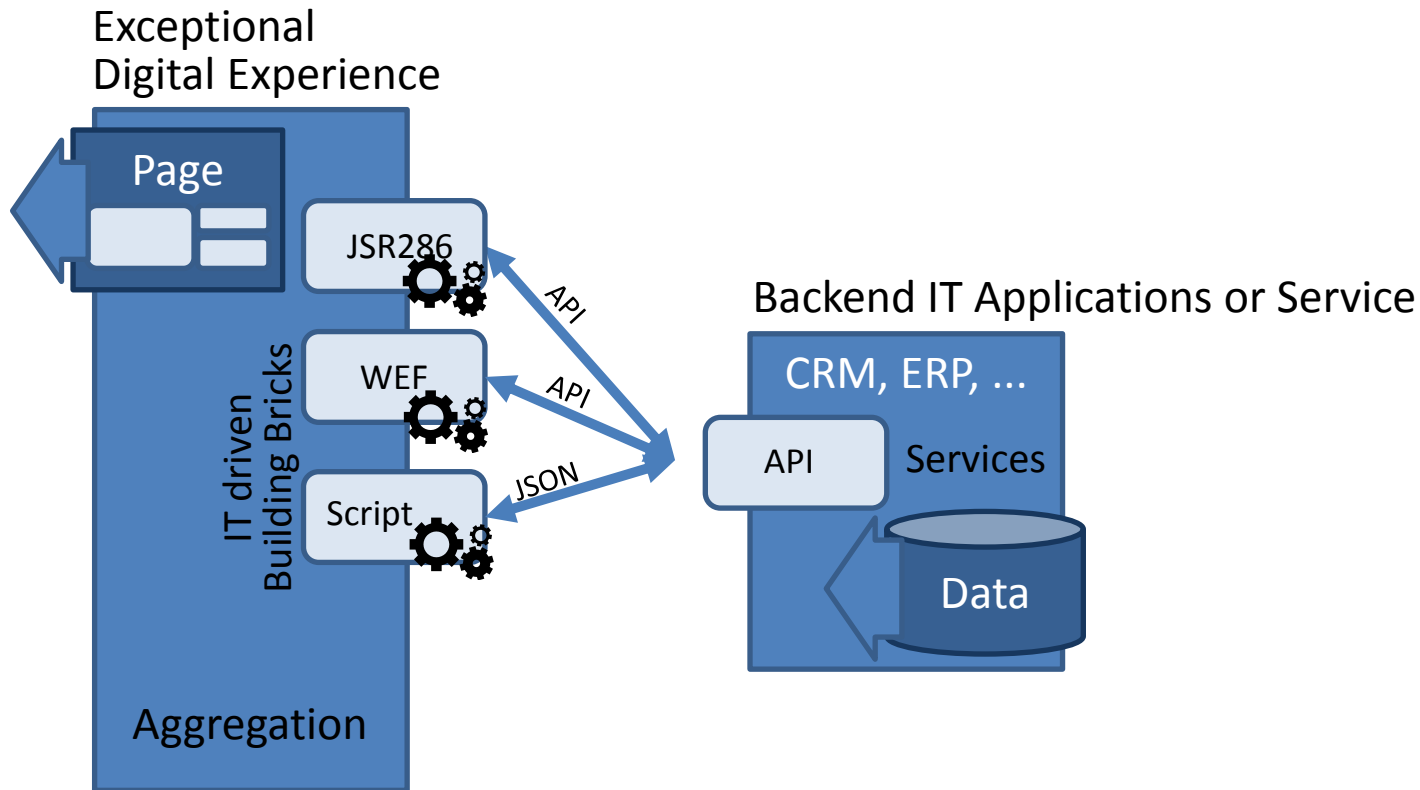


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Part 1: IT driven Integration



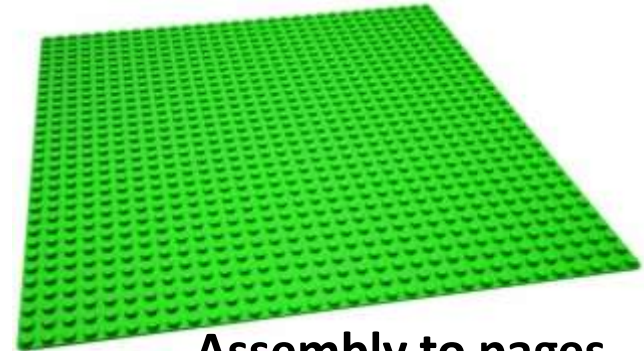
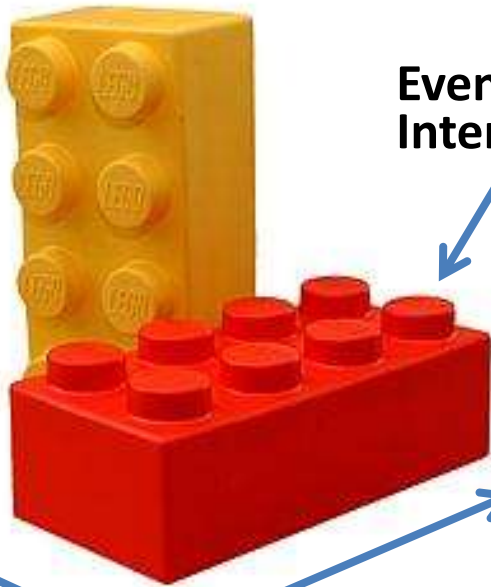
Portlets: JSR 286

Action & Render Phase



Packaging & Deployment

Eventing & Interaction



Assembly to pages

Lifecycle

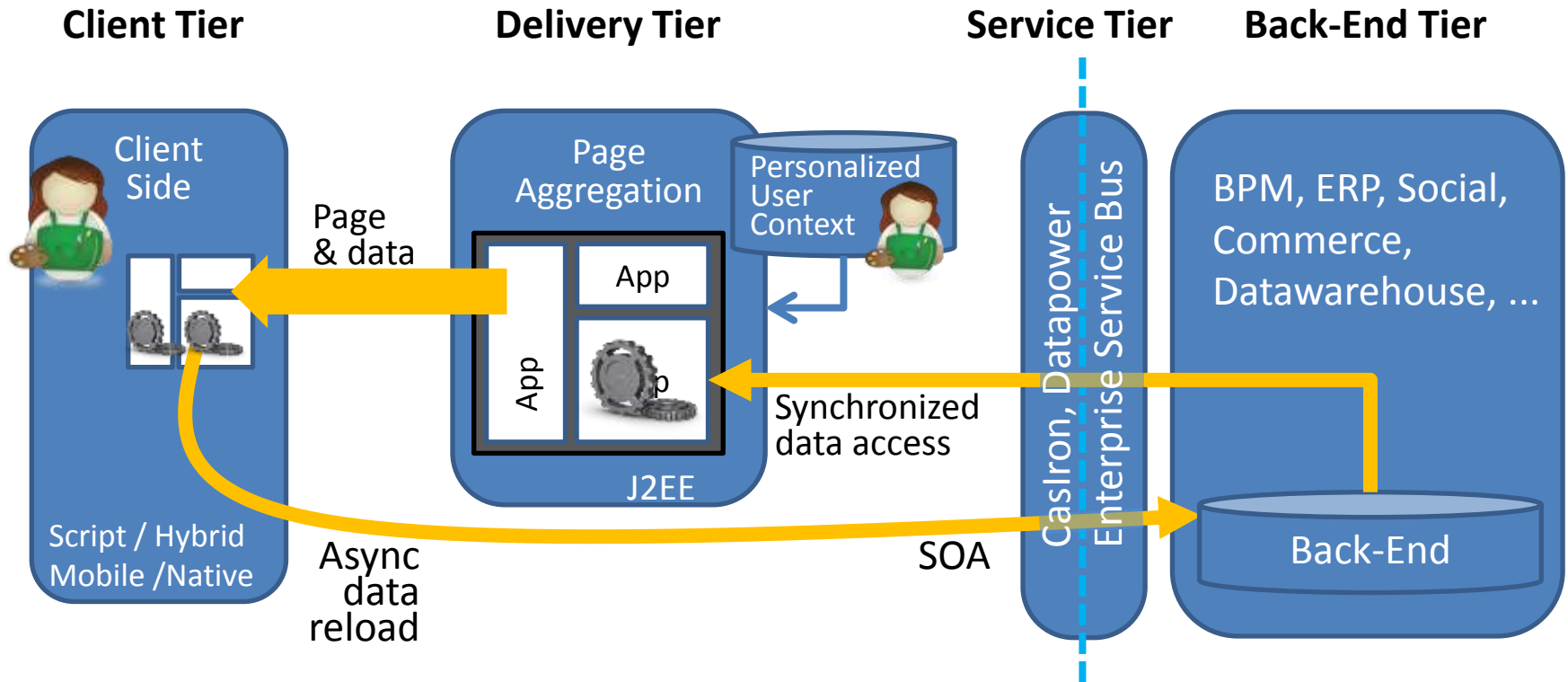


Pre-built Assets

Configuration & Preferences



4-Tier Delivery Architecture



- Execute client-side libraries (AngularJS, Dojo, JQuery) or implement as Native App (iOS/Android)
- AJAX calls / updates without page refresh
- Access backend data / SOA Layer directly via REST

- Execute server-side code (Java, JSP, J2EE)
- Aggregate personalized page for current user context and role
- Access backend data / SOA Layer from server-side code



Considering Portlets as a Programming Model

- The Portlet component model allows to develop and maintain re-usable building bricks, which can be combined to build web pages,
 - targeted to quickly changing needs and individual users
 - secure
 - follow prescriptive deployment and management patterns
 - based on JSR 286 standards (which is currently updated to the next version)
- Standardization on component level enables re-use, re-arrangements, re-factoring.
- If you look back what made automotive industry successful in the past 100 years, it was standardization:
 - industrial platform approach rather than handcrafted custom-built solutions
 - "lean production" = standardization of tools, methods, interfaces and features
 - http://en.wikipedia.org/wiki/Volkswagen_Group_MQB_platform (Wikipedia)



The new JSR 362 Portlet Specification

- The JSR 362 Expert Group was formed in April 2013
 - Participants: IBM, Oracle, Liferay, RedHat, Apache Foundation, Independents
- In accordance with the JCP process version 2.9, our work is public
 - JCP page for JSR 362: <http://www.jcp.org/en/jsr/detail?id=362>
 - Project web site: <http://java.net/projects/portletspec3>
 - Interested parties can subscribe to an observers mailing list at the site
 - JIRA Issue tracker: <http://java.net/jira/browse/PORTLETSPEC3>
 - Portlet API working docs: <http://msnicklous.github.io/portletspec3/>
- Focus
 - API Improvements
 - AJAX Support
 - JSF
- The Portlet Specification 3.0 Reference Implementation
 - Work will begin in 2014
 - Apache Pluto subproject of Apache Portals project



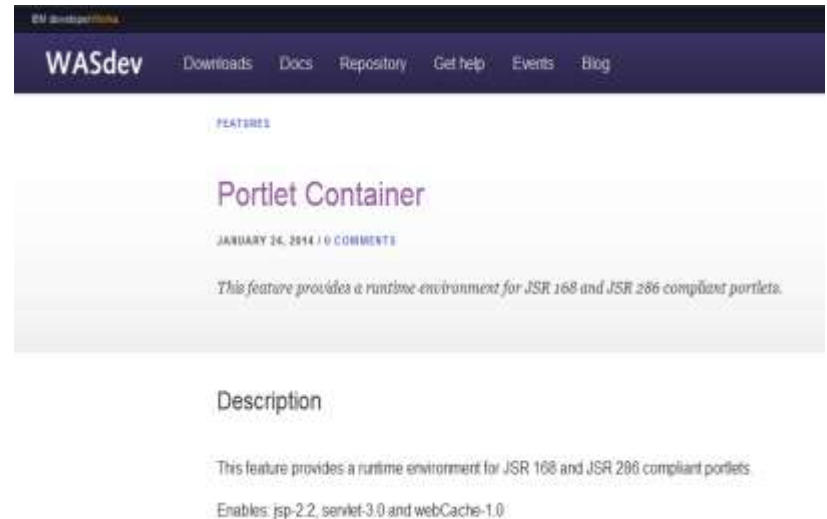
Portlet Container in Liberty

- Provides a runtime environment for **JSR 168 & JSR 286** compliant portlets
- Required to develop and deploy portlets on IBM WAS Liberty Profile
- The feature enables
 - jsp-2.2,
 - servlet-3.0
 - webCache-1.0

Download and more detailed step-by-step Instructions:

<https://www.ibmmdw.net/wasdev/repo/portlet-container/>

<https://developer.ibm.com/wasdev/docs/developing-portlet-applications-wdt-liberty-profile>



The screenshot shows the WASdev website interface. At the top, there is a navigation bar with the 'WASdev' logo and links for 'Downloads', 'Docs', 'Repository', 'Get help', 'Events', and 'Blog'. Below the navigation bar, the page title 'Portlet Container' is displayed in a large, purple font. Underneath the title, the date 'JANUARY 24, 2014' and '0 COMMENTS' are shown. A short description follows: 'This feature provides a runtime environment for JSR 168 and JSR 286 compliant portlets.' Below this, there is a 'Description' section with a more detailed description: 'This feature provides a runtime environment for JSR 168 and JSR 286 compliant portlets. Enables: jsp-2.2, servlet-3.0 and webCache-1.0.'

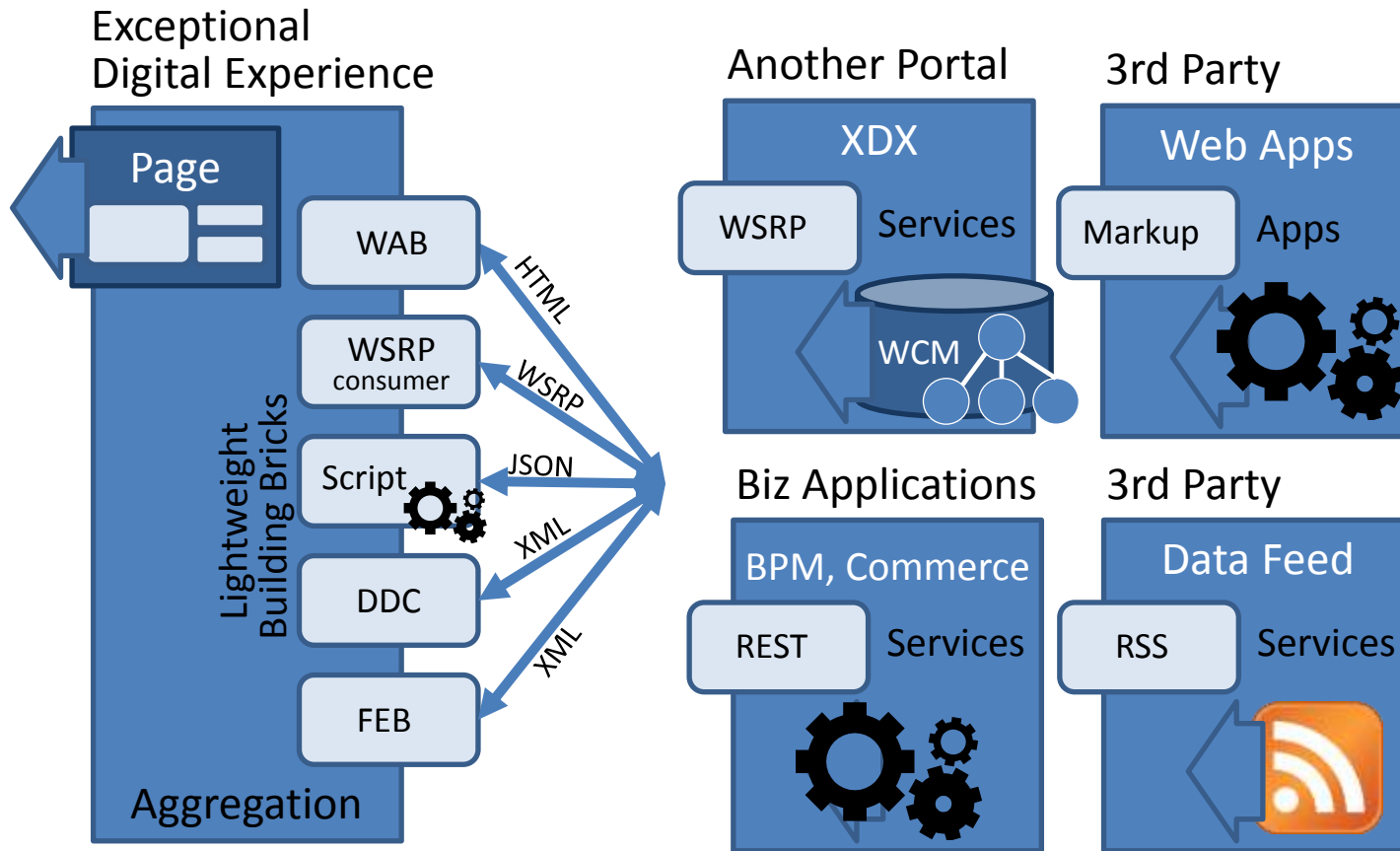


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Part 2: „Business“ User driven Integration



„Business“ User driven Integration

- Ad-hoc Integration
- Intuitive approach
- Self-service model suitable for Line of Business



Script Portlet

Build JavaScript-based portlets using widely-available skills and libraries, in the cloud or on premises with no code deployment

JavaScript libraries and frameworks of your choice



Rich portlet applications with support for Portal value-add features

The screenshot shows the 'Script Portlet Editor' interface. The top section displays the 'Script Portlet Content Item' with a code editor containing JavaScript code. The bottom section shows a rendered portlet with a search bar and a list of Motorola XOOM tablets. A large white arrow points from the rendered portlet back to the code editor, indicating a feedback loop or update mechanism.

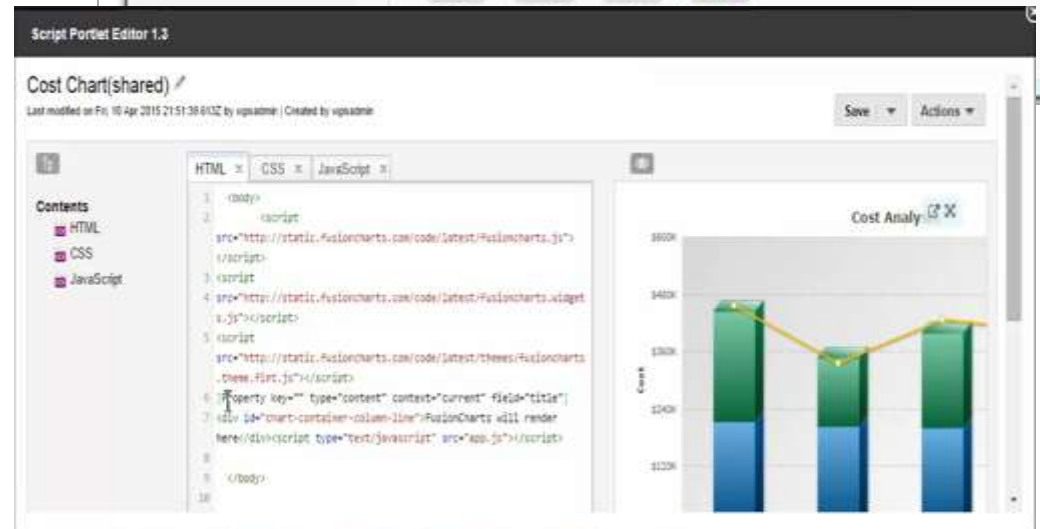
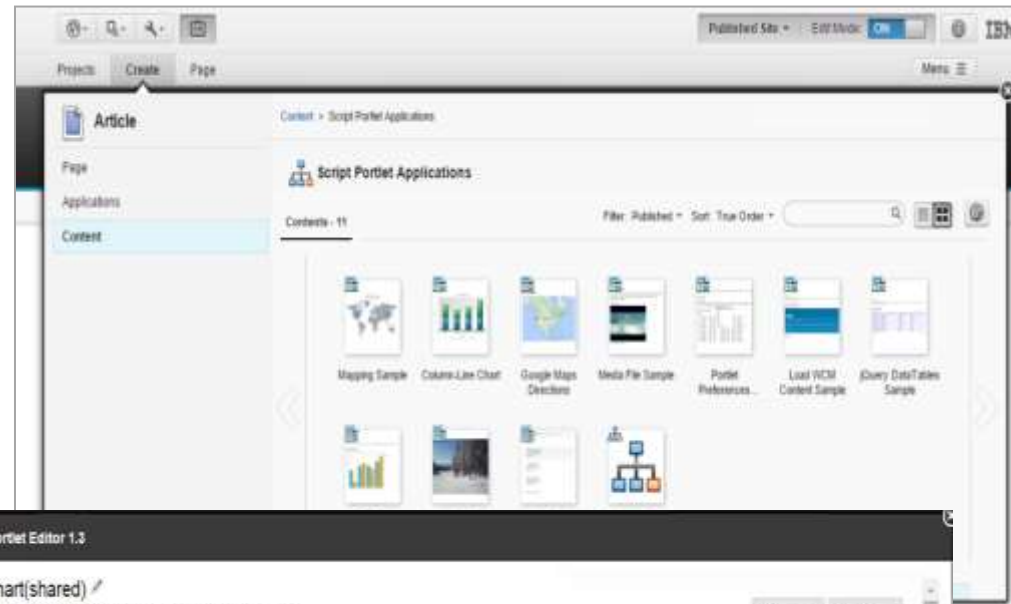
Application HTML/CSS/JS managed in WCM



IBM Script Portlet For WebSphere Portal v1.3

What's New:

- Command line support for creating new Script Portlet applications
- Support for storing Script Portlet applications in shared WCM libraries
- Ability for Script Portlet applications to be available on the toolbar for a convenient drag and drop addition to the page
- Picker for inserting WCM tags
- Resource aggregator support, for performance improvement of complex applications



Available on the [Catalog](#) Now!



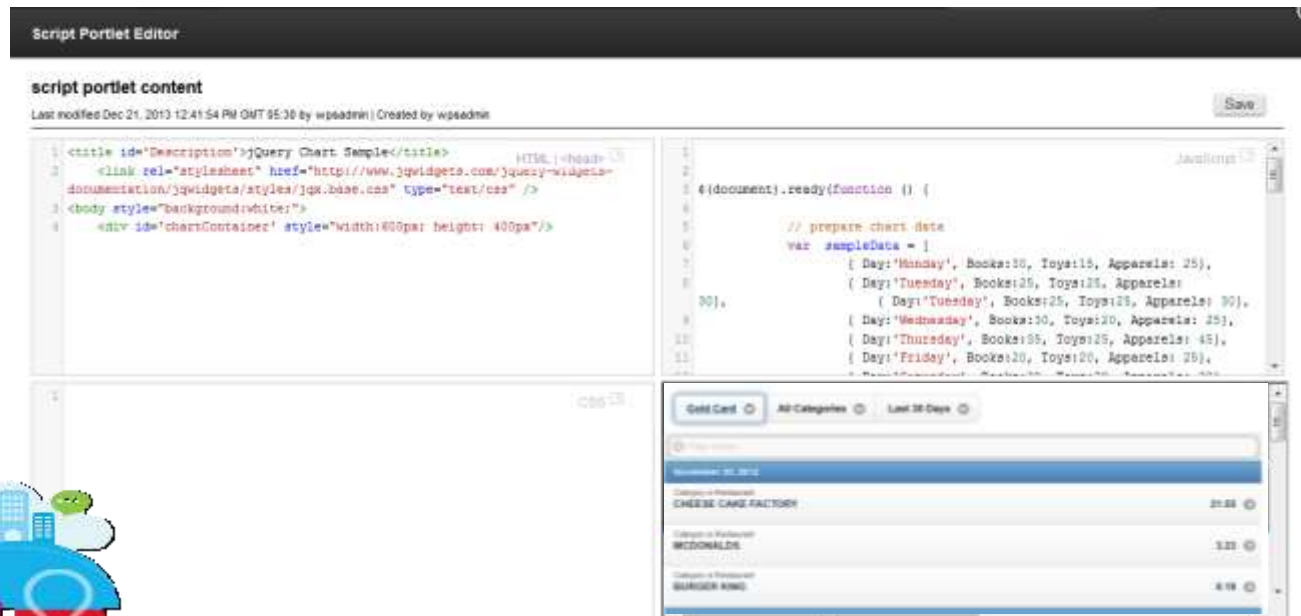
Script Portlet: Goals

- Enable the Line of Business to implement application independently and self-contained
 - A small team of Javascript 'Programmers' can make powerful customization of web sites quickly and easily
- Enable customers and partners to write re-usable UI components, which behave like Portlets, but are not full J2EE implementations
 - Proof of Concepts and prototypes
 - Widget-like UI components, with reduced requirements concerning security and quality of service
- Provide a programming model that can be used for application development on the cloud
 - Tenants can author applications in their SaaS/PaaS instance themselves, rather than deploying code as a privileged administrator
 - Individually harvest a variety of common Cloud based services



Script Portlet: Editor

- Syntax highlighting
- Auto indentation and outdent
- Handles huge documents (hundreds of thousands of lines) without trouble
- Customizable key bindings including Vi and Emacs modes
- A wide range of language modes
- Add-ons for autocompletion, code folding, integrated linting
- A broad programming API



The screenshot displays the Script Portlet Editor interface. At the top, the title bar reads "Script Portlet Editor". Below it, the main content area is titled "script portlet content" and includes a "Save" button. The editor is divided into several panes:

- HTML Editor:** Contains the following code:

```
1 <title id='Description'>jQuery Chart Sample</title>
2 <link rel='stylesheet' href='http://www.jquerywidgets.com/jquery-widgets-
3 <body style='background:white;'>
4 <div id='chartContainer' style='width:400px; height: 400px;'>
```
- JavaScript Editor:** Contains the following code:

```
1
2
3 $(document).ready(function () {
4
5     // prepare chart data
6     var sampleData = [
7         { Day:'Monday', Books:10, Toys:10, Apparels: 25},
8         { Day:'Tuesday', Books:20, Toys:20, Apparels:
9         30},
10        { Day:'Tuesday', Books:25, Toys:20, Apparels: 30},
11        { Day:'Wednesday', Books:30, Toys:20, Apparels: 35},
12        { Day:'Thursday', Books:35, Toys:25, Apparels: 40},
13        { Day:'Friday', Books:30, Toys:20, Apparels: 25},
```
- CSS Editor:** Currently empty.
- Preview Pane:** Shows a table with the following data:

Category	Value
CHEESE CAKE FACTORY	20.50
WEDONALDS	3.25
BARBER KING	4.10



Typical Use Cases for Script Portlet

Any type of application UI

Forms, views, charts, etc., etc.

Single-page applications

Any JS libraries and frameworks can be used

Data is accessed with REST/JSON services built with other tools or external

Client-side applications

The collage illustrates various user interface components:

- To Do List:** A list of tasks with checkboxes and a 'Mark complete' button.
- Business Analysis - Competitive:** A bar chart comparing 'Target' (blue) and 'Actual' (green) performance across categories.
- Banking Transactions Table:** A table showing transaction details for 'My Checking' account.
- Home Loan Interest:** A calculator showing loan parameters and resulting interest and payment amounts.
- Map:** A geographical map showing a location with a red pin.

Type	Date	Amount	Message
ATM	1/31/2014	-308.00	ATM Withdrawal
ATM	1/8/2014	-300.00	ATM Withdrawal
BRANCH	12/18/2013	465.10	Opening balance
DEPOSIT	3/14/2014	1234.00	Demo
DEPOSIT	3/14/2014	321.00	Demo
DEPOSIT	3/14/2014	153.00	
DEPOSIT	3/13/2014	308.00	
DEPOSIT	3/13/2014	156.00	
DEPOSIT	3/13/2014	333.00	Demo
DEPOSIT	2/23/2014	1956.00	Direct Deposit Semi Monthly Payroll

R1	loan = 300k	300,000
R2	rate = 8%	0.08
R3	months = 12 * 30	360
R4	monthly interest	0.00666666667
R5	monthly payment	2,201.29
R6	total payments	792,465.74
R7	interest payments	492,465.74
R8	principal payments	300,000.00

Forms Experience Builder

Easy-to-use *web based design tooling* delivers powerful fill and submit experiences.

- **Complete tooling**

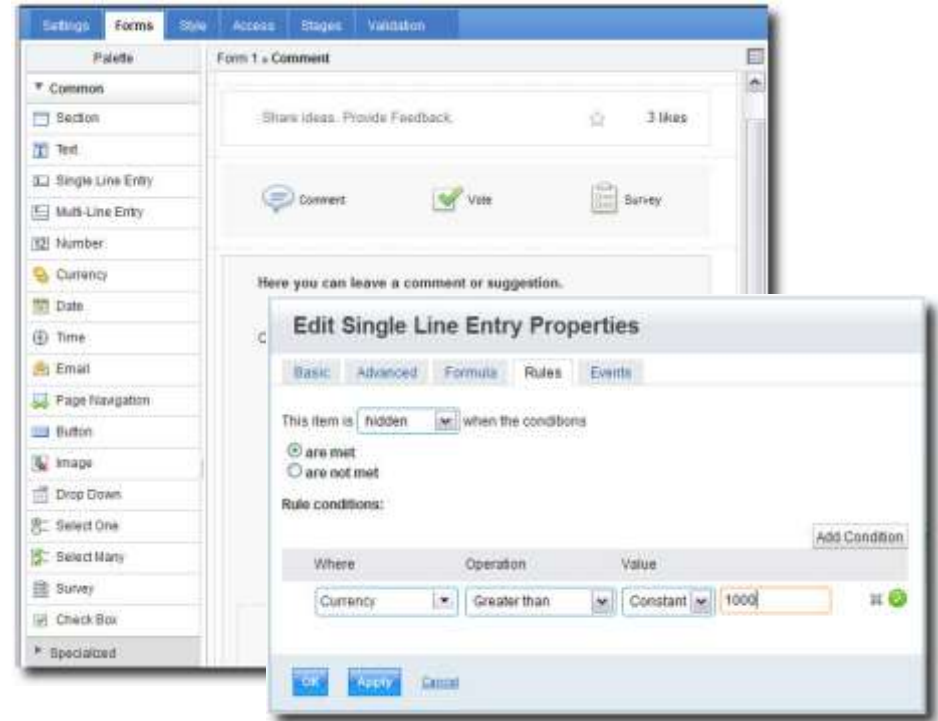
- Full set of web data capture items
- Flexible layout using grids & sections
- Graphical rules & formula editor
- Routing editor

- **Rapid development**

- Preassembled items with default values
- Automatic binding to data records
- Apply advance features quickly

- **Familiar techniques**

- Drag & drop design experience
- Easy discovery of item properties



Full data capture solution – **simple** to construct, **easy** to change, and **quick** to deploy.

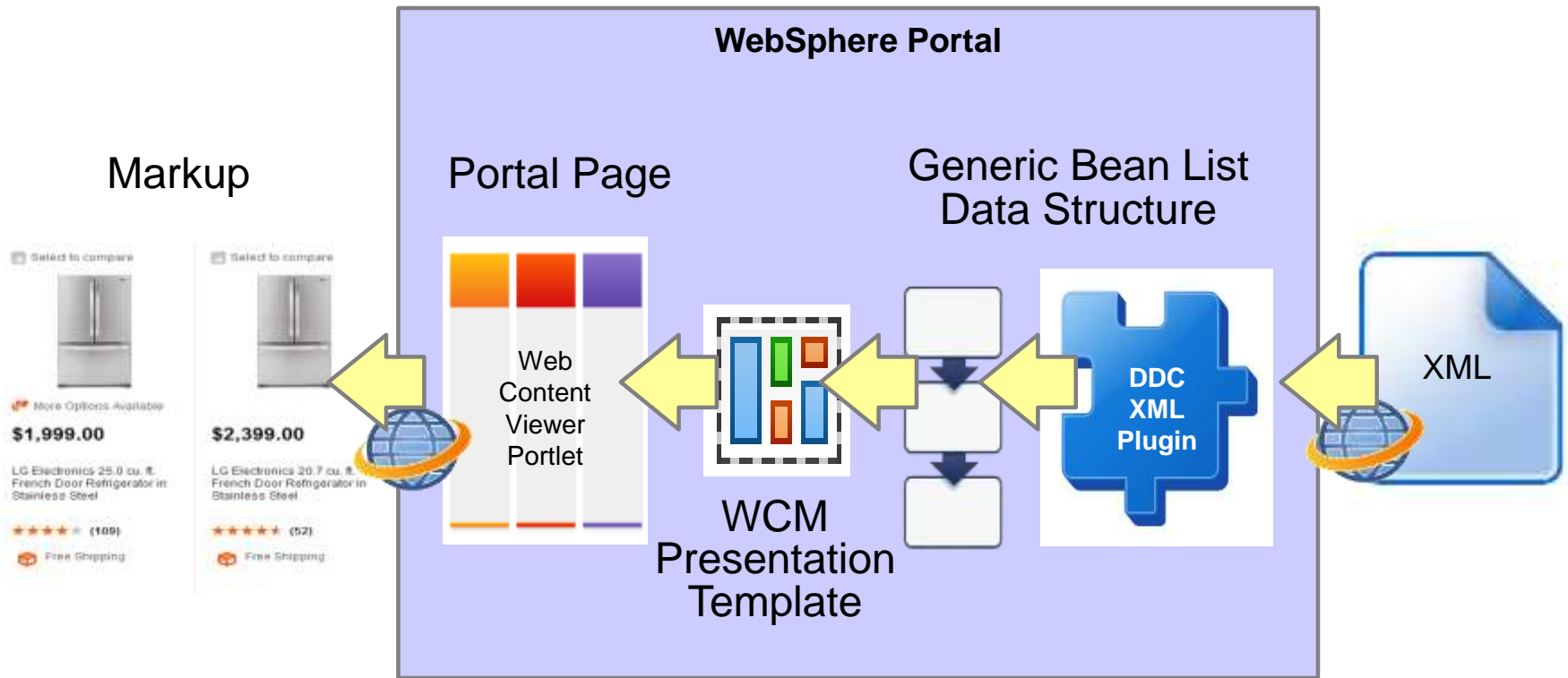


Digital Data Connector

- Use IBM Web Content Manager (WCM) design components to render data being served from external systems
- Provide a public plug-point to allow integration of all kinds of data
- Use WCM contents items to describe what data to include and what design component to use to render the data
- Support dynamic context overwrites of source and filter attributes using public render parameters
- Make it easy integrate remote XML data: No custom coding
 - Instead, use PLR list rendering profiles to transform external data into lists that can be rendered using WCM presentation templates



Digital Data Connector: Concept



Digital Data Connector

- Perfect Match for all kinds of List-Results
 - Forums, Blogs
 - Search Results
 - Catalogues
 - Task Lists
 - News Feeds
- **CRUD!**



Digital Data Connector: Samples

SPIEGEL ONLINE - Schlagzeilen
Dec 13, 2013 12:05:01 PM CET
Deutschlands führende Nachrichtenseite. Alles Wichtige aus Politik, Wirtschaft, Sport, Kultur, Wissenschaft, Technik und mehr.

Fallschirmhunde im Zweiten Weltkrieg: Angriff der königlichen Luftwaffe
Dec 13, 2013 9:43:22 AM CET

Geheimaktion: Beyoncé veröffentlicht Album
Dec 13, 2013 8:35:00 AM CET

Fußball-WM in Brasilien: DFB baut sich eigenes Quartier

BBC News - Business
The latest stories from the Business section of the BBC News web site.

RSA shares fall 16% as chief quits
13 Dec 2013
Shares in RSA Insurance Group fall 16% after the firm's chief executive Lee, resigns amid deepening problems at its Irish unit.

Expensive calls to helplines to end
13 Dec 2013
Customers who call companies to complain about faulty goods will no longer have to pay premium rates, the government has announced.

ees October pick-up
struction industry rose by 2.2% in October, fuelled by building, the Office for National Statistics says.

fall on GM share sale
of Citroen fall more than 11% after General Motors French carmaker that it bought last year.

raises \$25m funding
that lets people trade Bitcoins, raises \$25m (€15m)

Local Files
Current Folder: /opt/WebSphere/wp_profile/ConfigEngine

- ..
- config
- log
- properties
- uninstall
- base_dynamic.xml (75159 bytes)
- ConfigEngine.bat (1161 bytes)
- ConfigEngine.sh (978 bytes)
- registry.xml (170057 bytes)

CNN Radio News
CNN Radio brings you an in-depth update on the news every Monday-Friday evening. Posted at 4:30pm eastern this podcast gives you personal stories you won't get anywhere else, as well as catching you up on some of the headlines of the day. (15-20 minutes)

CNN Radio News Day: June 25, 2013
26 Jun 2013 | Category: News & Politics | duration: 25:01

CNN Radio News Day: June 24, 2013
24 Jun 2013 | Category: News & Politics | duration: 21:10

CNN Radio News Day: June 21, 2013
21 Jun 2013 | Category: News & Politics | duration: 25:51

CNN Radio News Day: June 20, 2013
20 Jun 2013 | Category: News & Politics | duration: 29:22

CNN Radio News Day: June 19, 2013
19 Jun 2013 | Category: News & Politics | duration: 31:00

1 - 5 of ... 1 | 2 | 3 Previous | Next

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Web Application Bridge



Web Application Bridge (WAB) is a feature built on WebSphere Portal and WebSphere Application Server that facilitates “low-cost”, “at the glass” integration of **existing Web applications**

WAB leverages a **reverse proxy** to integrate web-based content providers within WebSphere Portal solutions

A **virtual Web application (Webdock portlet)** is an abstract representation of existing Web content provided by an existing back-end service



The Essentials...

- No portlet development required
- No modification of external application required
- Centralizes access to external web applications within the enterprise portal
- VWA Manager Portlet allows to create multiple content provider profiles representing individual hosts and policies against which applications can be provisioned
- Deploy external web applications within WebDocks with localized title support
- Credential vault support
- Portal server (not browser) retrieves url content and displays inside the WebDock



The Essentials ...

- WebDock creates dynamic viewport for external content
 - iframe dimensions
 - hide/show scrollbars
 - dynamic iframe resizing based on content or browser size
- WebDock preserves integrated application's navigation state
- WebDock provides session synchronization that keeps the portal session alive while the user is working inside it
- WAB ensures that the iframe and the parent portal page are in the same domain
- WAB suppresses common iframe busting mechanisms



Mobile support

- Mobile support is provided for integration of those web applications which have been developed and tested for rendering inside mobile device browsers.
- This support will not work for integrating those web applications which are not originally built and tested for rendering on mobile devices.
- Those web applications without mobile enabled content will display in the same way as when displayed on a desktop.
- The WebDock should be configured with dynamic size as **always** so that the responsiveness or the adaptiveness of the integrated web site kicks in.



Web Application Bridge: Rules of Thumb

- Just because a browser can get there doesn't mean that WAB can get there
 - Use server based browser, telnet or wget to determine if the portal server has access to the content provider
 - Plan to use SSO
 - Is Portal and the content providers in the same domain and sharing a user registry?
- Use Caution when
 - Network latency becomes relevant
 - Ping latency should be < 10 ms preferably < 1 ms
 - Content Provider content is too large
 - Redundant or unwanted navigation, header, footer, sidebars, etc.
 - Conflicting styles
- Consider delivering static content (CSS, Javascript and Images) via HTTP server
- Apply Filters when needed

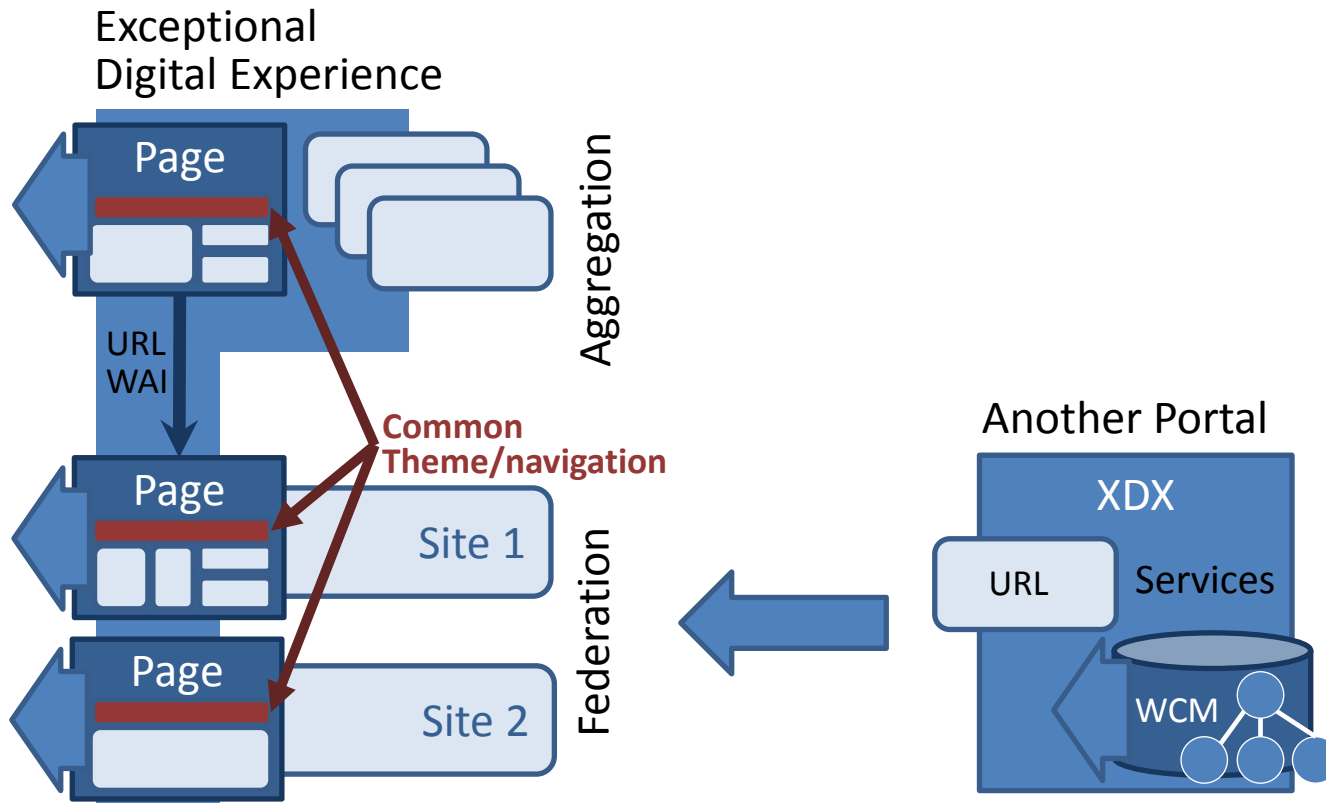


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Part 3: Federation



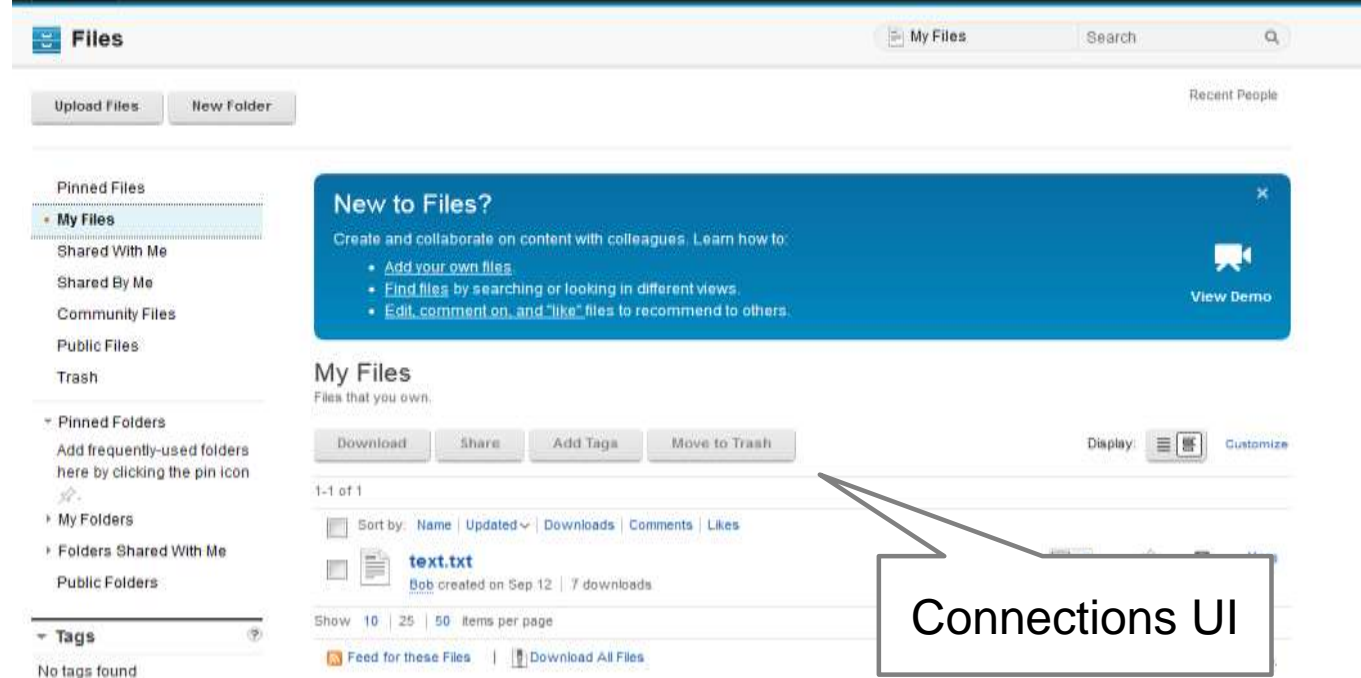
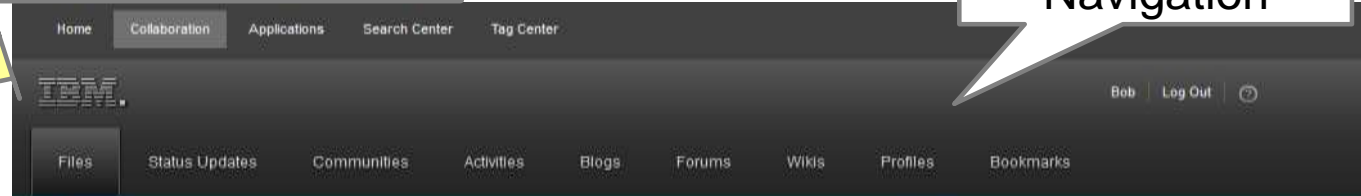
Web Application Integrator (WAI) Example

IBM Connections gets the Portal navigation on top

```
HTML <script> tag used to integrate external web application for page = collaboration
<!-- BEGIN PORTAL NAVIGATION INTEGRATION -->
<script type="text/javascript" src="http://wpsvm053.boeblingen.de.ibm.com:10039/wps/myportal/utp-
/a10YyDowFEW_fYGVVys1Ym2EEGE6N2R94wRlTWZ90-FuJee-48A2cwOpMdk13-
/B2nqsK0TumMSL7ml_andMppNK600Wpa7s6g9206qd0dU.../YTN4OKs1BRus2LhstFPAJm4sow1c9H600I74E2gWWM25u0PCJwzhFJezd
IXRLFFIQIP"></script>
<!-- END PORTAL NAVIGATION INTEGRATION -->
```



Portal Navigation



Connections UI



Client-Side Integration Patterns

- Leverage the existing Active Site Analytics capability to inject code
- e.g. include client side libraries to run Maxymizer, Optimizely, or Xtify

The screenshot shows the 'Page Properties' dialog in IBM Content Manager. The 'Metadata' section is expanded, showing a table with the following entries:

Key	Value
param.sharing.scope	ibm.portal.sharing.scope.page
web.template.oid	76_54DJKYC10CLT40FEN33C2204
asa_dependency	http://service.maxymiser.net/cdn/ibm/gree

Red boxes highlight the 'asa_dependency' key and its value. A red arrow points from the value field to the 'asa_dependency' key field.

The screenshot shows the IBM website with a 'Welcome to Your Digital Experience' message. A red arrow points from the analytics overlays to the website content. The overlays include:

- maxymiser® Optimizing Every Customer Experience
- xtify | Mobile Customer Engagement
- Optimizely

At the bottom, there is a small text box: "This message is shown to the Segment 'First Time Visitors' and is triggered on 'PAGE_VIEW'. Use the Campaign Manager to manage the theme dynamically controls the appearance, and the digital experience on a wide range of devices."

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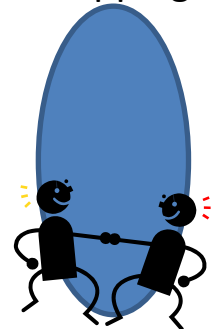
Part 3: Security Considerations

- Outbound Connection
 - AJAX Proxy / Http Outbound
- Single Sign On
 - SAML
 - Credential Vault
- Identity Management (and Mapping)
 - TFIM

Outbound
Proxy



Identity
Mapping



HTTP Outbound

- Central control for outbound HTTP connections
- Functions for authentication and cookie handling
- Administration via model APIs or configuration tasks
- Custom outbound service filter possible
- Since 8.5



Single sign-on with Web Application Bridge

<p>WAB authenticates to the IdP on behalf of the user</p> <p>Uses Web SSO Profile for message exchange sequence</p> <p>Requires both IdP and SP to use HTTP POST bindings</p> <p>Isolation between portal's and back end server's authentication & session</p> <p>Tested against TFIM & ADFS as IdP</p> <p>1-4 flow not required when portal itself does not require SAML authentication</p> <p>Requires cookie based trusted user identity</p> <p>SSO configured by providing settings for SAML Authentication in VWA Manager</p>	<h2 style="writing-mode: vertical-rl; transform: rotate(180deg);">IdP Initiated SAML</h2> <p>User, Portal & Back-end server on the same Active Directory domain</p> <p>Portal configured for authentication using SPNEGO with Kerberos</p> <p>Portal as SP configured in Active Directory as "trusted for delegation"</p> <p>User's browser performs SPNEGO authentication</p> <p>WAB extracts user's Kerberos token and authenticates to the back-end server on user's behalf</p> <p>SSO configured by providing settings for SPNEGO Authentication in VWA Manager</p>	<h2 style="writing-mode: vertical-rl; transform: rotate(180deg);">Kerberos Delegation</h2> <p>Back-end server in the same domain as portal's</p> <p>Back-end server configured against the same federated identity provider as portal's e.g. TFIM</p> <p>User identity ready established after authentication</p> <p>User identity available in a cookie e.g. LtpaToken</p> <p>1-4 flow not required when portal itself does not require SAML authentication</p> <p>SSO configured by allowing identity cookie to pass through from request in VWA Manager</p>	<h2 style="writing-mode: vertical-rl; transform: rotate(180deg);">Client-side Cookie Authentication</h2> <p>Pre-emptive authentication</p> <p>WAB authenticates on behalf of user</p> <p>Credentials provided using the credential slot mechanism</p> <p>WAB maintains user session with the back-end server while the user maintains only one session with the portal</p> <p>WAB synchronizes portal and back-end sessions – user logs out of back-end server when portal session ends</p> <p>SSO configured by providing settings for Form Based Authentication in VWA Manager</p>	<h2 style="writing-mode: vertical-rl; transform: rotate(180deg);">Form Based Authentication</h2> <p>Pre-emptive authentication</p> <p>WAB authenticates on behalf of user</p> <p>Credentials provided using the credential slot mechanism</p> <p>WAB maintains user session with the back-end server while the user maintains only one session with the portal</p> <p>WAB synchronizes portal and back-end sessions – user logs out of back-end server when portal session ends</p> <p>SSO configured by providing settings for Basic Authentication in VWA Manager</p>
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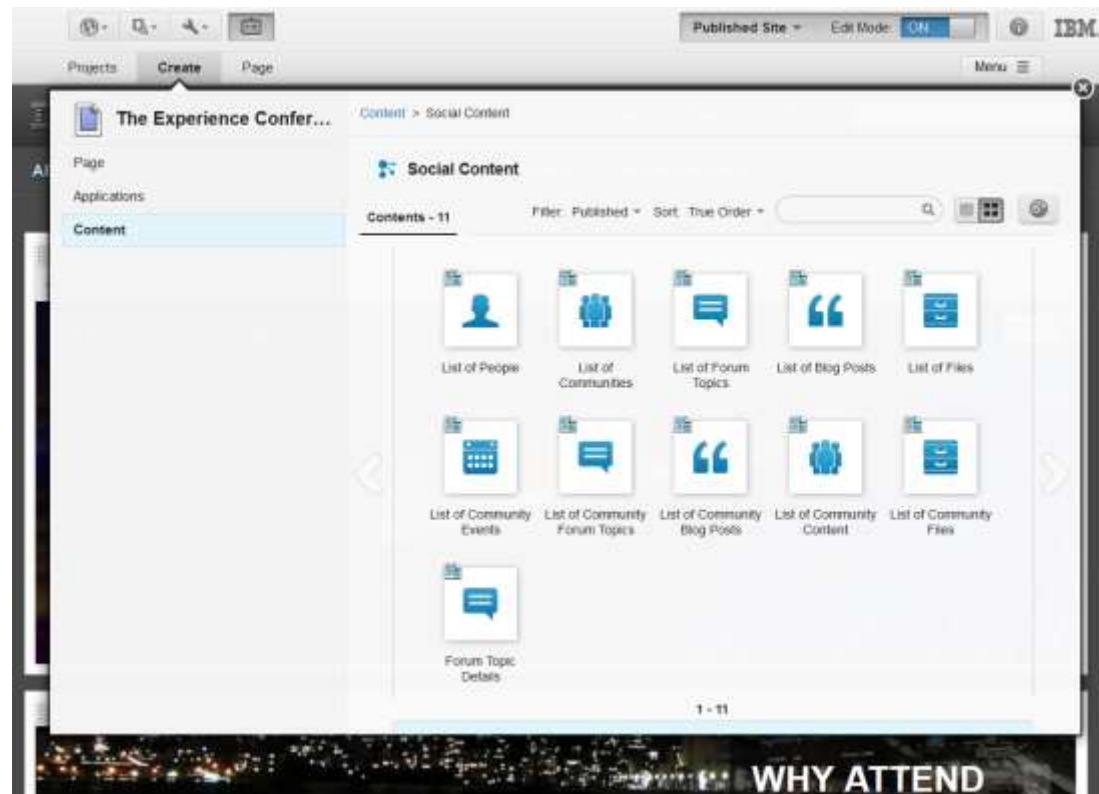
The very best of Integration: Integrate IBM Connections

- Various Options for Deep Integration (depending on intended use cases)
 - Side-by-side (**Federation, WAI**)
 - Preferred Technique: Federated Navigation using external URL pages
 - Pro: access to the full set of features of IBM Connections
 - Con: limited customization of user experience, cannot be embedded into context of a Web site
 - Embedding IBM Connections **User Interfaces (Portlets)**
 - Preferred Technique: Consume production-ready IBM Connections Portlets
 - Pro: Versatile Portlets to combine with other Portlets and to embed into context of a Web site, Community integration
 - Con: Slightly reduced set of features, limited customization of user experience
 - Alternate Option: Develop custom portlets, embed selected Connection UI via WAB
 - Embedding IBM Connection **data (DDC)**
 - Preferred Technique: Use DDC to display data from IBM Connection within WCM presentation templates
 - Pro: Flexible customization of user experience, embed into context of a Web site/Web content, Community Integration (includes CRUD)
 - Con: Reduced set of features



Add Social Collaboration

- Expose and manage social media information from IBM Connections like any other piece of web content
- Full control on formatting and layout
 - Incl. responsive design
- Read and Write Operations
- Extremely customizable!



Infuse **social information** into web sites and mix it with any other web content



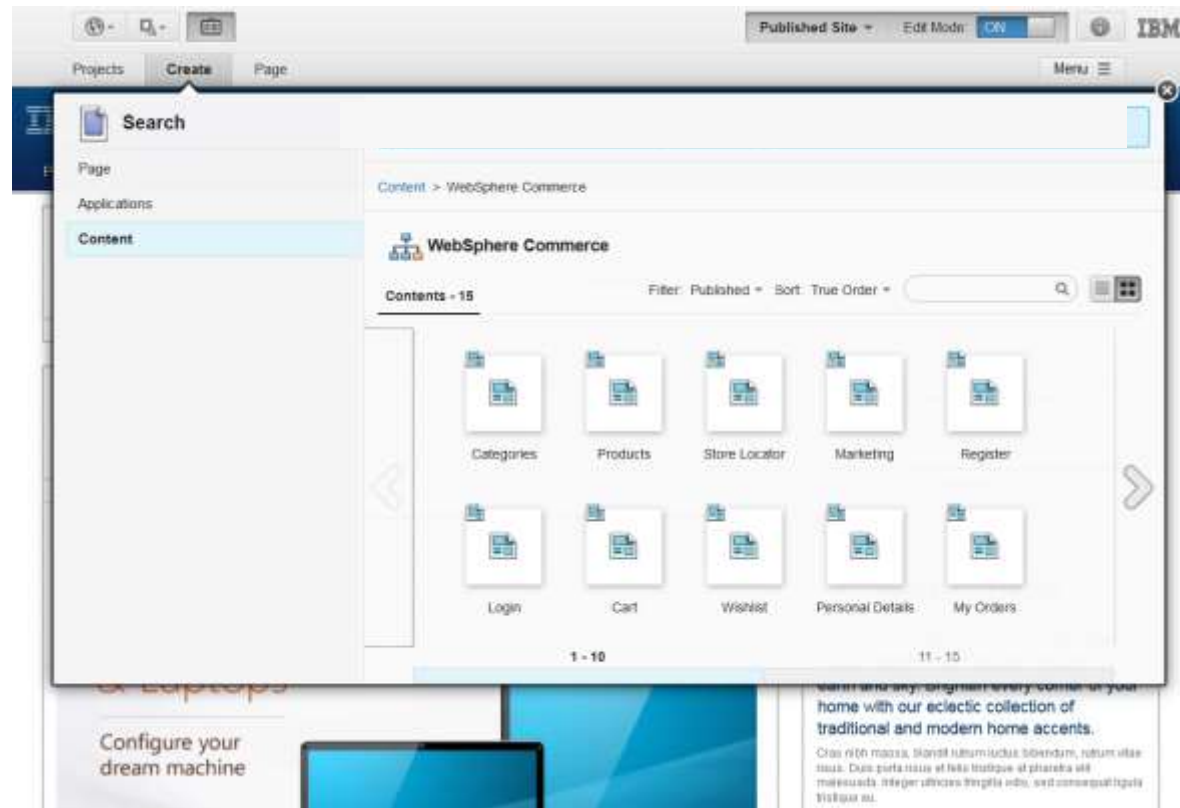
Agenda

- IT Driven Integration
- „Business“ User Driven Integration
- Federation
- Security Considerations
- Examples
 - IBM Connections
 - WebSphere Commerce
 - Business Process Manager
 - Bluemix



Add a Shop

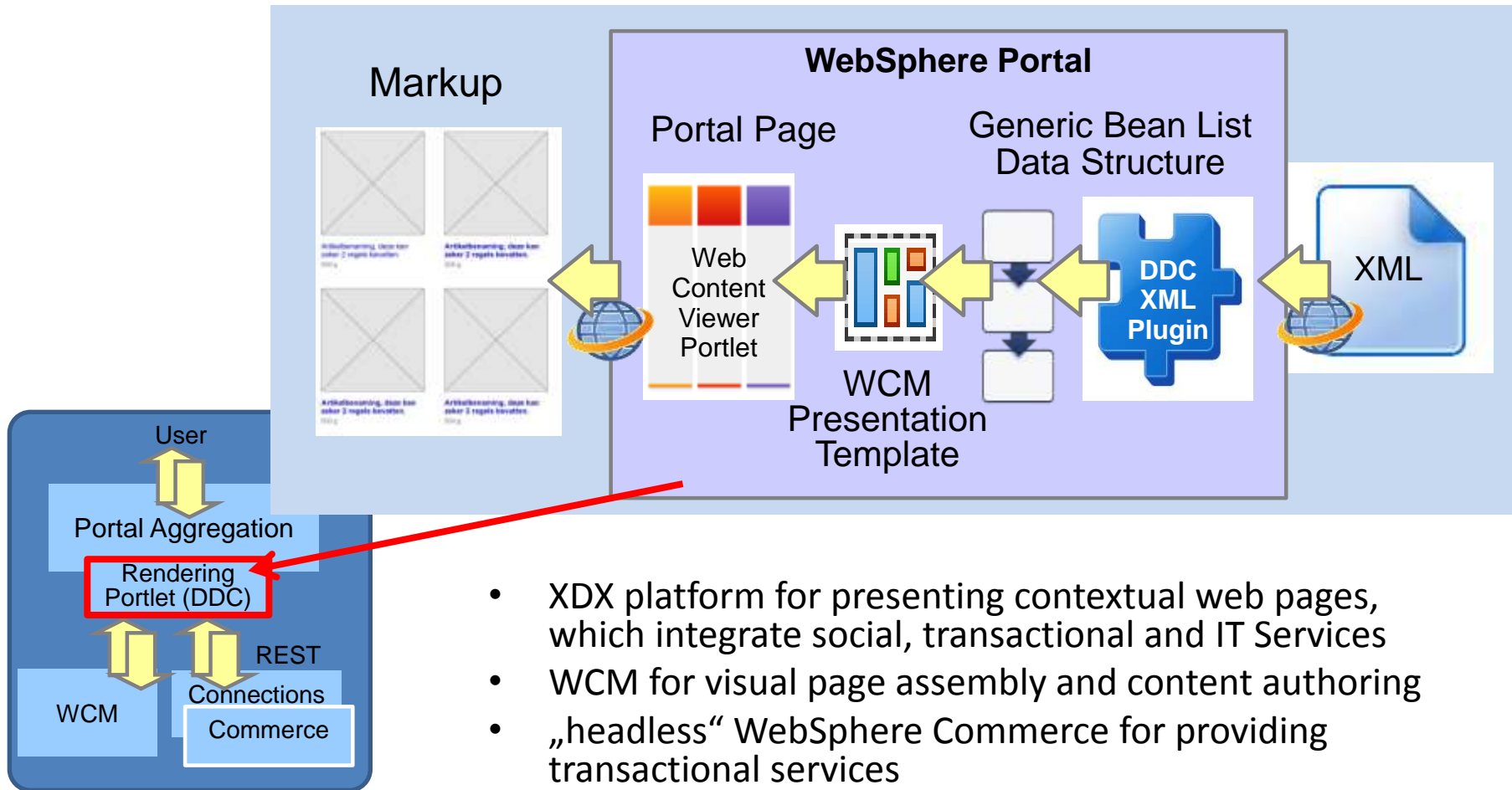
- Drag and drop support for all common Commerce storefront services
- Fully customizable script and markup based components
- Source code included
- Both authoring and presentation fully customizable!
- Leveraging new Commerce public REST service interfaces
- Read and Write Operations



Infuse shop information into web sites and mix it with any other web content



Consuming WebSphere Commerce Services: Digital Data Connector (DDC)



- XDX platform for presenting contextual web pages, which integrate social, transactional and IT Services
- WCM for visual page assembly and content authoring
- „headless“ WebSphere Commerce for providing transactional services

Supporting XDX Capabilities: Digital Data Connector (DDC)



- Versatile Integration Component
- Connects to WebSphere Commerce information
 - Search, product preview, store locator, user account view/update, orders, coupons, wishlist, shopping cart view/add/remove/checkout, marketing promotions
- Exposes that information applying the look&feel **you** have defined (based on markup/WCM presentation templates you have defined)
- Exposed as a re-usable building brick, which Line of business can add to a page and combine with any other building brick (web content, social, apps, custom,)
- Aurora Starter Shop can be built based on XDX Portal via drag&drop using these versatile building bricks



Smarter Commerce Integration with DDC

Example

Business User edits the portlet to

- Select Source
- Filter by Category Path and/or Brand
- Define the Appearance of the List

Managed by WCM component

The screenshot shows the 'Open Edit Form' for a portlet configuration. The form is divided into several sections:

- Source:** A dropdown menu with options: Products (selected), Products (ignoring subcategories), Product Details, Categories (one level), Categories (two levels), Categories (all levels), Current Category, Brands, and Brands (ignoring subcategories). A callout box points to this section with the text: "Select source from a predefined list".
- Filter By Category Path:** A text input field containing the path: "/HOME_DEPOTMasterCatalog/Appliances/Refrigerators". A callout box points to this field with the text: "Filter by a specific Category Path".
- Filter by Brand:** A text input field containing the brand name "GE". A callout box points to this field with the text: "Filter further by Brand".
- List Appearance:** A dropdown menu with options: Select Component and Shop Design / Product Grid (selected). A callout box points to this dropdown with the text: "Select how the list is shown".

At the bottom of the form, there are buttons for "Save and Close", "Read", "Preview", "Apply Authoring Template", "More", and "Close".



Consuming WebSphere Commerce Services: IBM's Sample DDC Templates (Examples)

- Categories
- Filters
- Product Details

The image displays three overlapping screenshots of a web application interface for a clothing and shoe store.

- Categories View:** Shows a navigation menu with "Categories" selected. The current selection is "Apparel -> Boys". Below this, there are three category thumbnails: "Pants" (a pair of jeans), "Tops" (a striped shirt), and "Shoes" (a pair of orange shoes). A "Clear category selection" link is at the bottom.
- Product Previews View:** Shows a search bar and two filter sections. The "Filter by, Brand .." section has a "Borsati" filter selected with a count of (2). The "Filter by, Price .." section shows price ranges: (* 100) 100) (2), (100 200) 200) (0), (200 300) 300) (0), (300 400) 400) (0), (400 500) 500) (0), and (500 *) (0). Below the filters, two product thumbnails are shown: "Borsati Orange Baby Shoes" and "Borsati Baby Canvas Shoes", both priced at \$20.0. A "Clear product selection" link is at the bottom.
- Product Details View:** Shows the details for "Albini Black Canvas Shoes". It includes a search bar, a product image of a black and white sneaker, the product name "Albini Black Canvas Shoes", and a description: "Which boy wouldn't love black canvas shoes? The greatest of all sports shoes, these trainers are hardwearing and lasts a long time. The black and white combination gives an elegant look." Below the description, there is a price of \$0.0, a color selector set to "Black", and a quantity selector set to "1". There are also links for "Sign in for 'Cart' functionality" and "Sign in for 'Wishlist' functionality", and a "Clear product selection" link at the bottom.



Download: <https://developer.ibm.com/digexp/>

Consuming WebSphere Commerce Services: IBM's Sample DDC Templates (Examples)

- Shopping Cart
- My orders

Shopping Cart

Your shopping cart is empty. If you see something you would like to add to your shopping cart when shopping, click "Add to Cart".

Shopping Cart



Borsati Blue Carpenter Jeans
Quantity ordered: 1
Quantity in stock.
SKU: BCL015_150302
[Remove from Cart](#)

Promotional code:
 [Apply](#)

Order sub-total: 30.00
Discount: 0.00
Order total: 30.00

[Empty Cart](#)
[Checkout Cart](#)

My Orders

[Get order history](#) [Get recurring orders](#)

My Orders

[Get order history](#) [Get recurring orders](#)

OrderId: 11012
Buyer Distinguished Name: uid=sean,o=default organization,o=root organization
last Update Date: 2014-10-17T15:33:23.710Z
Order Status: **Order received and ready for processing**
[View Details](#) [Reorder](#)

My Orders

[Get order history](#) [Get recurring orders](#)

OrderId: 11012
Buyer Distinguished Name: uid=sean,o=default organization,o=root organization
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last Update Date: 2014-10-17T15:33:23.710Z
Order Status: **Order received and ready for processing**
[View Details](#) [Reorder](#)



Example: Consumer Engagement at illy

Path to conversion

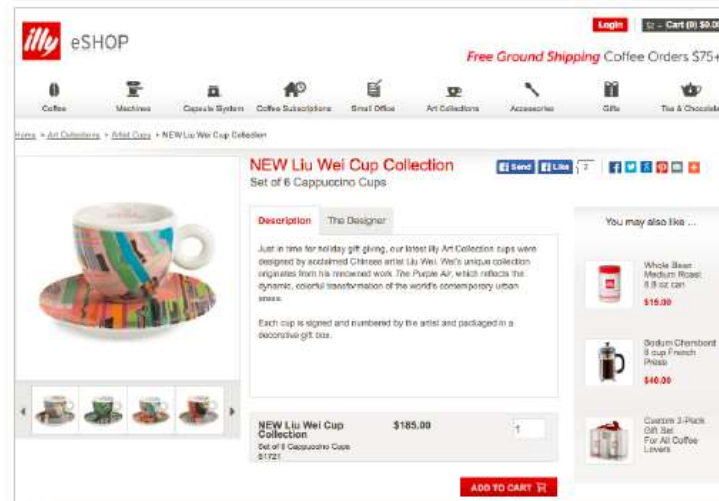
Make you fall in love

Emotional Path



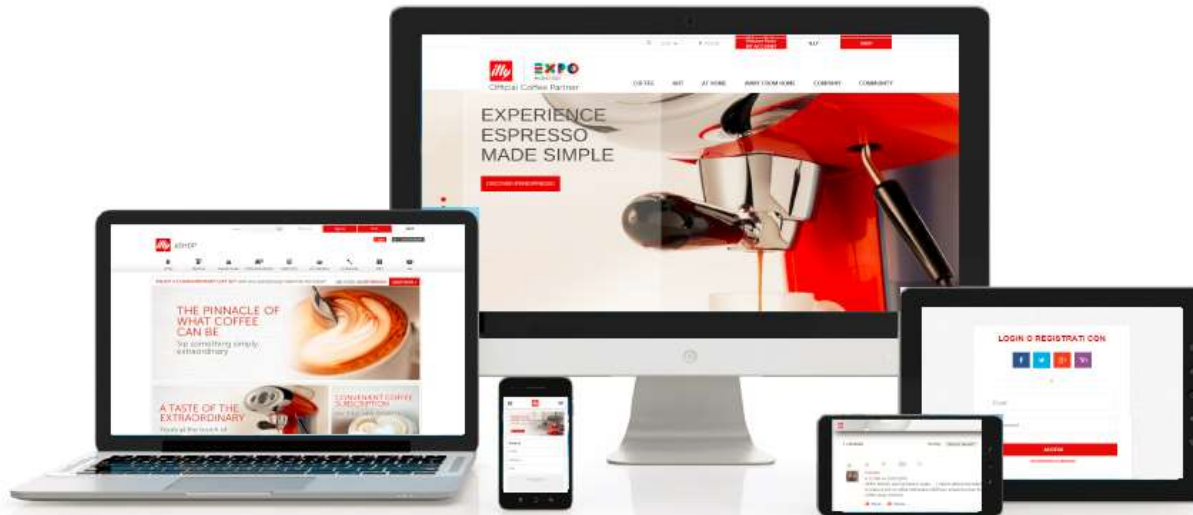
Make buying frictionless

Product Page



Consumer Engagement at illy

Digital footprint-Platforms



- Websphere CMS
- Websphere Commerce
- SSO
- Social login
- 3rd party social widgets
- CRM



Integrating Commerce

That will be created by a marketing person....

Allows you to look behind the scenes of the IT department...



Social Rendering Portlet

WCM Content Spot

The screenshot shows a website layout for 'TOP FAMILY BIKE RIDES'. At the top is a navigation bar with links: HOME, SHOP, SERVICE, MEMBERSHIP, KNOWLEDGE CENTER, ABOUT US, LOGIN, CART. Below the navigation is a large hero image of a child on a bicycle with the text 'TOP FAMILY BIKE RIDES'. The main content area is divided into several sections: 'PARENT'S CORNER' with a list of articles; 'TEACH 'EM HOW TO ROLL' with a video player; 'INSTALLING THE JOY OF THE RIDE' with an image of a child with a bicycle; 'SHARE YOUR PICS!' with a grid of photos; and 'GET THE GEAR' with three product listings: 'THROWBACK RED RACER', 'KIDS 652XX BLUE', and 'LITTLE RED TRIKE III'.

EMM (Interact)

Brightcove

WCM (w/Custom Toolbar Extension)

Commerce w/ DDC

Demo Greenwheels - Recorded

Full Greenwheels demo recordings on YouTube:

– ExperienceOne (V1):

<https://www.youtube.com/watch?v=MLFzZ29gBns>

– Marketing (V2) -

<https://www.youtube.com/watch?v=Idrueug10wQ>

– Front end developer (V2) -

<https://www.youtube.com/watch?v=22ilecyFGOY>



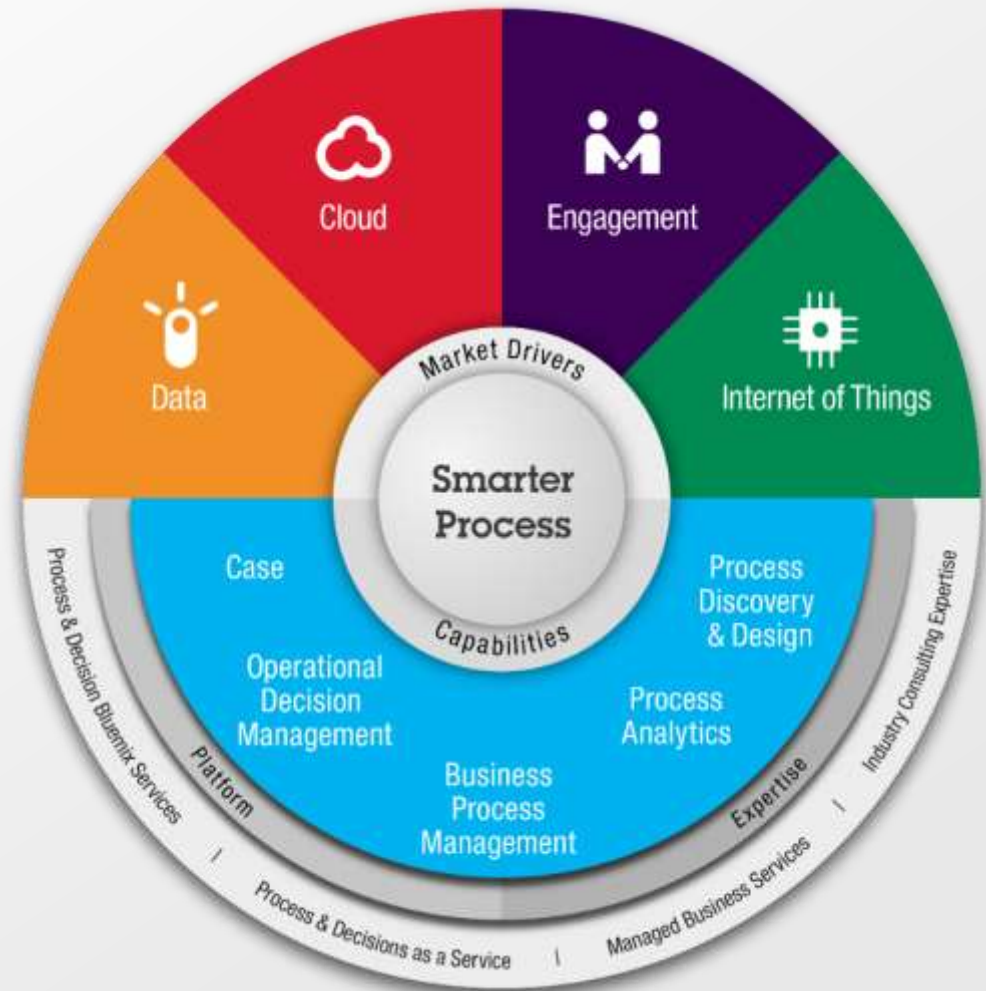
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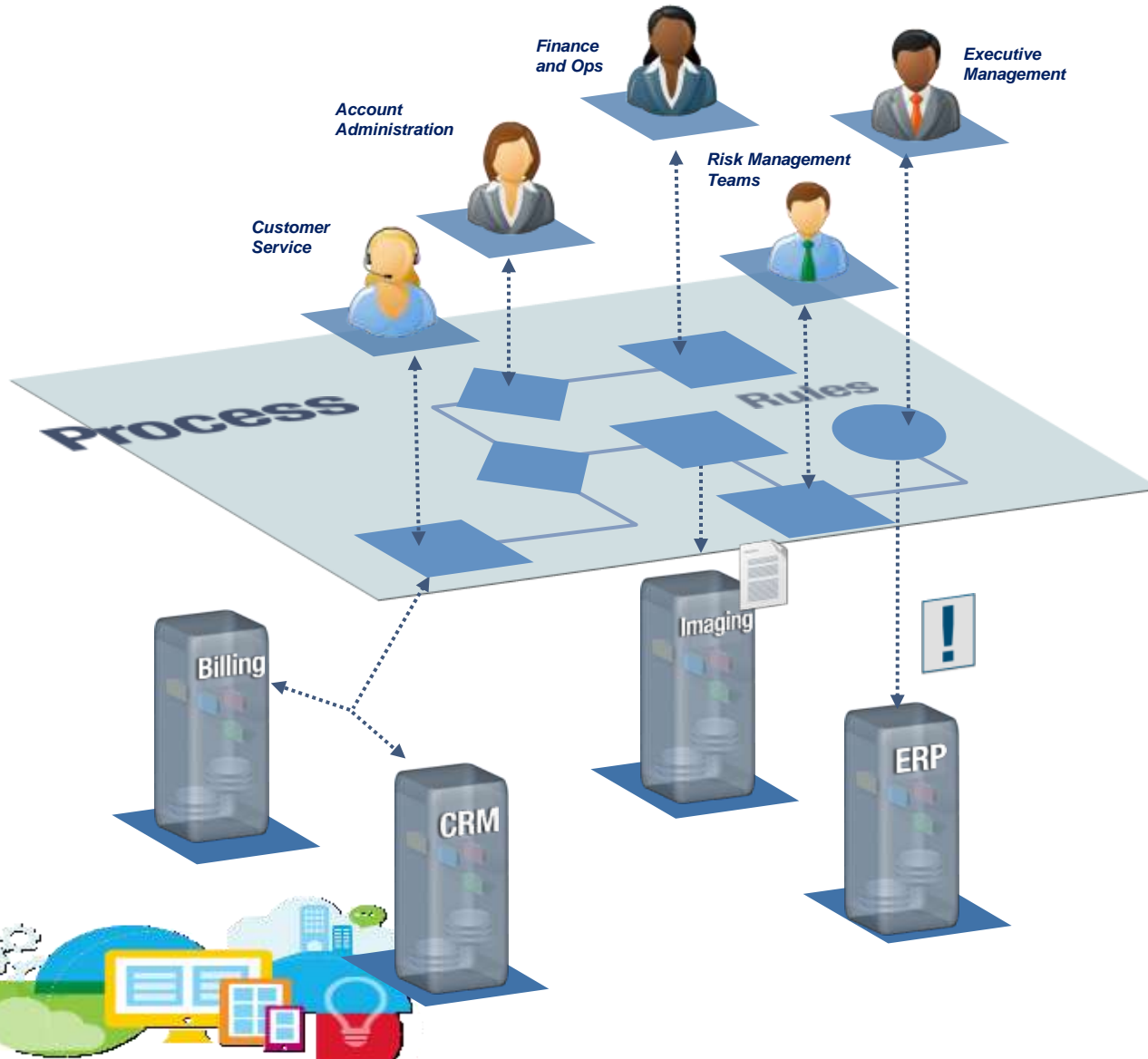


Smarter Process is...

IBM's solution for reinventing business operations to deliver greater customer-centricity.



BPM brings order to the chaos



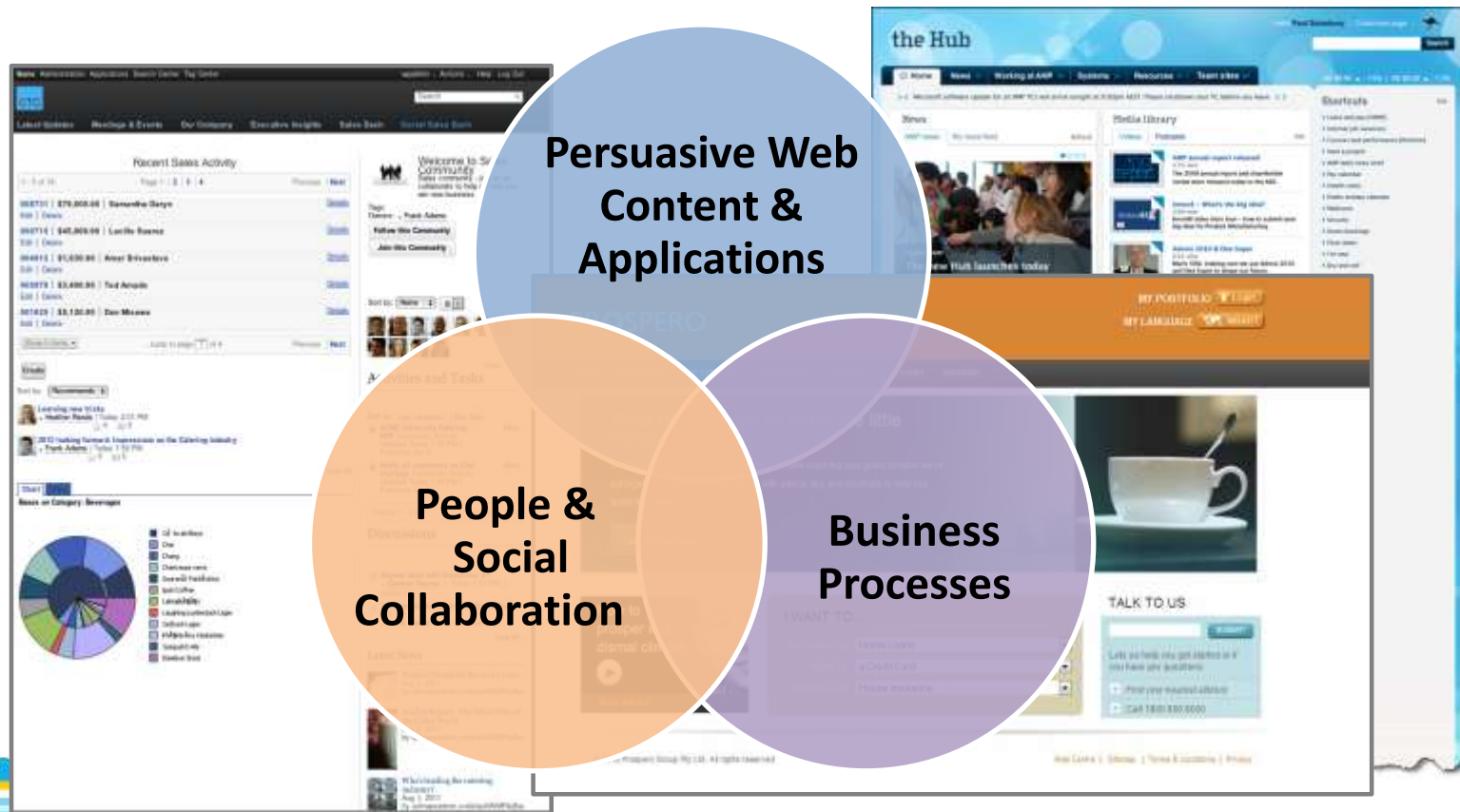
- 1 Automate workflow & decision making
- 2 Reduce errors and improve consistency
- 3 Standardize resolution across geographies
- 4 Leverage existing systems and data
- 5 Monitor for business events and initiate actions
- 6 Real-time visibility and process control

BPM Benefits:

- Huge Reduction in Manual Work, Errors
- Faster, More Consistent Issue Resolution
- Easier to Manage the Business
- Consistent Case Handling

Value Add: IBM Digital Experience

- **Intranet, extranet, or website** that seamlessly weaves web content and business applications, resulting in dramatically enhanced collaboration capabilities and improved business processes



Integration Scenarios

- **B2E**

- Business User facing (heavy use)
- Focus is on productivity and versatility
- Side-by-side User Experience:
 - Operational business users / working with standalone Process Apps
- Integrated (embedded) User Experience:
 - Business users accessing limited BPM capabilities via employee portal

- **B2C**

- End-User facing (casual use)
- Focus is on making human interactions an enjoyable & secure digital experience
- Unified User Experience
 - Deep integration, which takes greater development effort, but provides better end-user design within an external facing web site



Lists and Dialogs

- **Lists**

display all tasks assigned to a user and allow him to manage those

- Unified Task List
- Digital Data Connector

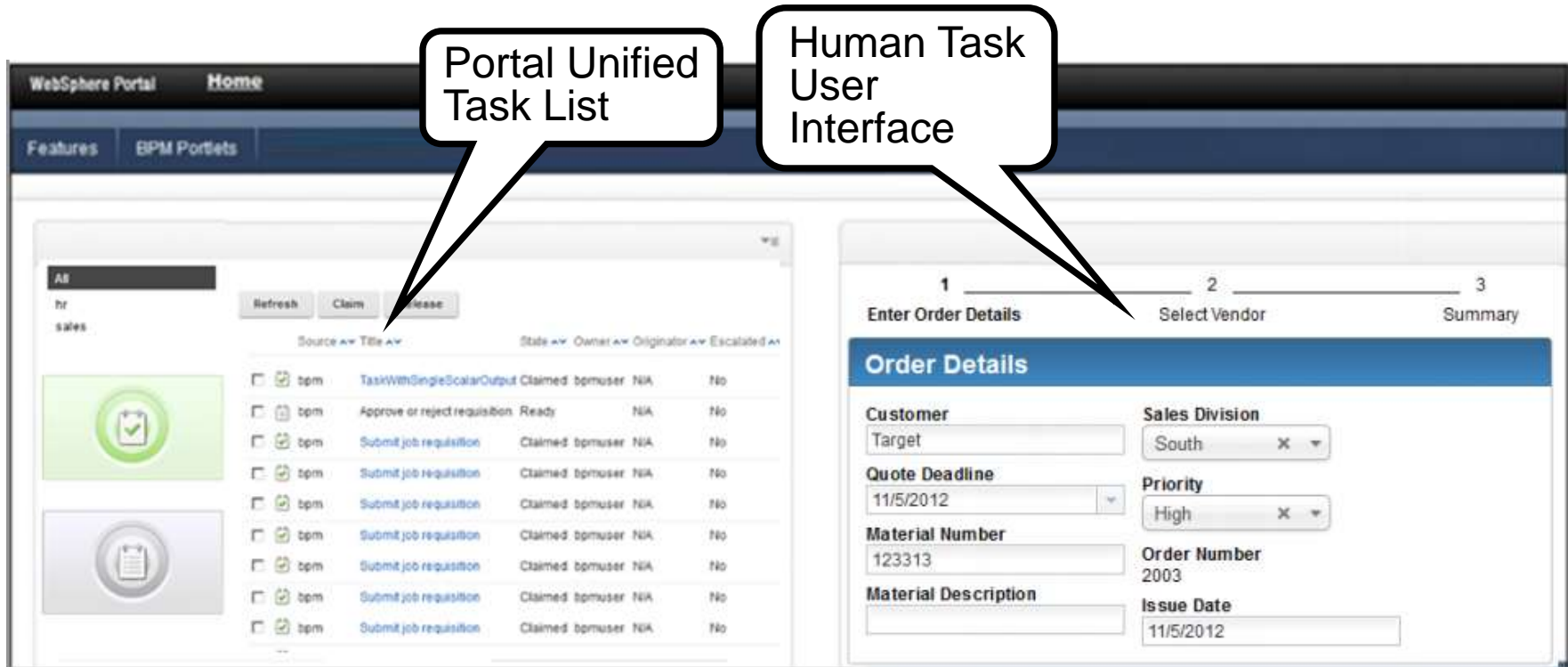
- **Dialogs:**

View or enter Data into a particular single Task

- Coach Viewer Portlet
- Script Portlet



Lists and Dialogs



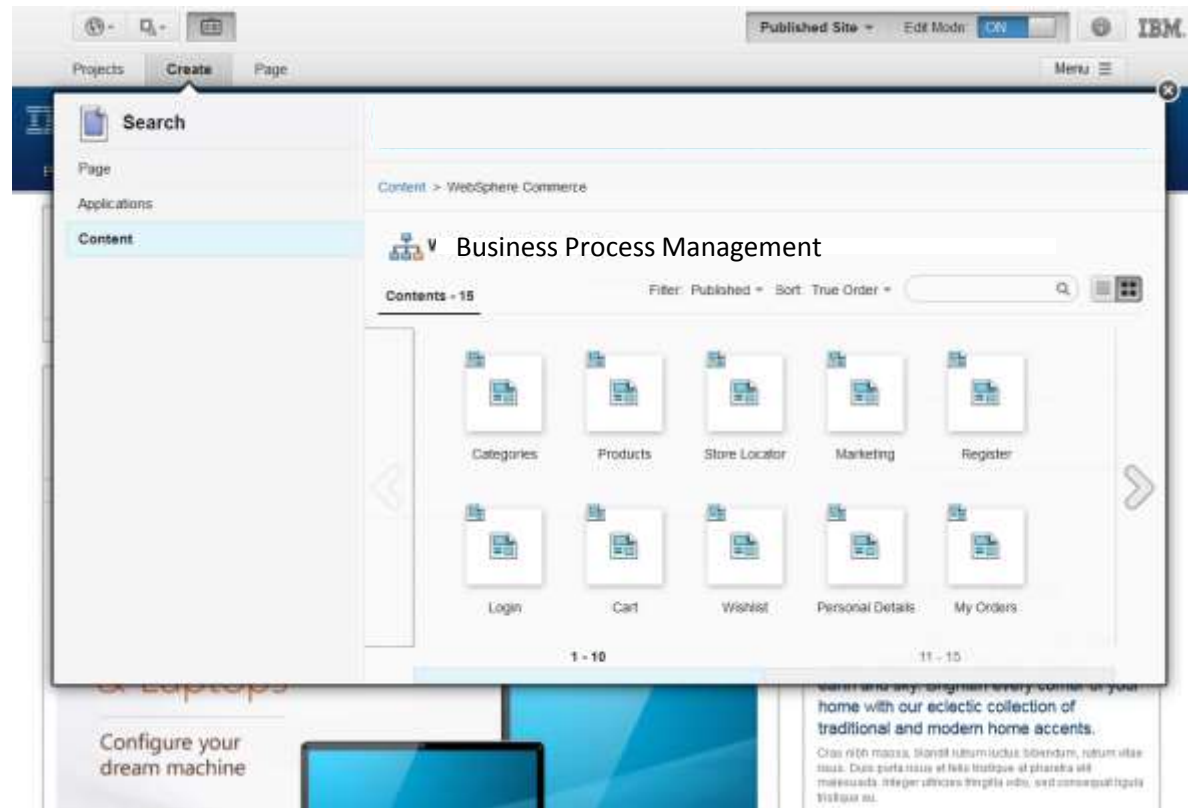
- Unified Task Lists collects human tasks and forms from different task providers or form servers and shows a list of the ones that the Portal user can claim/fill/release.

- UTL sends the selected TaskID to a Coach (or a Dynamic Coach) portlet. This portlet is an iframe that displays in a Portal page a BPM coach as it has been designed



Add a Business Process

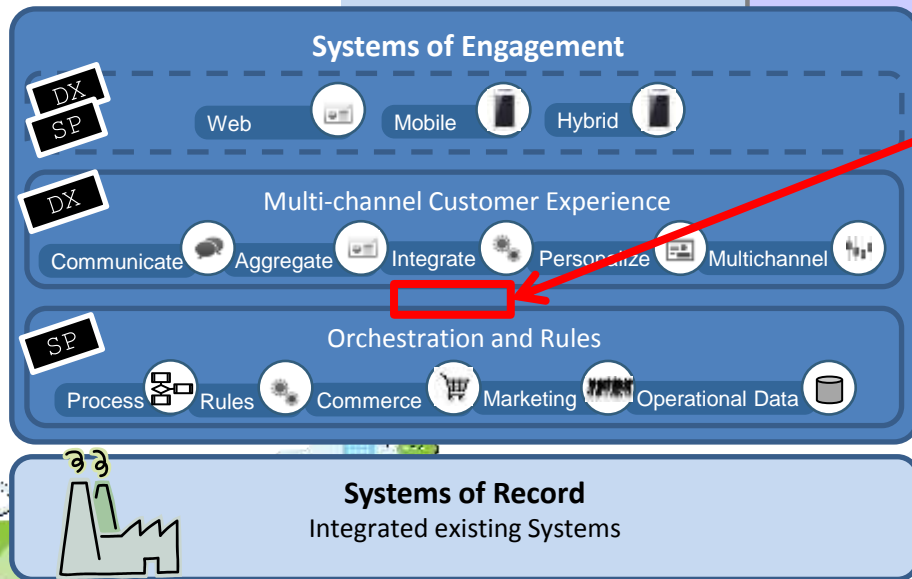
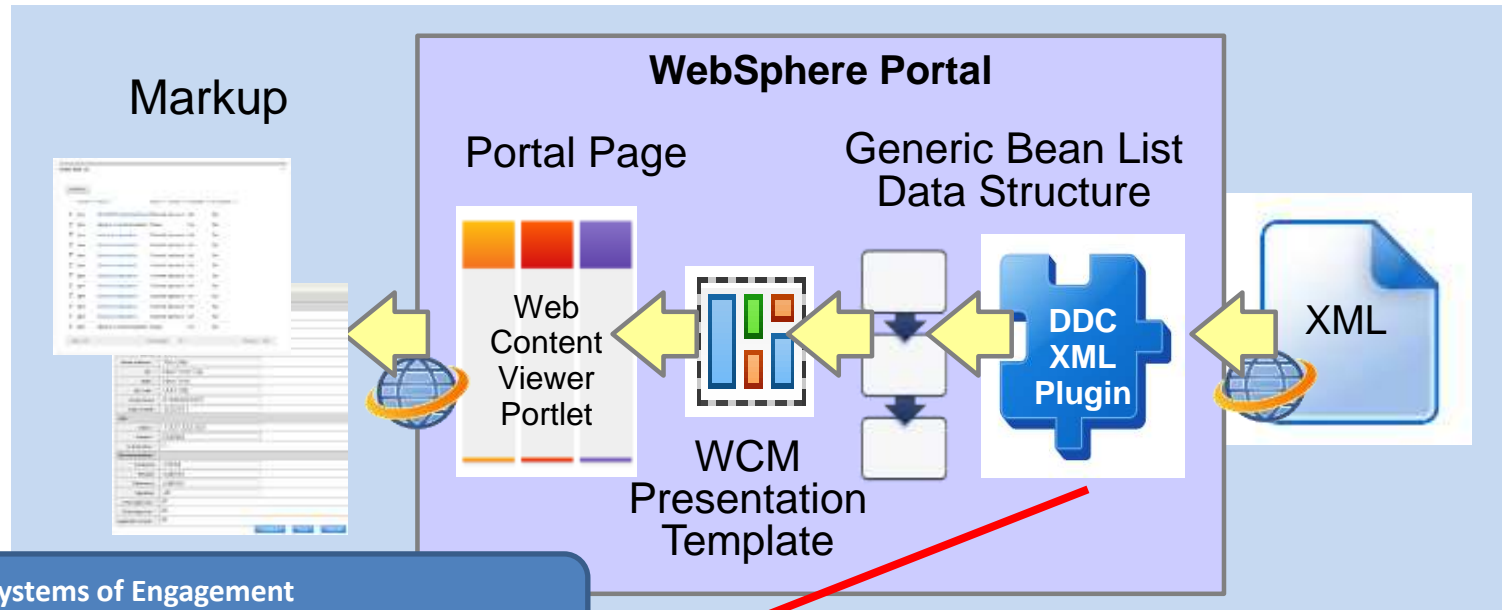
- Expose and manage Human Tasks and Dialogs from BPM like any other piece of web content
- Custom development



Infuse **Human Tasks** into web sites and mix it with any other web content



DDC (Again)



- XDX platform for presenting contextual web pages, which integrate social, transactional and IT Services
- WCM for visual page assembly and content authoring
- „headless“ BPM for providing transactional services and processes

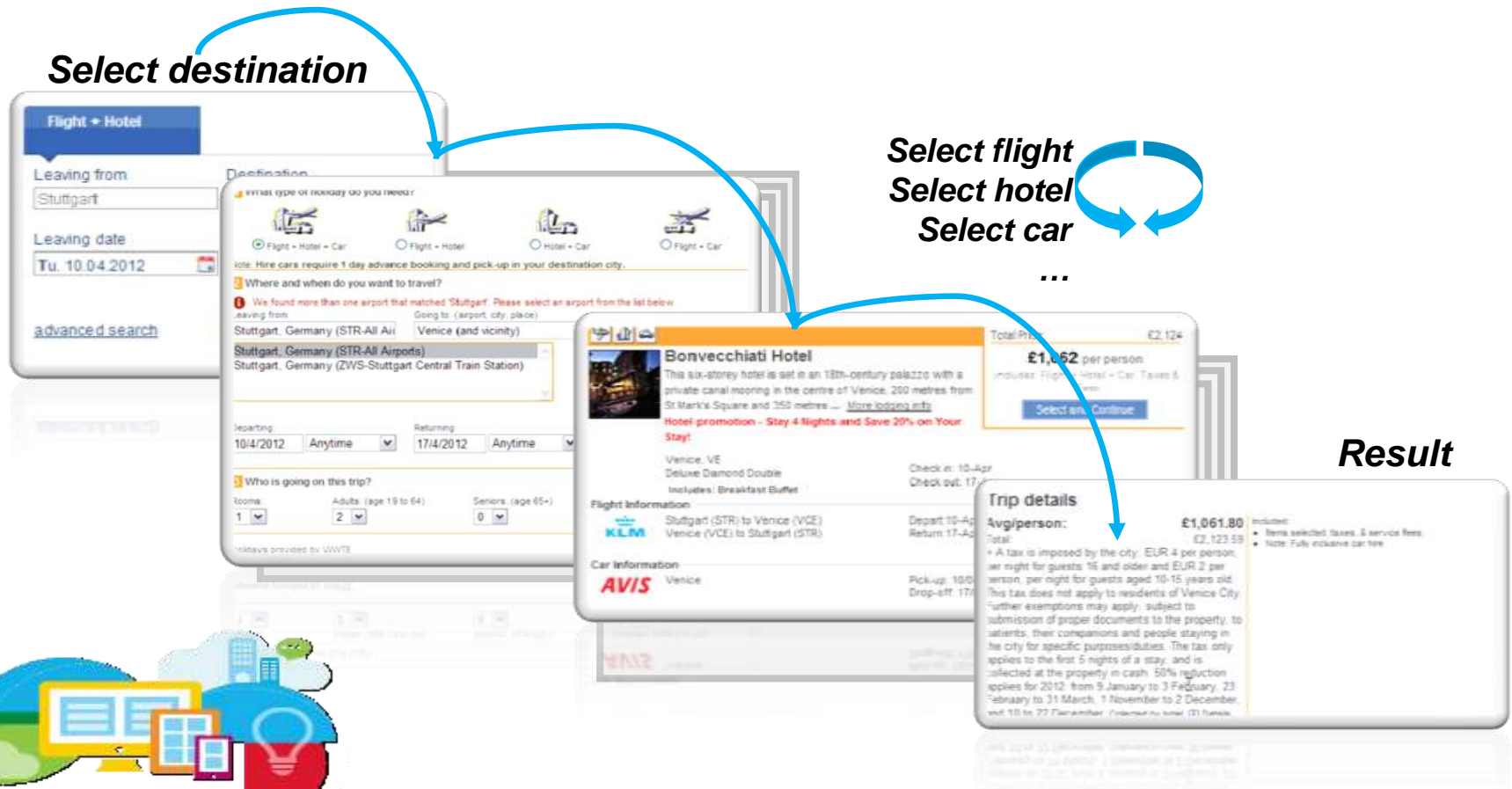
Script Portlet (Yet Again)

- **Use the Script Portlet to implement a Javascript snippet, which fetches data provided by a BPM**
 - JSON
 - AJAX calls
 - Ensure configuring outbound connection to BPM via Portal's AJAX proxy

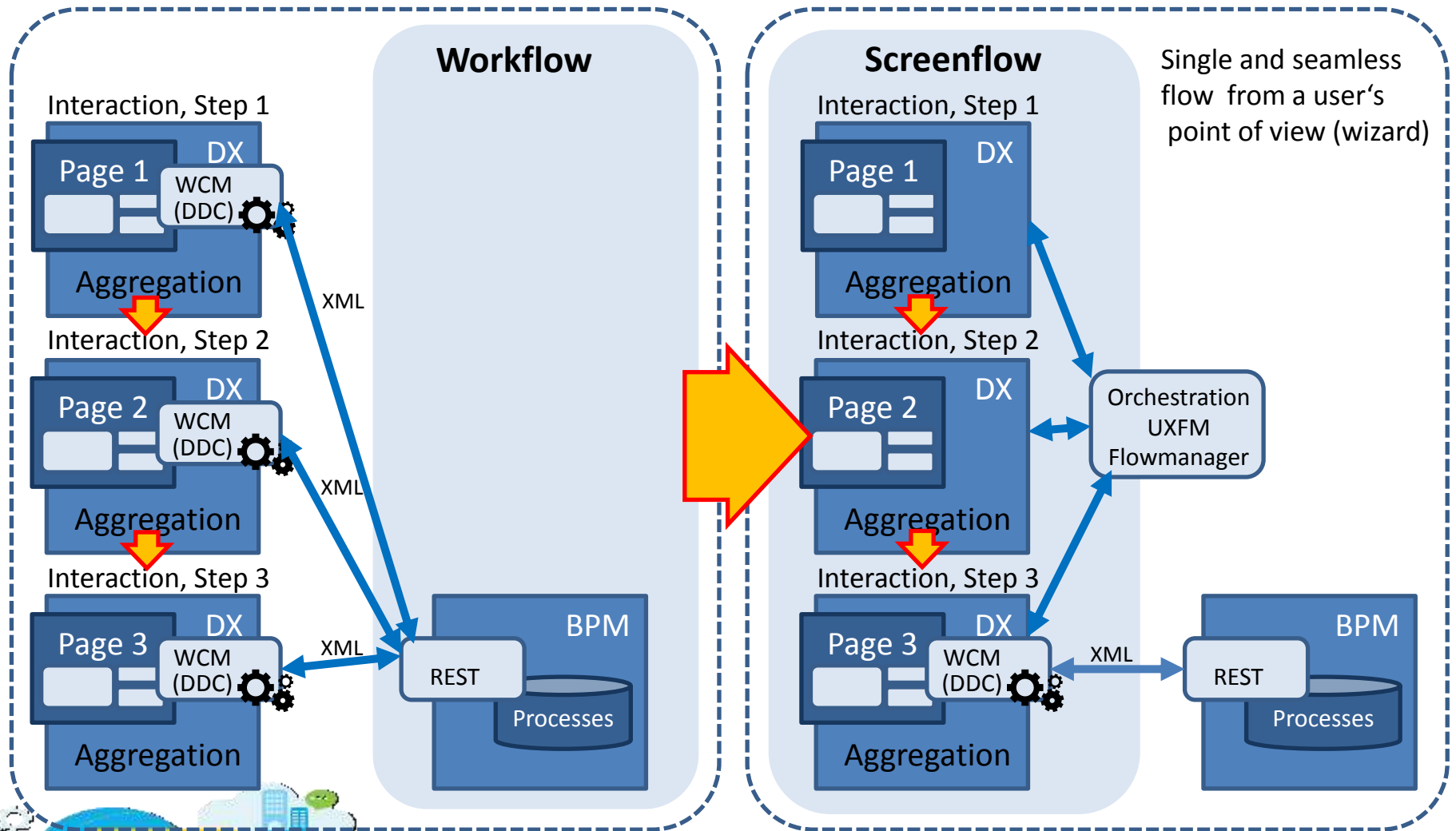


Screenflow versus Workflow: UXFM

- Customers often want to implement solutions guiding users through a sequence of screens just like in a wizard
- Screenflows feed into Human Tasks of a Workflow



Screenflow versus Workflow: UXFM



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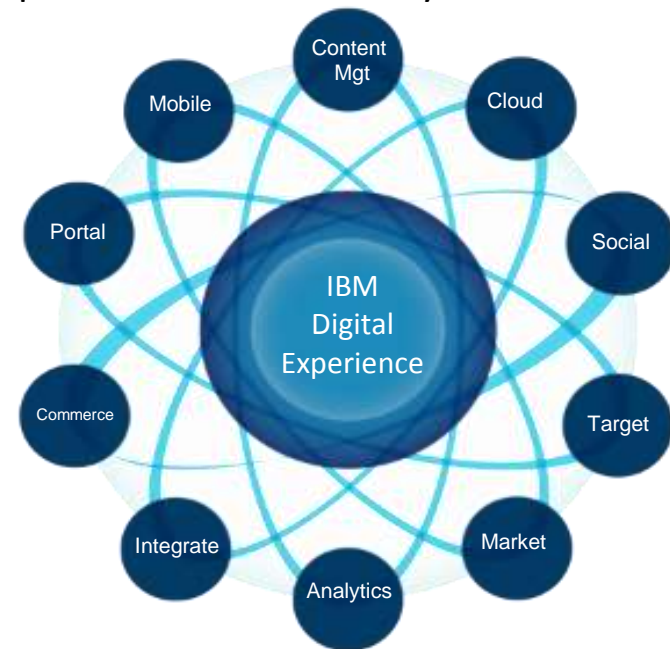
Benefits of using Bluemix with IBM DX

Quickly create applications with Bluemix and integrate them together into cohesive digital presence

- Agile development of discrete cloud applications and/or services
- Frictionless access to runtimes, tooling, and services
- Bring the complex world of on-premises and cloud together into a seamless, cohesive and productive user experience
- Provide value add through content management, multi-channel delivery, personalization, security, etc.



+

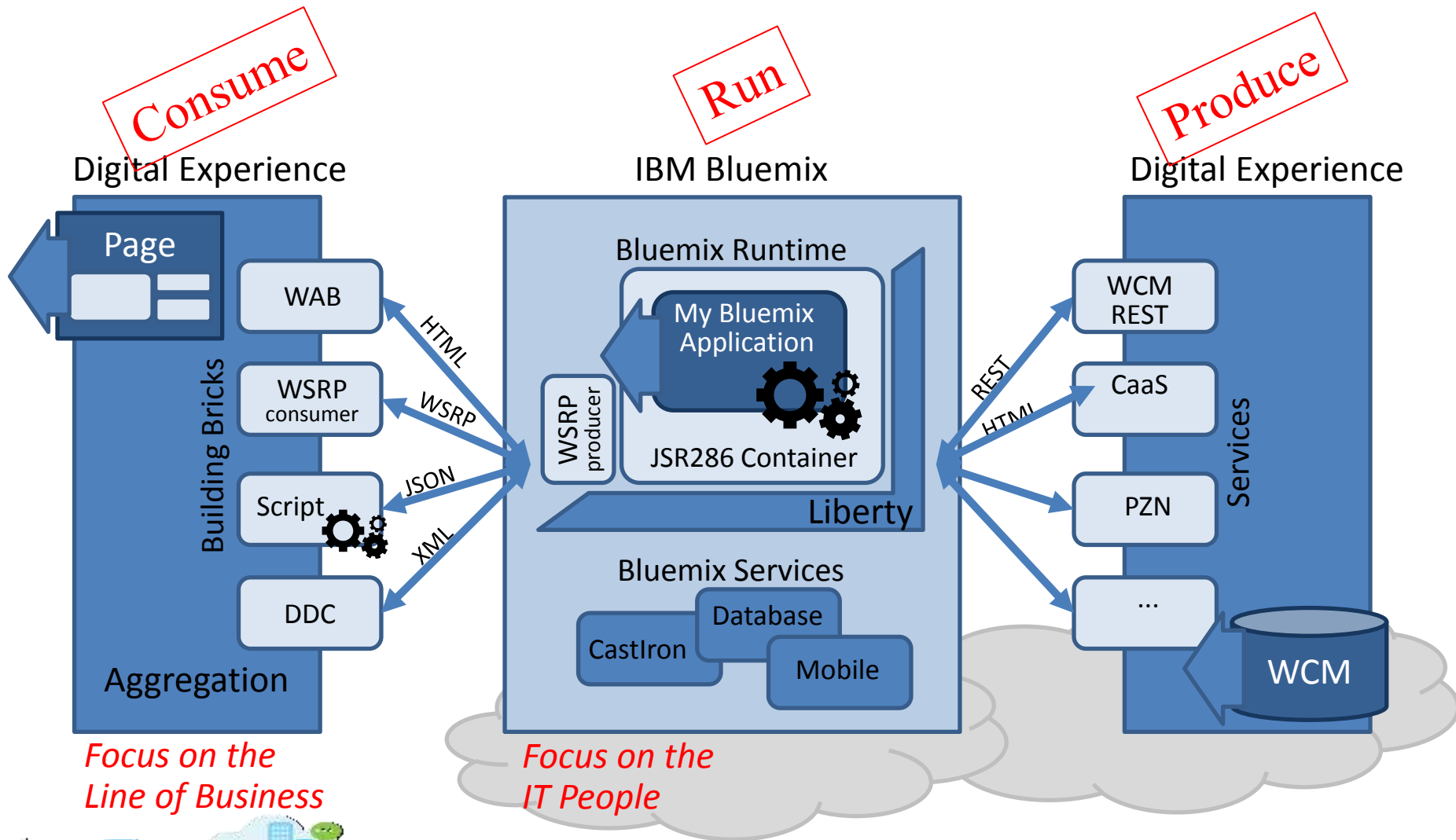


Service Aggregation versus UI Integration

- IBM Bluemix aggregates services to **apps**
 - A Bluemix app can expose components, which are derived from a vast variety of services
 - IBM Bluemix addresses developers
- IBM Digital Experience aggregates components to adaptive and contextual **web pages**
 - Components can be based on markup or even just data, which is provided by the Bluemix apps
 - IBM Digital Experience addresses line of business



Combining the Power: Consume, Produce, Run



Consume

4 patterns for consuming Bluemix services

1	Script Portlet	<p>Typical Use Case: Render headless services using REST/JSON.</p> <p>Key Benefits: Leverages widely available web development skills (HTML/CSS/Javascript), WCM management and deployment (projects, approval workflows, previews, etc).</p>
2	Digital Data Connector (DDC)	<p>Typical Use Case: Render data being served from external systems such as Bluemix</p> <p>Key Benefits: LOB control over presentation and fit into existing site, leverage WCM management and deployment features</p>
3	Web Application Builder (WAB)	<p>Typical Use Case: Used for “on the glass” integration of external application UI</p> <p>Key Benefits: Custom web apps without readily/easily accessible APIs and/or where native UI needs to be maintained</p>
4	Web Application Integrator (WAI)	<p>Typical Use Case: Apply the portal theme and navigation to a Bluemix application.</p> <p>Key Benefits: Single up-to-date navigation across multiple systems</p>

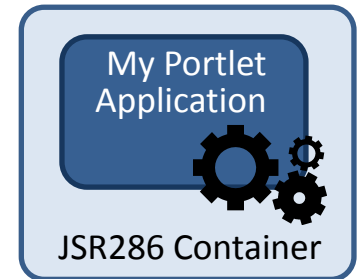


Run

IBM Digital Experience: Liberty Profile Support



- Already Delivered
 - Portlet Container (Runtime) for Liberty profile
 - Portlet Development Tools for Liberty profile
 - WSRP Producer for Liberty
 - Portlets only / no page aggregation engine
- Supported Use Cases
 - Develop portlets in a lightweight development environment based on Liberty
 - Execute portlets in a remote Liberty runtime
 - Load balancing
 - Isolation within a multi-tenant environment
 - Run Portlets within Bluemix (based on Liberty runtime)



Run

Installing the Portlet Container on Liberty

Download V8.5.5

- Install Liberty Profile:

```
java -jar wlp-developers-runtime-8.5.5.3.jar  
java -jar wlp-developers-extended-8.5.5.3.jar
```

- Install Portlet Container

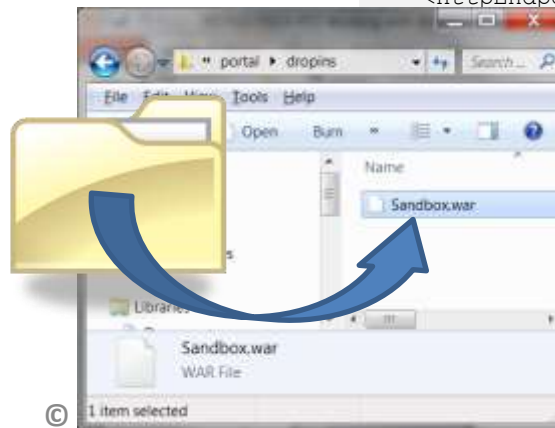
```
featureManager install portlet-2.0  
featureManager install portletserving-2.0
```

- Create, configure and start a Server

```
server create portal  
update Server.xml  
server start portal
```

- Deploy (or rather „drop“) a Portlet

```
<server description =\"lightweightportalserver\">  
  <featureManager>  
    <feature>jsp-2.2</feature>  
    <feature>usr:portlet-serving-2.0</feature>  
    <feature>usr:portlet-2.0</feature>  
  </featureManager>  
  <httpEndpoint id=\"defaultHttpEndpoint\"  
    port=\"9080\" httpsPort=\"9443\"/>  
</server>
```



Run

Running Portlets directly in IBM Bluemix

- Create a Liberty server instance
- Deploy your Portlets on the Liberty server
- Package the server
 - packages the Liberty server including the server configuration, all installed Liberty features and all deployed applications:
 - `wlp/bin/server package portal --include=usr`
- Push the server package to IBM Bluemix
 - The Bluemix platform supports to functionality of pushing not only a single Java application to the cloud, but also to push a complete Liberty server.
 - `cf push mylightweightportal -p wlp/usr/servers/portal/`



Run

WSRP in Liberty

- A lightweight WSRP Producer
- Based on the JAX-WS standard for Java based web services
- Supports the WSRP 2.0 as well as WSRP 1.0 standards
- Supported on IBM Portlet Container for IBM WAS Liberty Profile

- Available at IBM Collaboration Solutions Catalog

<http://ibmurl.hursley.ibm.com/4A47>

- EAR file, simply download and copy to

`<LIBERTY_HOME>\usr\servers\defaultServer\dropins`



The screenshot shows the IBM Collaboration Solutions Catalog page for the IBM WSRP 2.0 Producer for IBM WebSphere Application Server. The page includes the IBM logo, a 'Return to Catalog' link, and the product title. It lists the version as 2.0.0, published by LiveLink on Jan 24, 2014, and provided by IBM. The rating is 5.0 stars, and it has been downloaded 554 times. The description states that the product is a lightweight WSRP Producer that supports the WSRP 1.0 and WSRP 2.0 standards. It provides JSR 208 and JSR 116 compliant portals that are deployed on IBM WebSphere Application Server to remote WSRP Consumer portals. The page also includes buttons for 'Bookmark', 'Share', and 'Report Malicious Content', and a 'Full Description' section.



Produce

Content as a Service

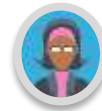
- Digital Experience provides a content service, including:
 - **line of business, mobile app developers** and **Bluemix** web content management capabilities (*content authoring, workflow, auditability, segmentation, notifications*) and APIs needed to provide **personal, adaptive, and relevant** content within mobile and Bluemix applications



Content as a Service Strategy



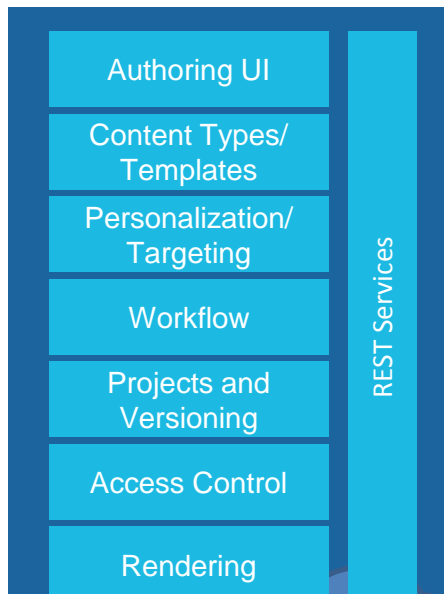
Content Manager



Developer



**End-User
Omni-Channel Experience**



Based on
DX on Cloud
Or on-premises



**Web Browsers,
Web Sites**

Safari, Firefox,
Chrome, Explorer,
other



**Mobile Apps and
Web**

Native and hybrid
Wearable technology



Applications

Social, BI, Analytics,
Custom...



Internet of things
Billions of connected
devices drive personal
content



Content as a Service

Clean, easy to use UI allows LOB quickly create mobile app content

Easily add new content from out of the box content types or create your own

View current projects and content that needs your approval

VIEWS

- All
- Open Projects
- Pending Approvals

CONTENT TYPE

- Article
- Biography
- Catalog
- Notification
- Offer
- Plain Text
- Rich Text

View all content or filter by content type

View / All 19

Search content

<input type="checkbox"/>	Name	Author	Date		
<input type="checkbox"/>	Auto Loan Auto loans starting at only 1.9% for 60 months and no money down.	Samantha Darr	Yesterday 5:40:48 AM		
<input type="checkbox"/>	Insurance Ensure your family is protected, get a free life insurance quote today!	Samantha Darr	Yesterday 5:39:45 AM		
<input type="checkbox"/>	Home Loans Special home loan rates this week only. Get more information here or at your local branch!				
<input type="checkbox"/>	This is my title Provide a brief summary of the article here ...	Heather Reedy	Jan 8, 2015		
<input type="checkbox"/>	A new Article Provide a brief summary of the article here ...	old-wpadmin@defaultWMPtoBasedTeam	Dec 16, 2014		

Preview content before approvals

Quickly assign content to a project to track changes and drive approvals

First Previous Next Last



IBM DX and Bluemix Value Proposition

- IBM Digital Experience (DX) focuses on building personalized user experiences by aggregating applications, services, data, and persuasive content
- IBM Bluemix is a platform for “born on the cloud” solutions with a set of runtimes and services provided by IBM and partners that enable developers to quickly build and operate new services and applications
- Our value proposition with Bluemix is three-fold:
 - Enable line of business users to integrate and consume Bluemix services and apps into a personalized user experience through prescribed patterns
 - Opportunistically produce discrete services of the IBM DX platform via Bluemix that can be discovered and consumed by new applications (e.g. adaptive web content)
 - Natively run DX components within Bluemix , i.e. Portlets (based on Liberty Runtime)



Additional Resources

- Technical presentation:
<https://w3-connections.ibm.com/files/app#/file/ed84e739-da03-4647-ab15-146f4bae6e0c>
<https://w3-connections.ibm.com/files/app#/file/ac1a1ca7-eb72-4e3e-8edd-0cca56acca0d>
- Demo: consuming bluemix services in WCM: <https://w3-connections.ibm.com/files/app#/file/c94cfdd8-14a0-4ee4-86e2-98d33f3b42b3>
- Demo: WCM based scripts consuming bluemix services: <https://w3-connections.ibm.com/files/app#/file/311845bb-da9e-4eba-a432-04be2b3dd979>
- Demo: Bluemix webapplications mixed with DX pages: <https://w3-connections.ibm.com/files/app#/file/4cdfb9c2-b2dc-4578-a845-6080b1f3e067>
- Demo: Consuming bluemix app in DX: <https://w3-connections.ibm.com/files/app#/file/c9bf57df-d72f-44c7-9d99-3e889122b7eb>



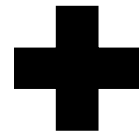
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Summary



Summary: Powerful Tools



Integration Examples

IBM® virtuser Actions Log Out

Welcome Mobile Products Feeds Getting Started **Landing** Targeted

Integration is essential

virtuser - Aug 28, 2014

Integration is essential

BlueBooking

Hotels Search

City

From

To

Google Map



NYT > International Business

The New York Times

International Business



Sep 19, 2014

[DealBook: Live Blog: Tracking the Giant Alibaba I.P.O.](#)



Why we need two kinds of Programming Approaches

J2EE



Core Functionality:

Essential customer value (“Signature Feature”)

- Main purpose of this web site
- Produced and managed by IT (developed and staged)
- Developed in multiple steps by multiple teams
- Classic Coding, J2EE/JSR286, Eclipse, RAD, WEF

- Quality of Service, certified
- Expensive, but long lasting

*“Cooking” skills needed. Keep in mind:
it takes a while to turn a cow into a steak*

XDX



Additional Features:

Key creative value (“Exceptional digital experience”)

- Distinguishing, competitive differentiator
- Created and added on the fly by line of business (authoring)
- Prepared instantly by instantiating IT assets (portlets) and adding self-created add-ons (content, widgets, ...)
- Authoring, Wysiwyg, inline editing, drag&drop, rules, scripting, HTML, FEB, HTML, CSS,
- [DDC](#), [WAB](#), [Script Portlet](#), [Rendering Portlet](#)...

- Cost effective, highly dynamic and adaptive
- Easy to change frequently
- Contextual, aggregated, and targeted to individual customer

*Prepared rather than cooked. This is the fine “art”
of fresh and individual composition*



For Additional Information

- **IBM Digital Experience Solutions**
<http://www-01.ibm.com/software/collaboration/digitalexperience>
- **WebSphere Portal and IBM Web Content Manager Information Center Wiki**
<http://www-10.lotus.com/ldd/portalwiki.nsf/>
- **IBM Digital Experience Demonstrations:**
<http://www.youtube.com/user/IBMXWebX>
- **IBM Digital Experience Developer**
<http://developer.ibm.com/digexp>
- **IBM Software Business Solutions Catalog**
<https://greenhouse.lotus.com/catalog/>



Abstract

IBM's Digital Experience is a powerful integration platform, which can consolidate an inhomegeous IT landscape to an appealing and seamless web user interface. Integrating a vast amount of different kinds of APIs and systems can be challenging. This session will outline the basic integration patterns and show how easily the job can be solved. We will describe helpful techniques, such as the Web Application Bridge, Web Experience Factory, Script Portlet, Cast Iron, Digital and Data Connector. We will explain, which of these techniques is used best for which use case and for which level of skill. We will show how your legacy systems can be turned into contextual and versatile building bricks of a powerful web site. Last but not least, we will also go into detail, how common tasks, such as the integration of IBM Connections, SAP, Sharepoint, and Business Process Server have been solved. (Level: Intermediate)

