Integration

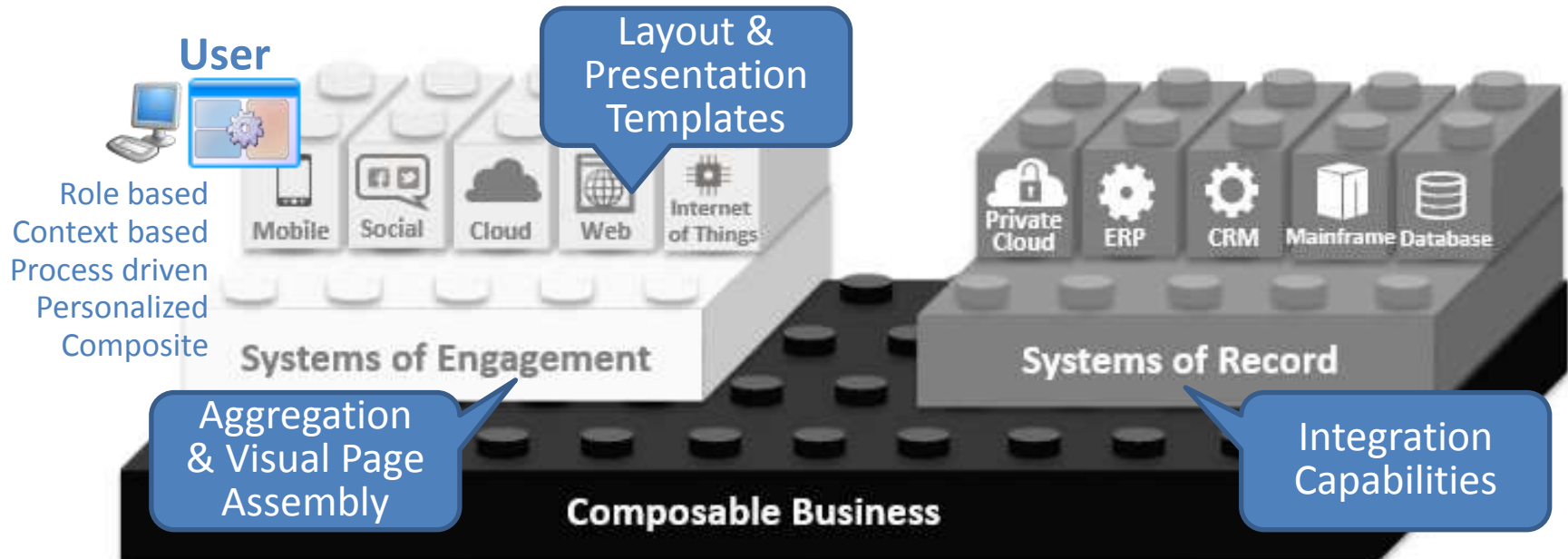Thomas Stober | STSM, Lead Architect DX Foundation

Please Note

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion

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.
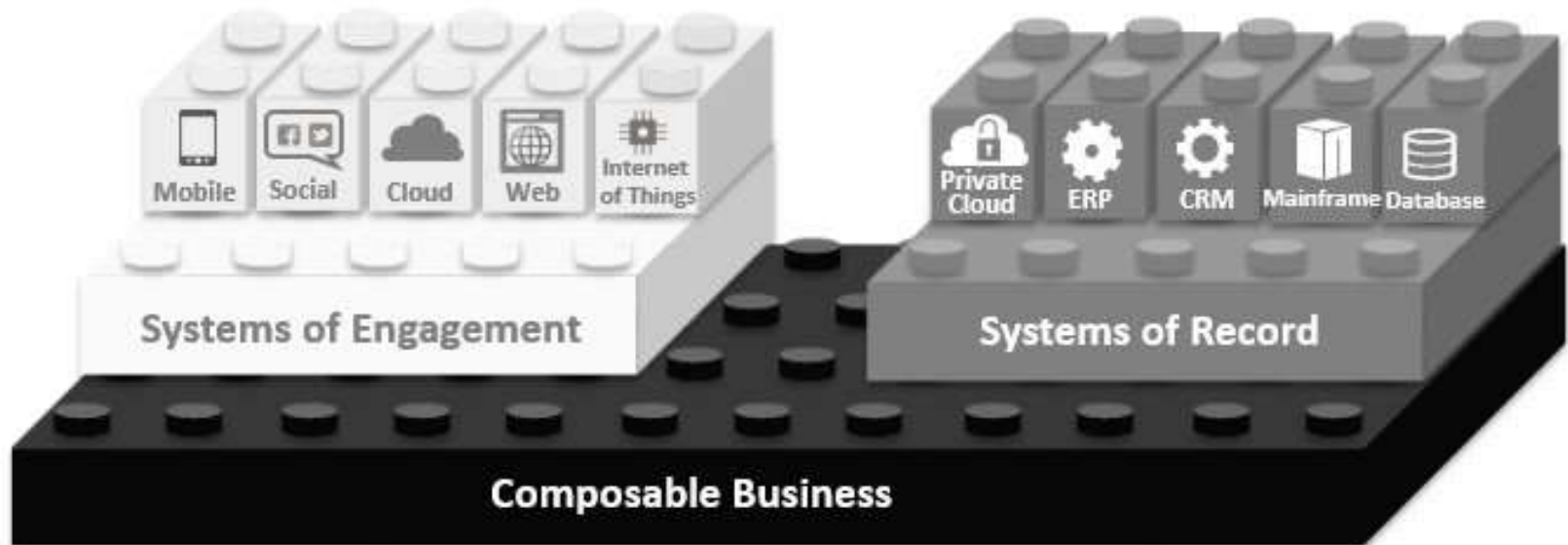
The traditional Portal Paradigma - Reloaded

User

Role based
Context based
Process driven
Personalized
Composite

Layout & Presentation Templates

Aggregation & Visual Page Assembly

Integration Capabilities

Systems of Engagement

Systems of Record

Composable Business

- 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

Systems of Engagement
- Mobile
- Social
- Cloud
- Web
- Internet of Things

Systems of Record
- Private Cloud
- ERP
- CRM
- Mainframe
- Database

Composable Business

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
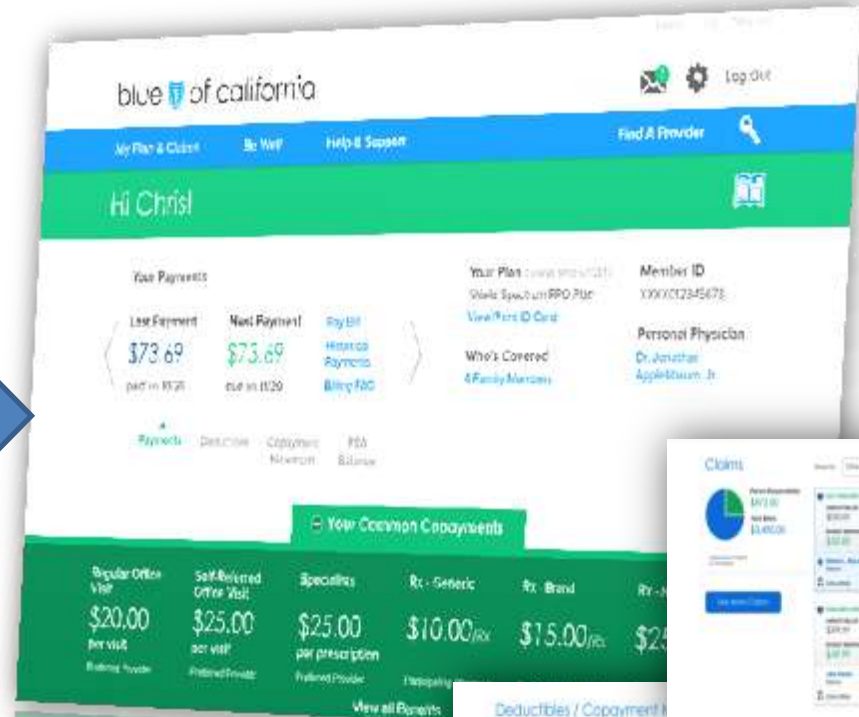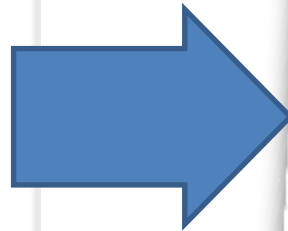
IBM PureApp

1,200 business rules in WODM

Member Center Re-Design

But their Systems of Engagement weren't delivering the users
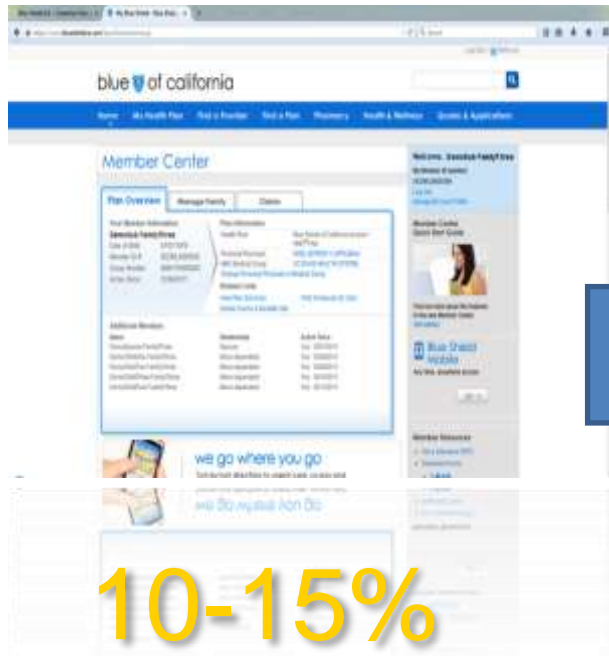
10-15% adoption

50% adoption

Agenda

- IT Driven Integration

- „Business" User Driven Integration

- Federation

- Security Considerations

- Examples
  - IBM Connections
  - WebSphere Commerce
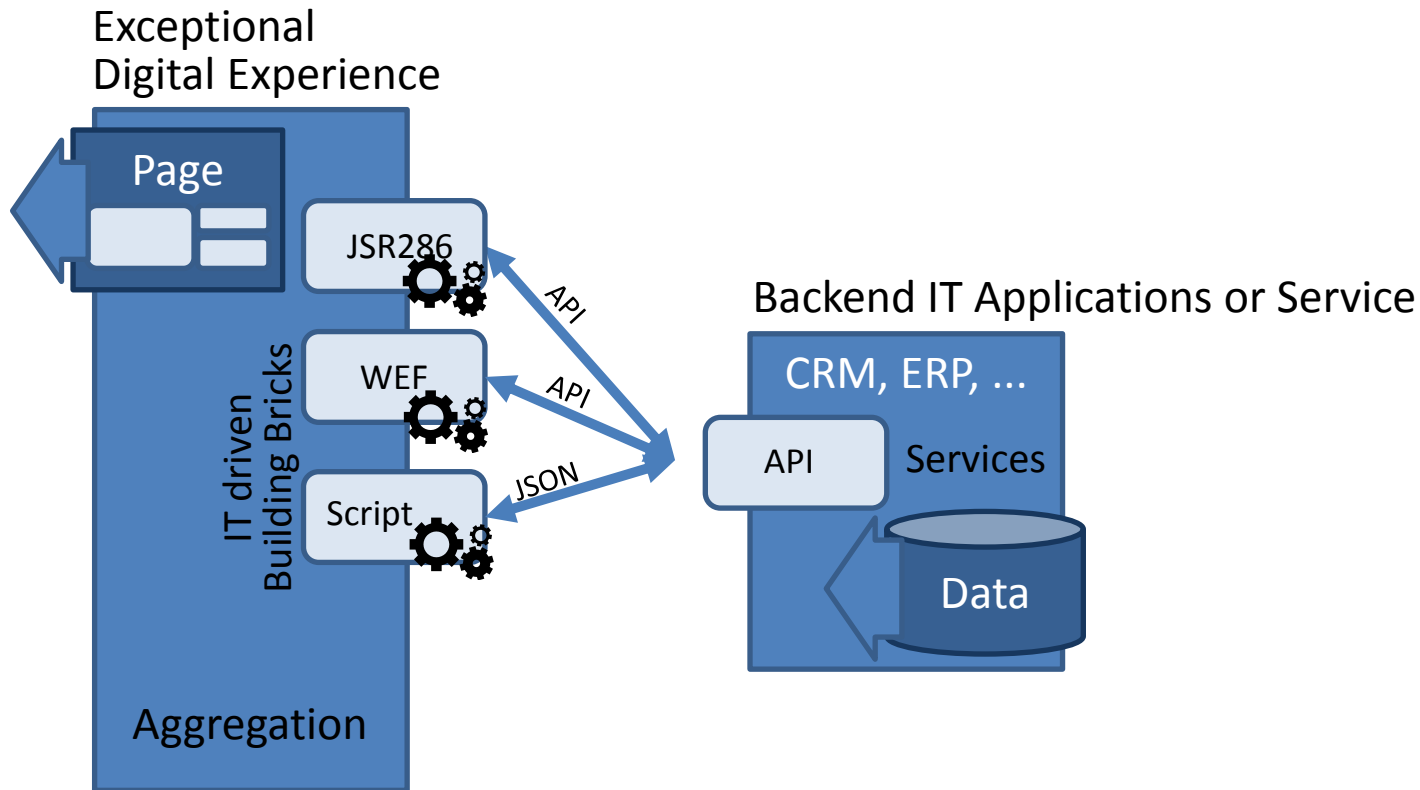 - Business Process Manager
  - Bluemix
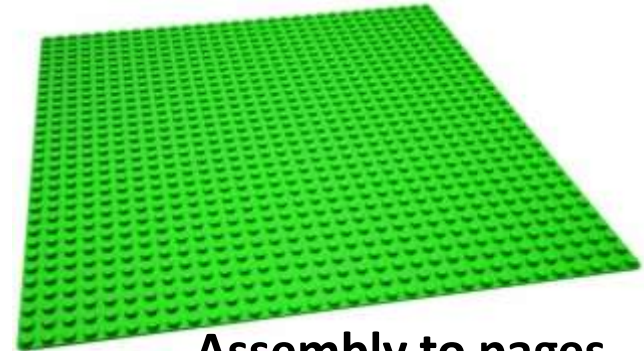
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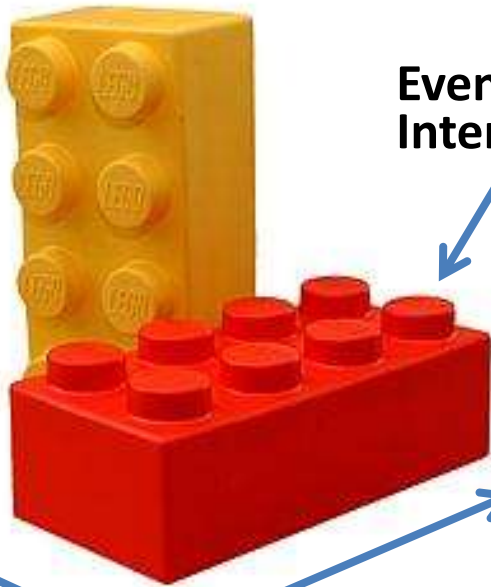 - Business Process Manager
  - Bluemix

Part 1: IT driven Integration

Exceptional
Digital Experience

Page

JSR286

WEF

Script

IT driven
Building Bricks

Aggregation

API

API

JSON

Backend IT Applications or Service

CRM, ERP, ...

API   Services

Data

Portlets: JSR 286

**Action &
Render Phase**

**Eventing &
Interaction**

**Packaging
& Deployment**

Lifecycle

Assembly to pages

**Configuration
& Preferences**

Pre-built Assets

4-Tier Delivery Architecture

Client Tier   **Delivery Tier**   **Service Tier**   **Back-End Tier**
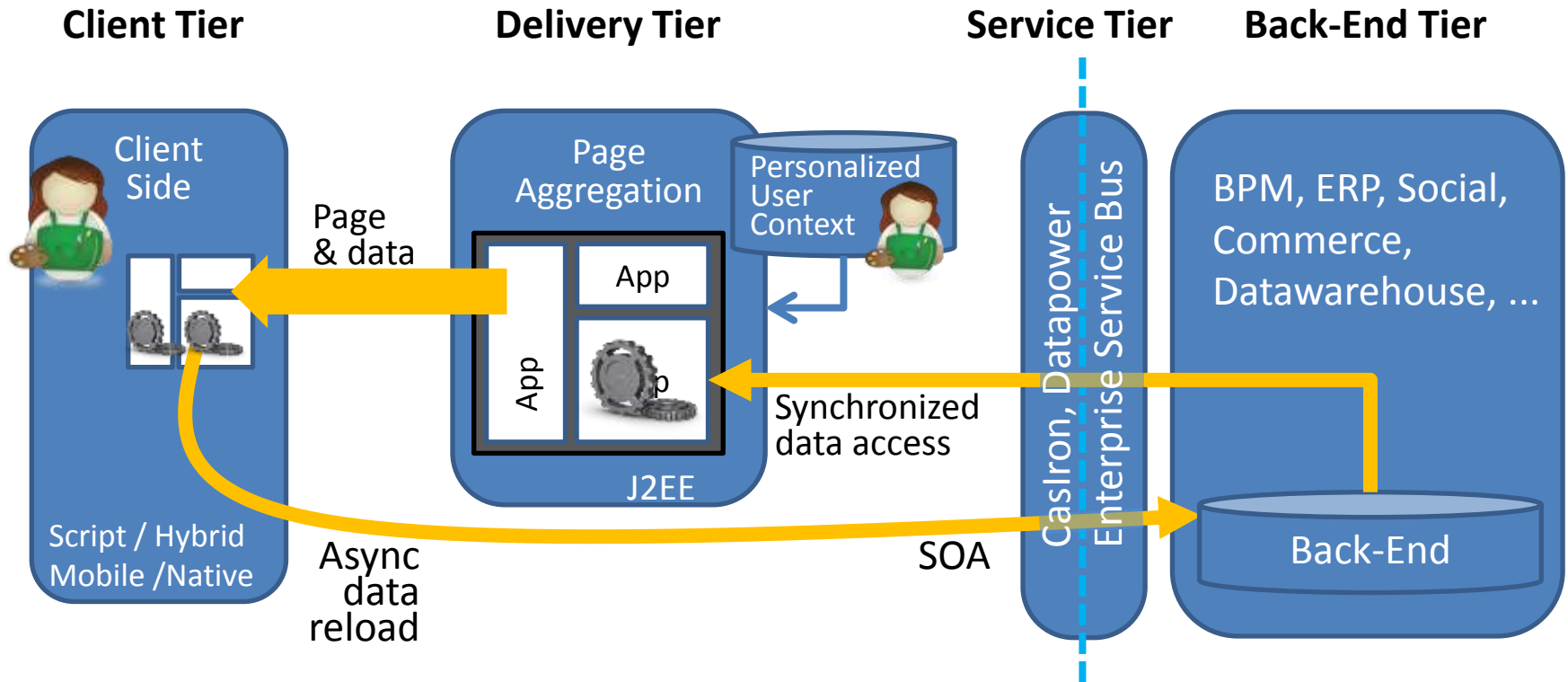
- Execute client-side libraries (AngularJS, Dojo, Jquery) or implement as Native App (iOS/Android)
- AJAX calls / updates without page refresh
- Access backend data / SOA Layer directly via REST

- 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

11

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
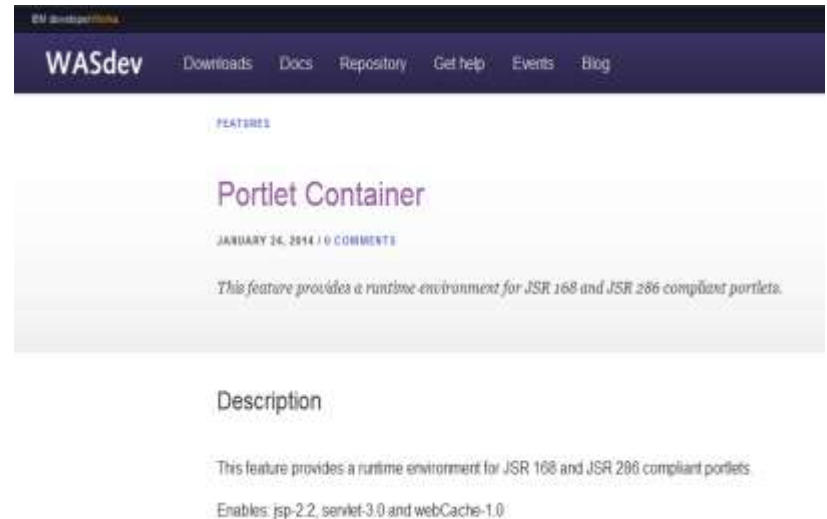
Portlet Container in Liberty

- 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.ibmdw.net/wasdev/repo/portlet-container/

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

WASdev   Downloads   Docs   Repository   Get help   Events   Blog

FEATURES

Portlet Container

JANUARY 24, 2014 / 0 COMMENTS

This feature provides a runtime environment for JSR 168 and JSR 286 compliant portlets.

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

Part 2: „Business" User driven Integration
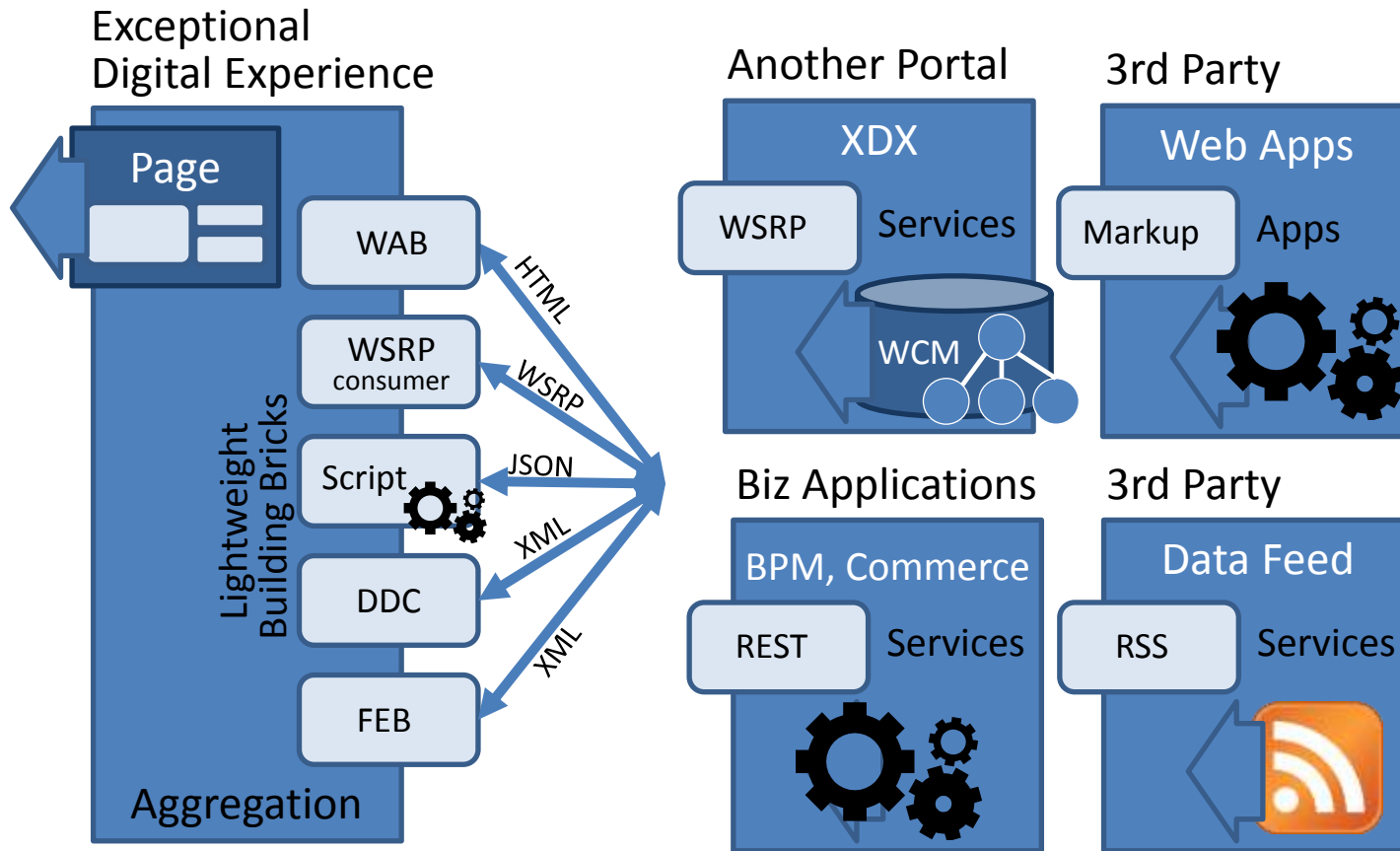
„Business" User driven Integration

- 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

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
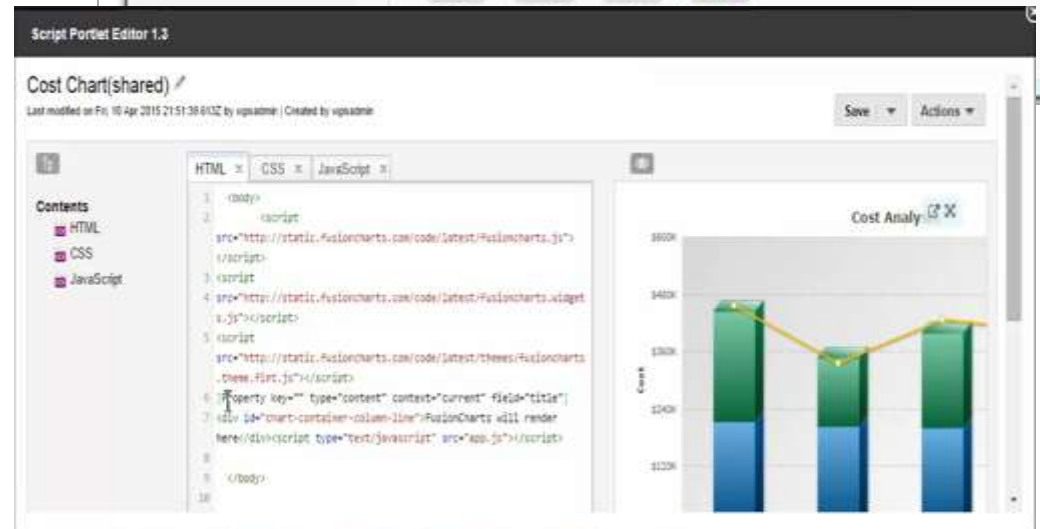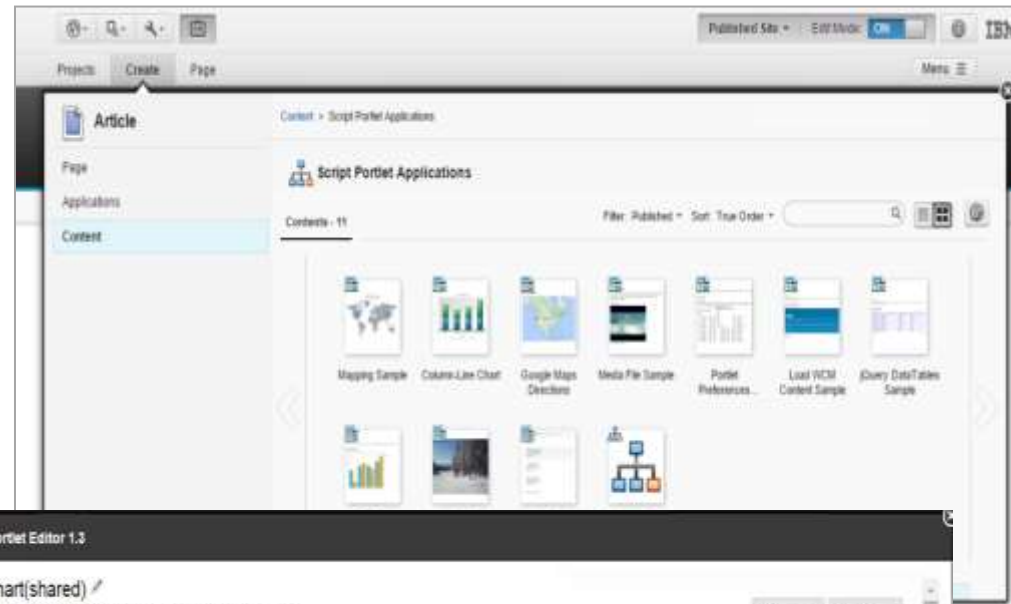
Available on the Catalog Now!
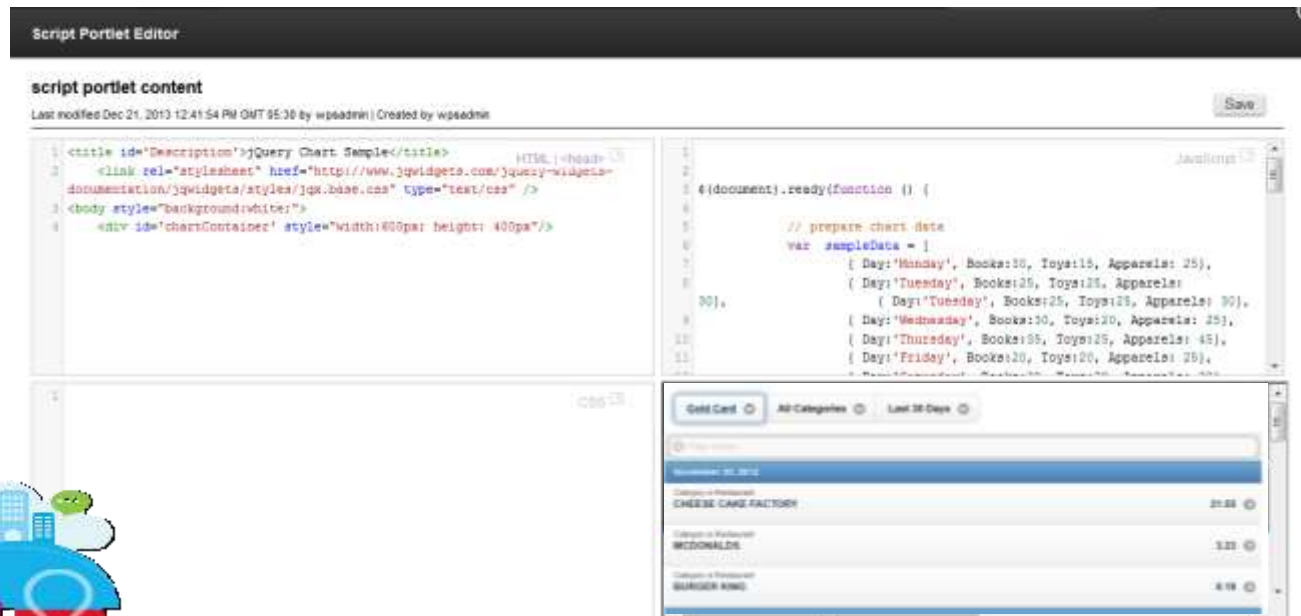
Script Portlet: Goals

- 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

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

Forms Experience Builder

Easy-to-use *web based design tooling* delivers powerful fill and submit experiences.
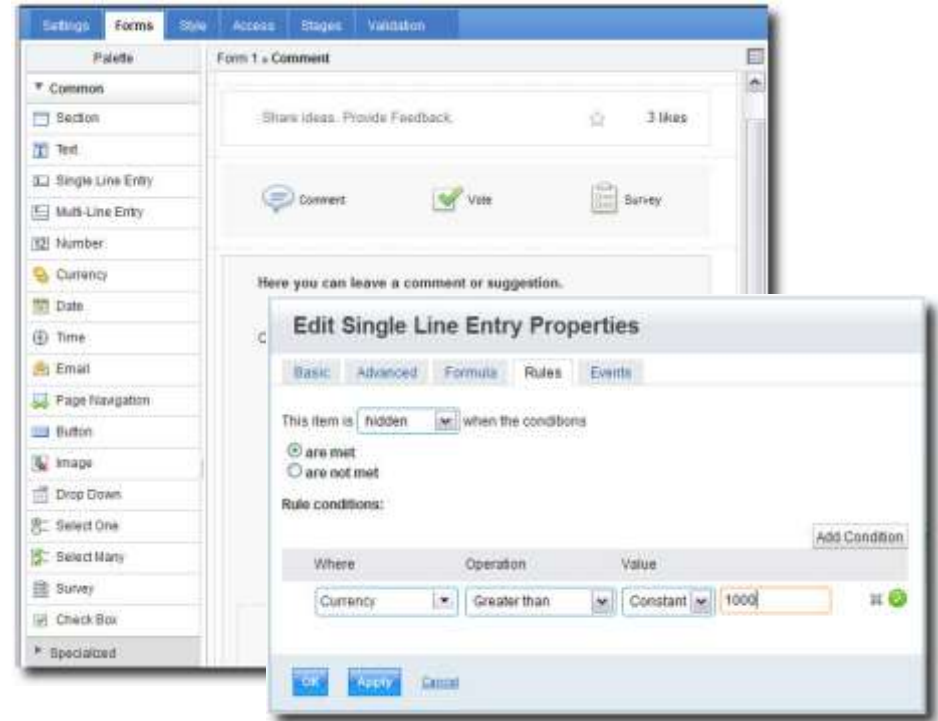
- **Complete tooling**
  - Full set of web data capture items
  - Flexible layout using grids & sections
  - Graphical rules & formula editor
  - Routing editor
- **Rapid development**
  - Preassembled items with default values
  - Automatic binding to data records
  - Apply advance features quickly
- **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.
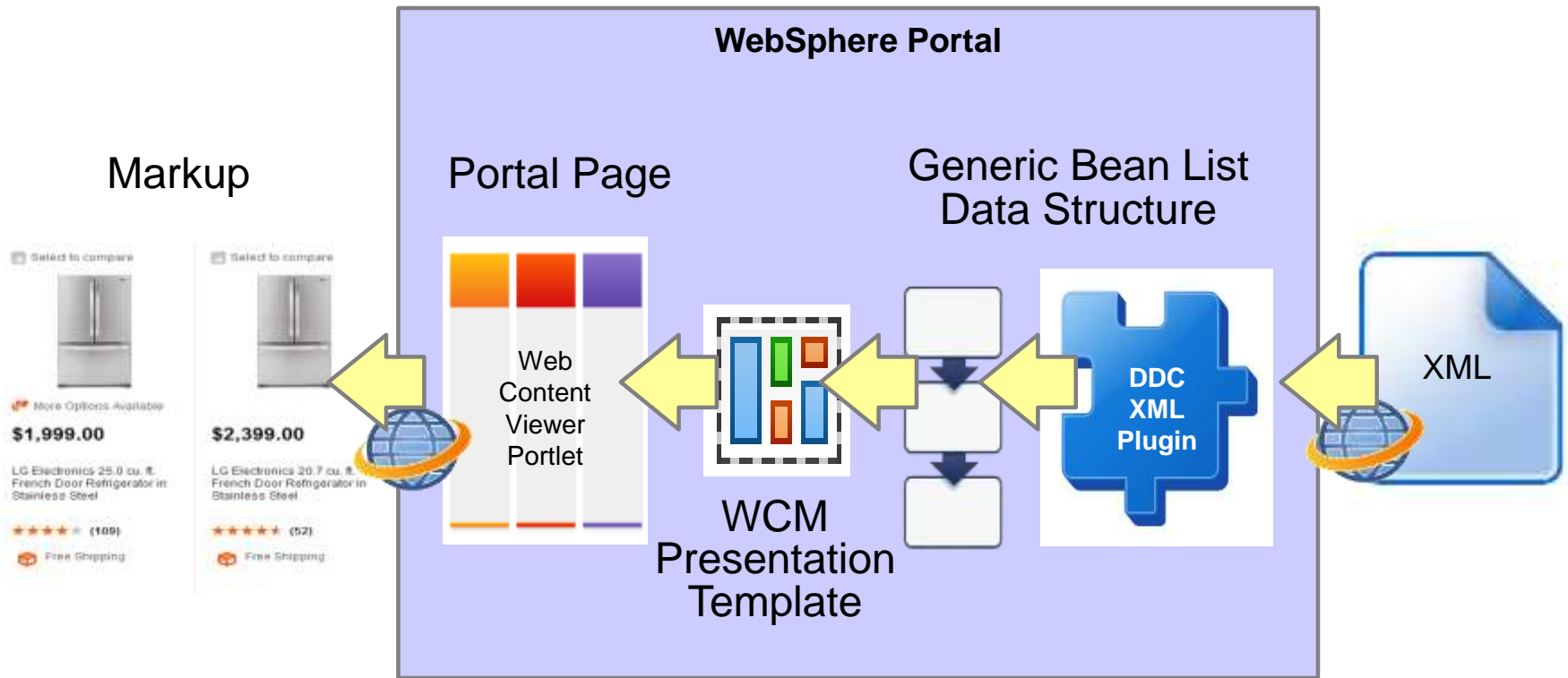
Digital Data Connector

- 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

Markup

Portal Page

Generic Bean List Data Structure

WebSphere Portal

Web Content Viewer Portlet

WCM Presentation Template

DDC XML Plugin

XML

Select to compare

More Options Available

$1,999.00

LG Electronics 25.0 cu. ft. French Door Refrigerator in Stainless Steel

★★★★☆ (109)

Free Shipping

Select to compare

$2,399.00

LG Electronics 20.7 cu. ft. French Door Refrigerator in Stainless Steel

★★★★★ (52)

Free Shipping

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

Web Application Bridge

Web Application Bridge (WAB) is 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 to large
  - Redundant or unwanted navigation, header, footer, sidebars, etc.
  - Conflicting styles
- Consider delivering static content (CSS, Javascript and Images) via HTTP server
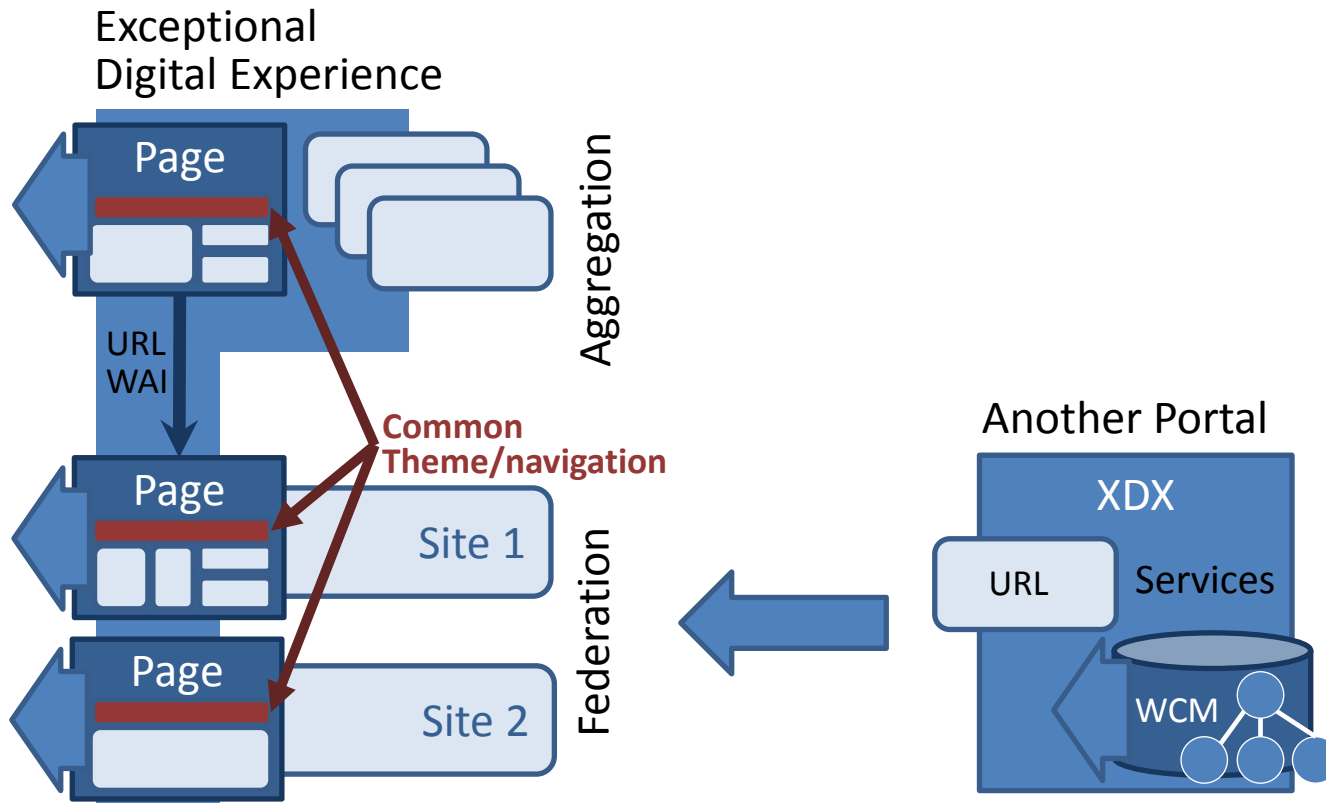- Apply Filters when needed

Agenda

- IT Driven Integration
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- Federation
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- Examples
  – IBM Connections
  – WebSphere Commerce
  – Business Process Manager
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Part 3: Federation

Exceptional Digital Experience

Page

Aggregation

URL WAI

Common Theme/navigation

Page

Site 1

Federation

Page

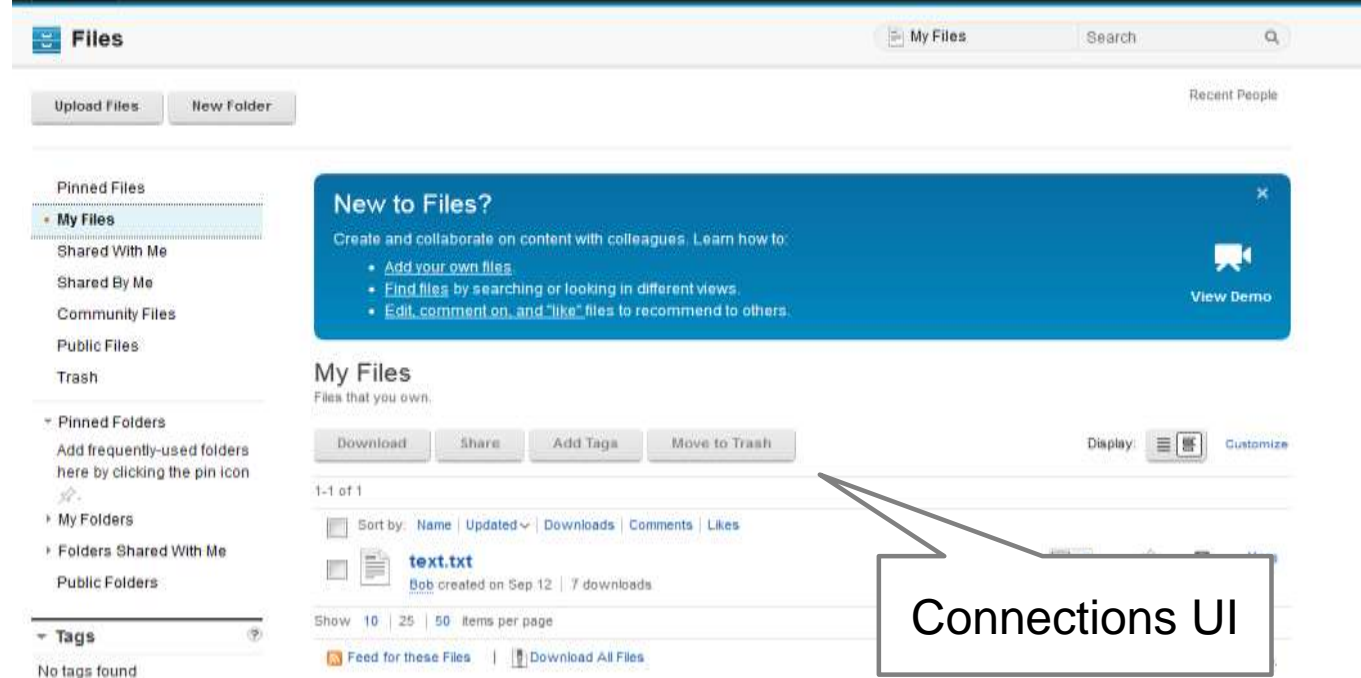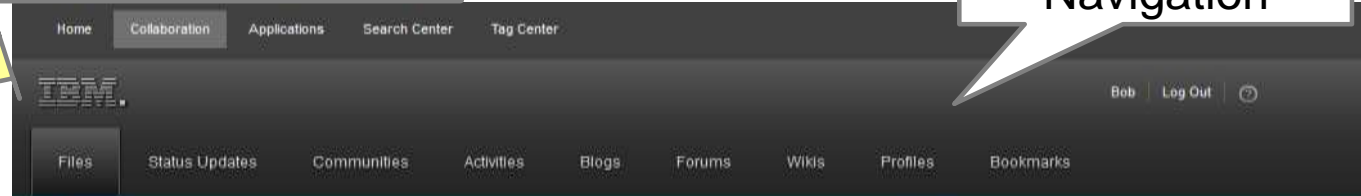Site 2

Another Portal

XDX

URL   Services

WCM

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/futb
/a1/XYyxDolwFEW_hYGVVyka1/Ym2EEGE6N2tU94wRrTNvVZ9O-Fut-nee-4BA2cwOpMdicra13-
B2nqsKQTumMSL7mlf_sndMppNK60bWpa7sSgl92O6qdXloUb...YTN4OXaTBRuoZLhxffPAJbfI4sow1c9H6OOI74E2gW6M25uGPC3wzhFUeZd
/XRLFFIQf/></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

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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
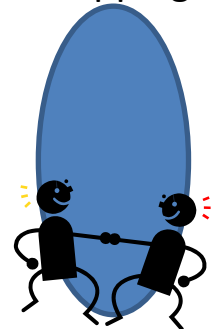
HTTP Outbound

- 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

IdP Initiated SAML

- WAB authenticates to the IdP on behalf of the user
- Uses Web SSO Profile for message exchange sequence
- Requires both IdP and SP to use HTTP POST bindings
- Isolation between portal's and back end server's authentication & session
- Tested against TFIM & ADFS as IdP
- 1-4 flow not required when portal itself does not require SAML authentication
- Requires cookie based trusted user identity
- SSO configured by providing settings for SAML Authentication in VWA Manager

Kerberos Delegation

- User, Portal & Back-end server on the same Active Directory domain
- Portal configured for authentication using SPNEGO with Kerberos
- Portal as SP configured in Active Directory as "trusted for delegation"
- User's browser performs SPNEGO authentication
- WAB extracts user's Kerberos token and authenticates to the back-end server on user's behalf
- SSO configured by providing settings for SPNEGO Authentication in VWA Manager

Client-side Cookie Authentication

- back-end server in the same domain as portal's
- back-end server configured against the same federated identity provider as portal's e.g. TFIM
- user identity already established after authentication
- user identity available in a cookie e.g. LtpaToken
- 1-4 flow not required when portal itself does not require SAML authentication
- SSO configured by allowing identity cookie to pass through from request in VWA Manager

Form Based Authentication

- Pre-emptive authentication
- WAB authenticates on behalf of user
- Credentials provided using the credential slot mechanism
- WAB maintains user session with the back-end server while the user maintains only one session with the portal
- WAB synchronizes portal and back-end sessions – user logs out of back-end server when portal session ends
- SSO configured by providing settings for Form Based Authentication in VWA Manager

Basic Authentication

- Pre-emptive authentication
- WAB authenticates on behalf of user
- Credentials provided using the credential slot mechanism
- WAB maintains user session with the back-end server while the user maintains only one session with the portal
- WAB synchronizes portal and back-end sessions – user logs out of back-end server when portal session ends
- SSO configured by providing settings for Basic Authentication in VWA Manager

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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 embeded 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, embedd 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!
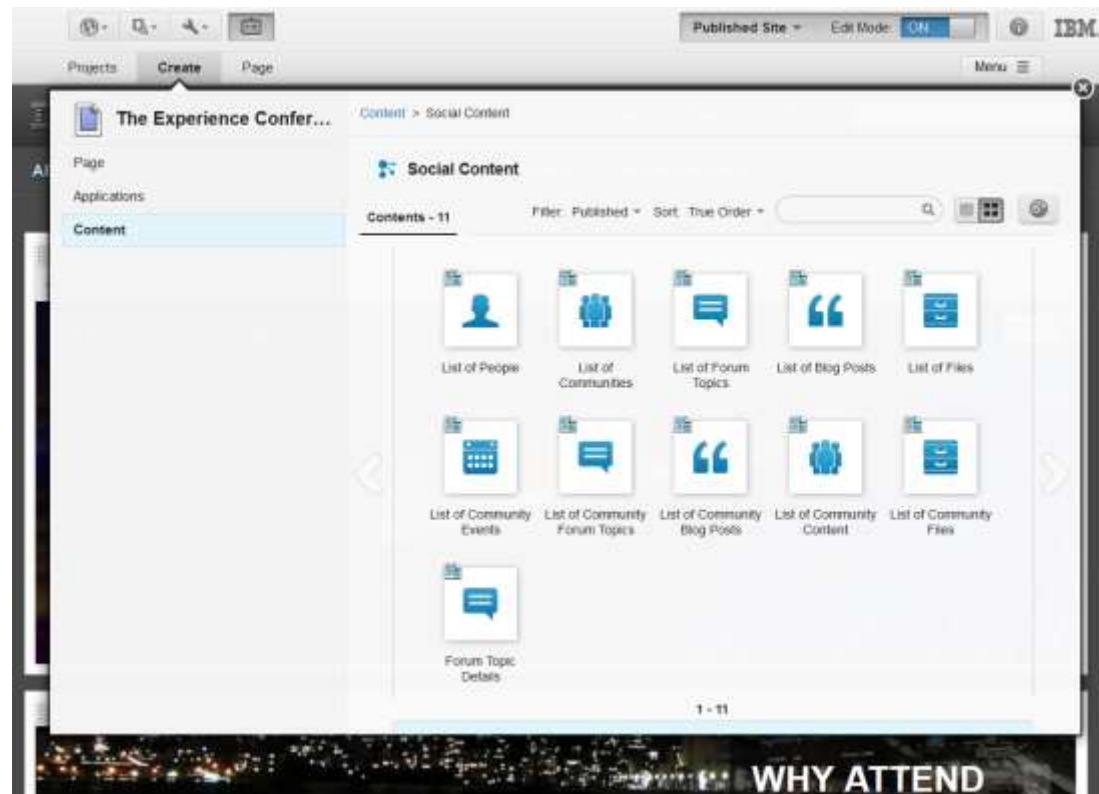
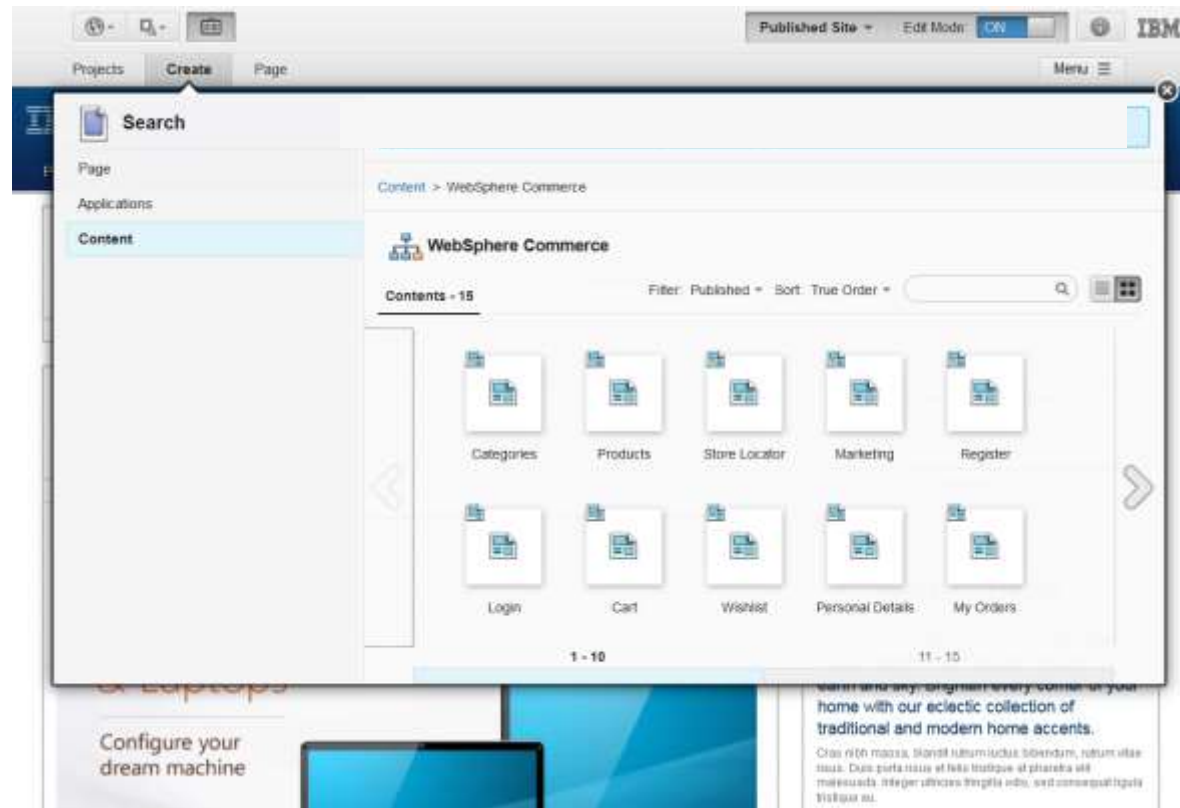Infuse **social information** into web sites and mix it with any other web content

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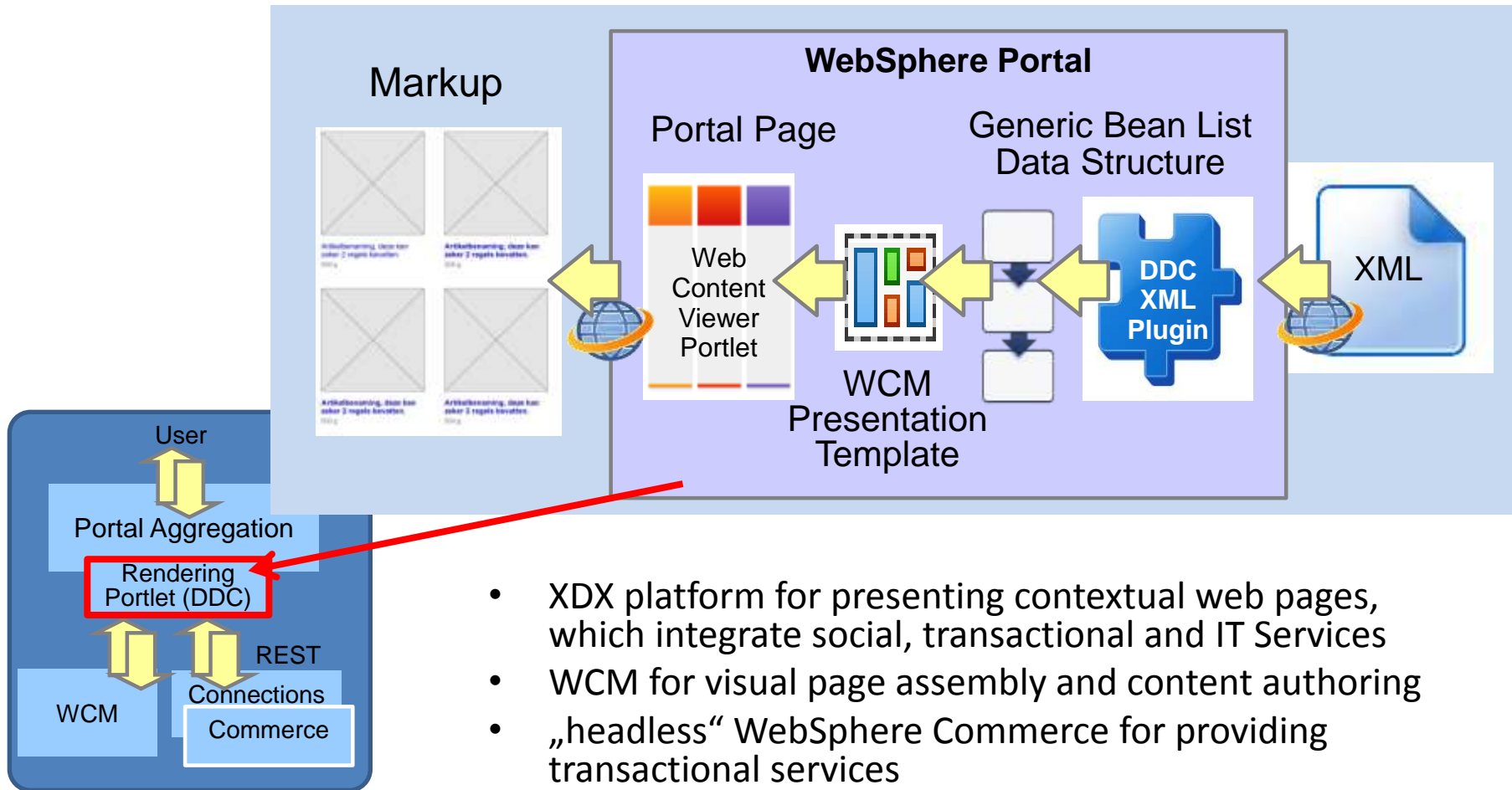
- XDX platform for presenting contextual web pages, which integrate social, transactional and IT Services
- WCM for visual page assembly and content authoring
- „headless" WebSphere Commerce for providing transactional services

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

Select source from a predefined list

Filter by a specific Category Path

Filter further by Brand

Select how the list is shown

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

- Categories
- Filters
- Product Details

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

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

- Shopping Cart
- My orders

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

Example: Consumer Engagement at illy
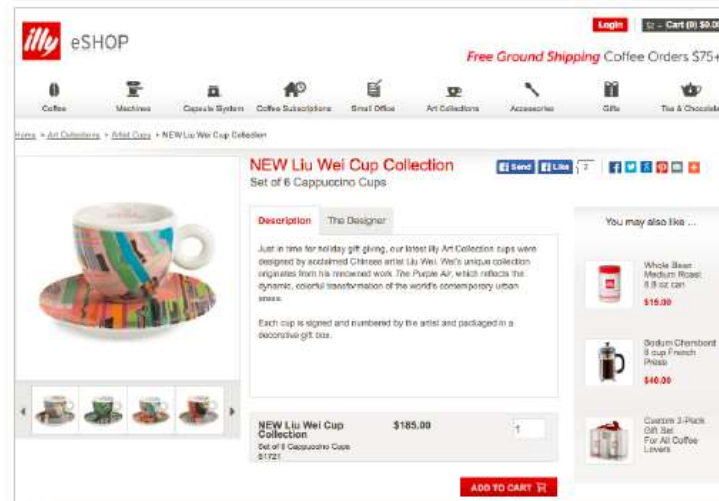
Consumer Engagement at illy

illy Digital footprint-Platforms

EXPERIENCE ESPRESSO MADE SIMPLE

THE PINNACLE OF WHAT COFFEE CAN BE

A TASTE OF THE EXTRAORDINARY

LOGIN O REGISTRATI CON
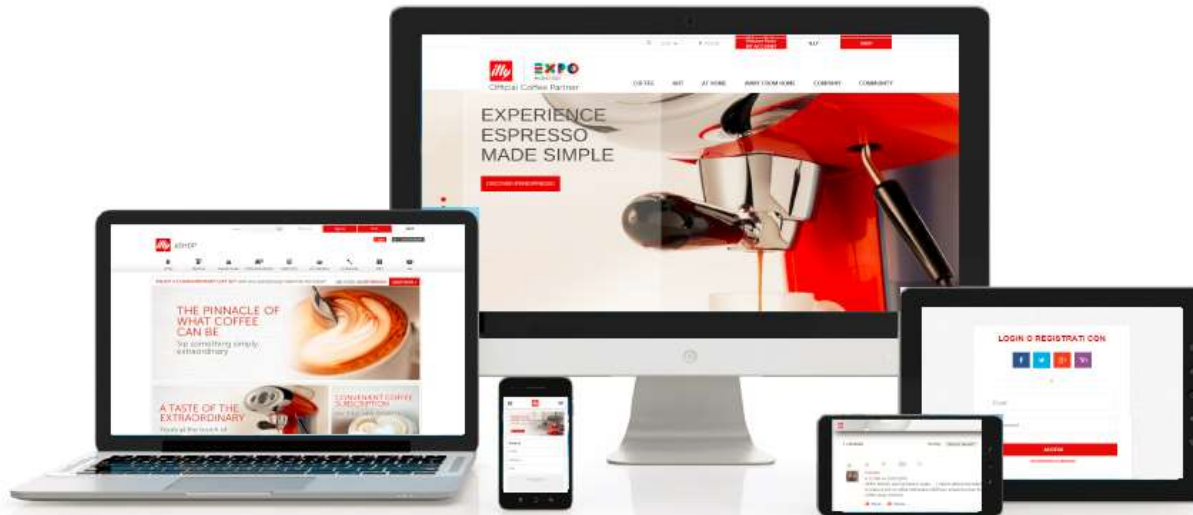
- Websphere CMS
- Websphere Commerce
- SSO

- 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

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=22iIecyFGOY

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Smarter Process is…

IBM's solution for reinventing business operations to deliver greater customer-centricity.
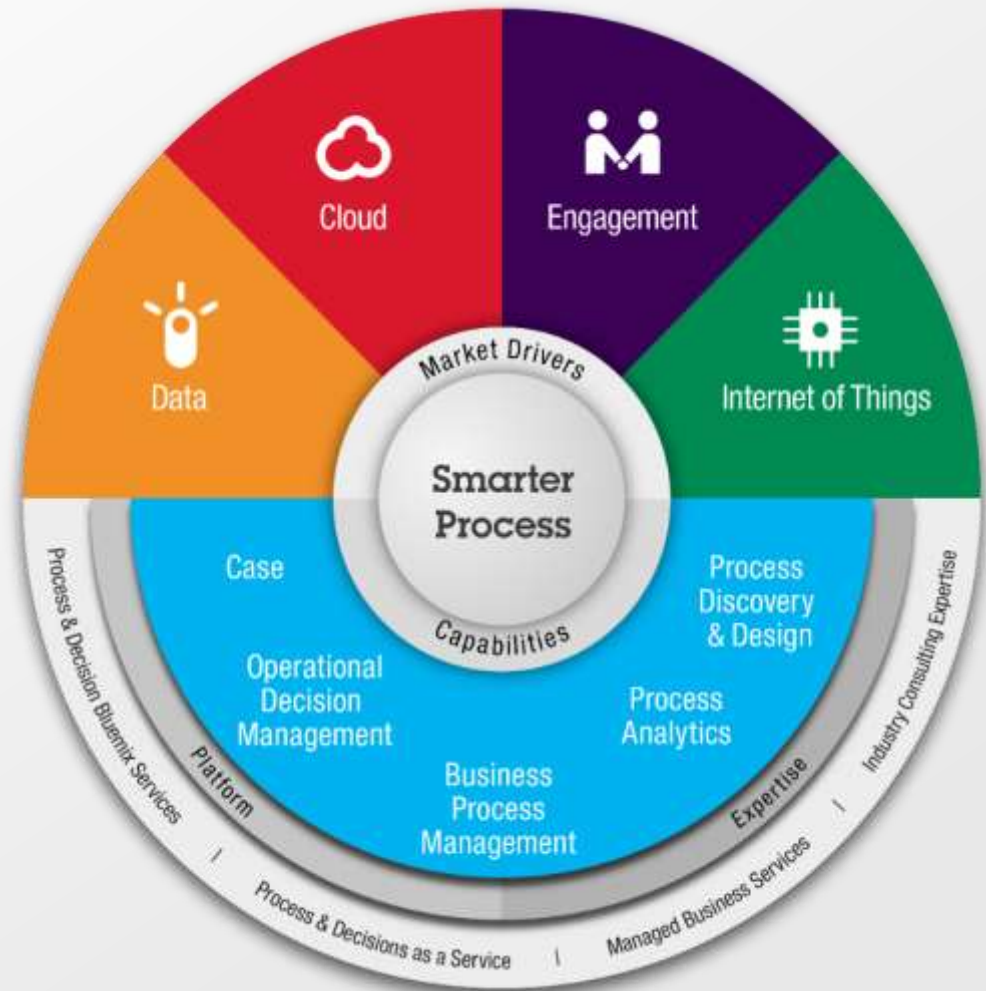
BPM brings order to the chaos
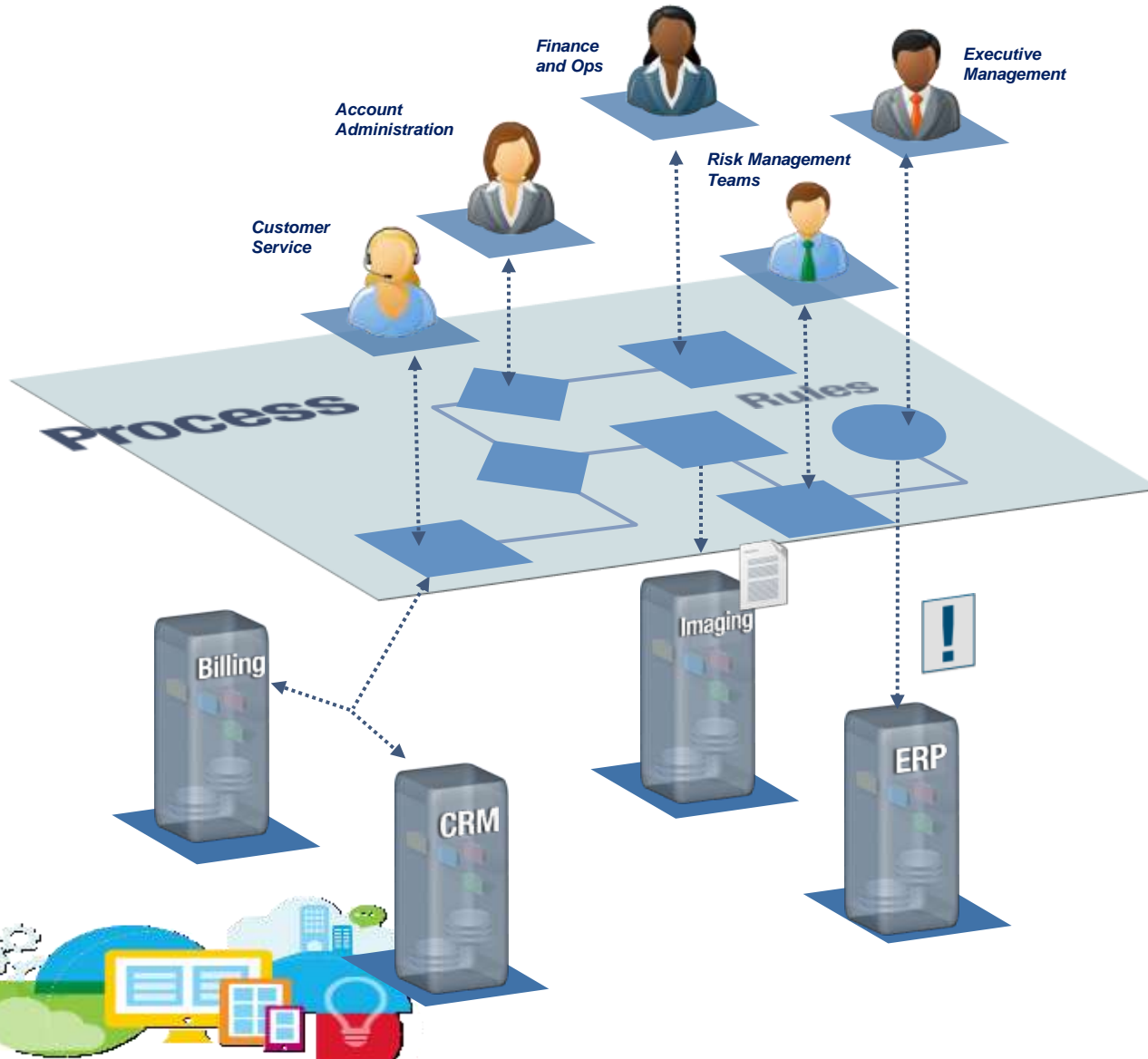
1. Automate workflow & decision making
2. Reduce errors and improve consistency
3. Standardize resolution across geographies
4. Leverage existing systems and data
5. Monitor for business events and initiate actions
6. Real-time visibility and process control

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
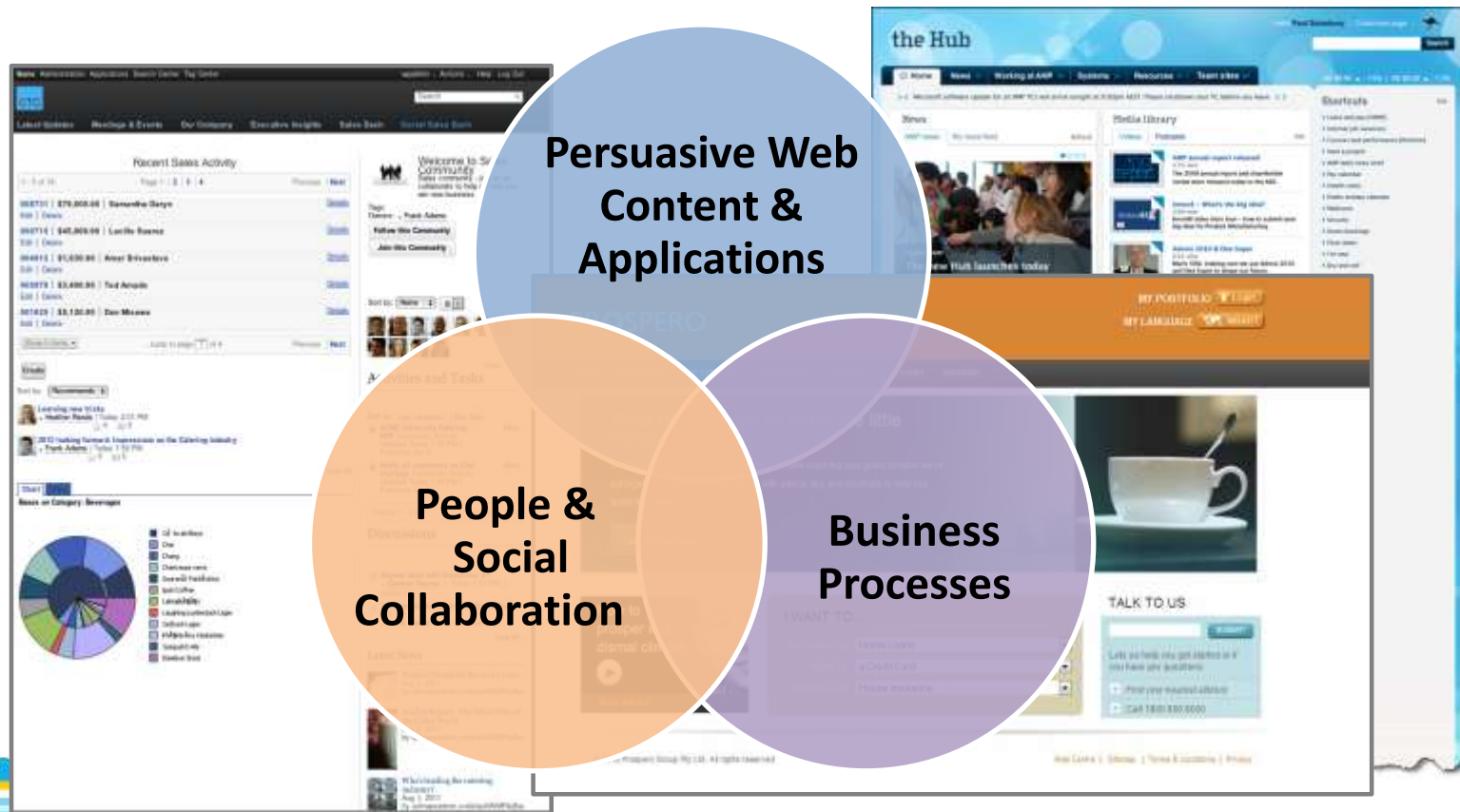
Integration Scenarios

- **B2E**
  - Busines 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

Portal Unified Task List

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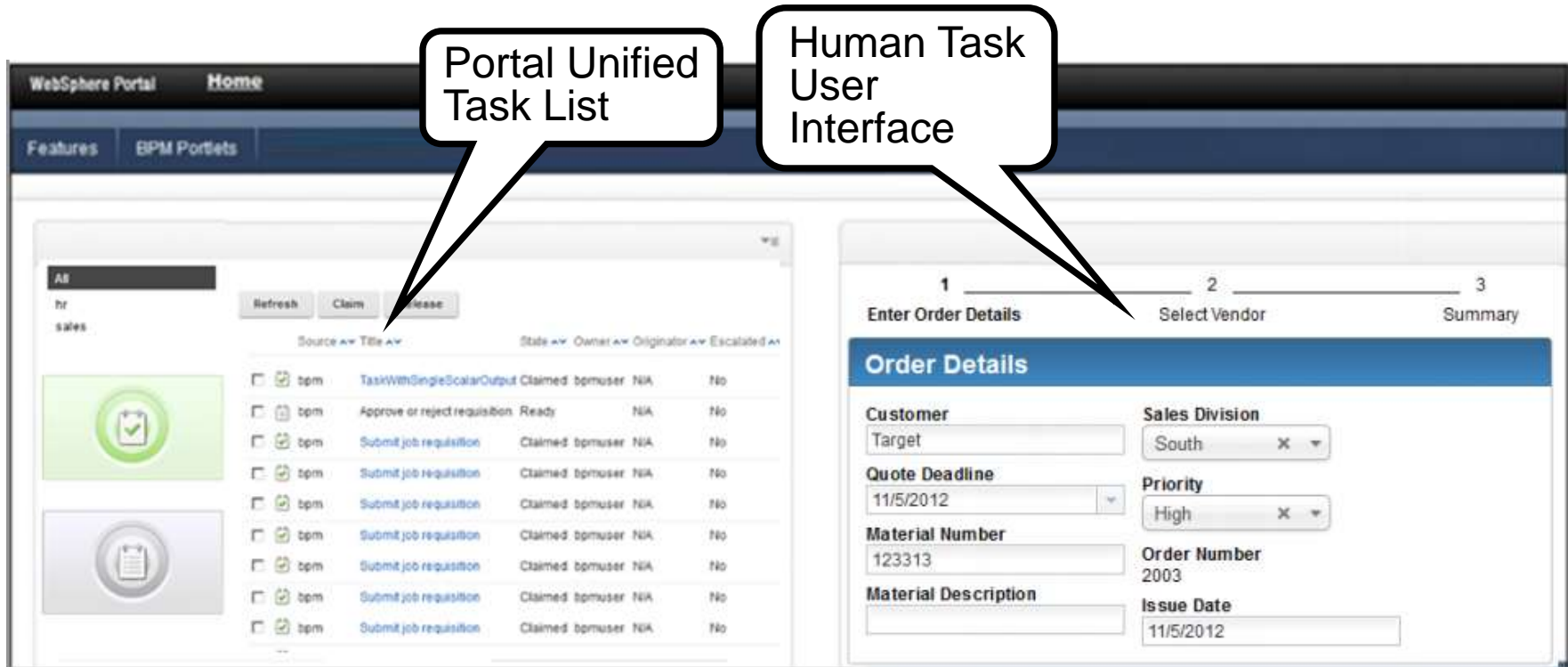
- Unified Task Lists collects human tasks and forms from different task providers or form servers and shows a list of the ones that the Portal user can claim/fill/release.

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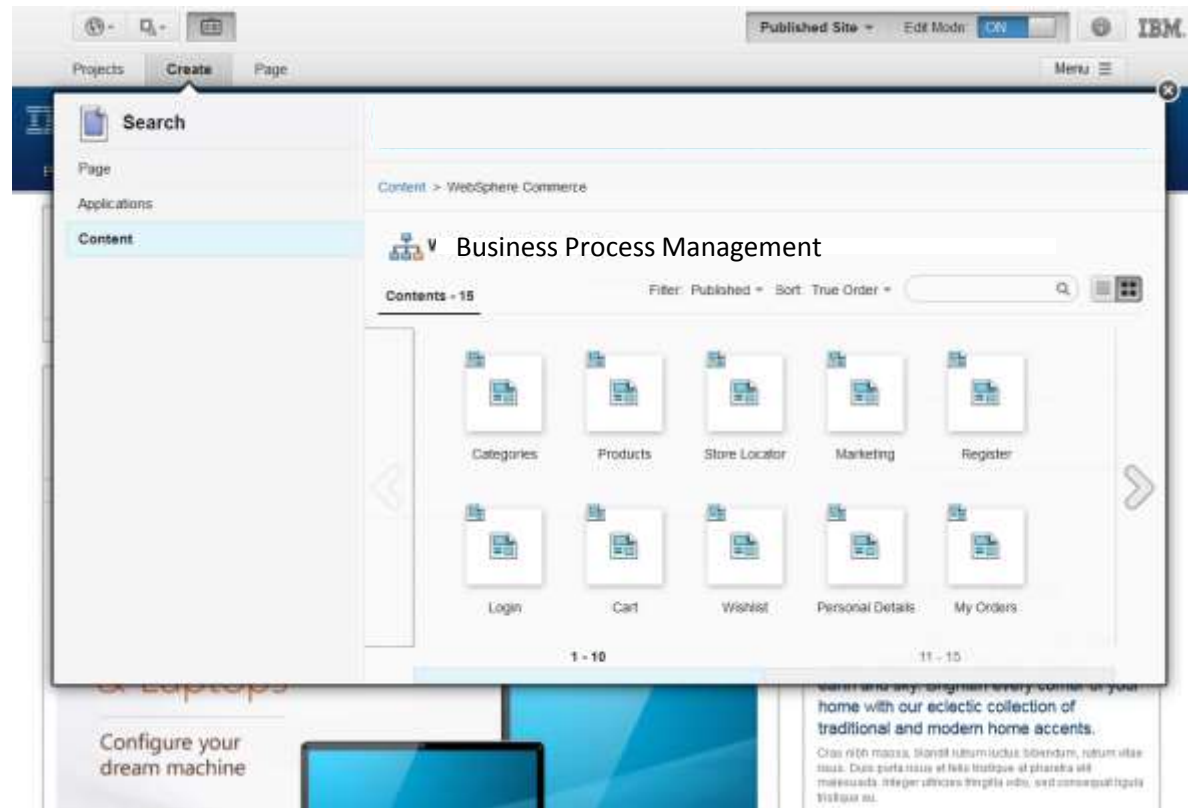
Infuse **Human Tasks** into web sites and mix it with any other web content

DDC (Again)
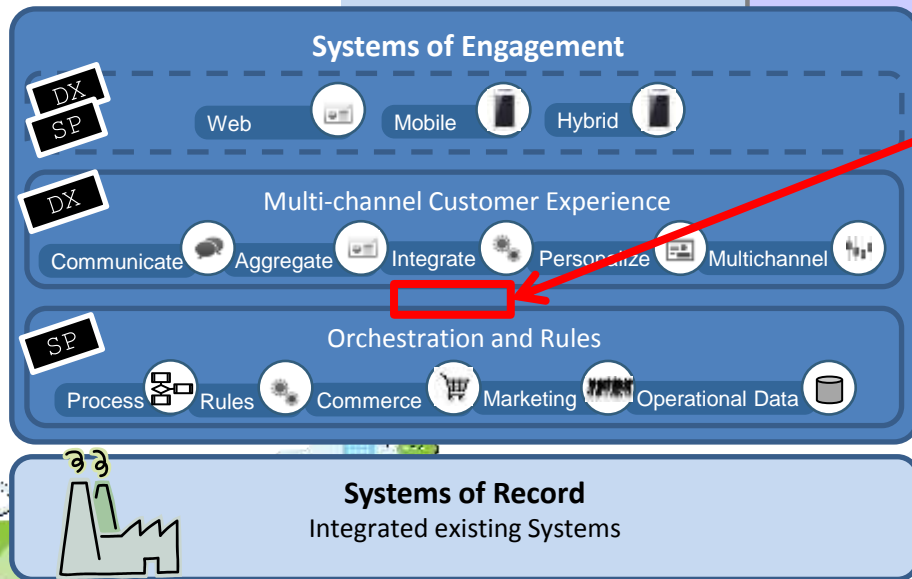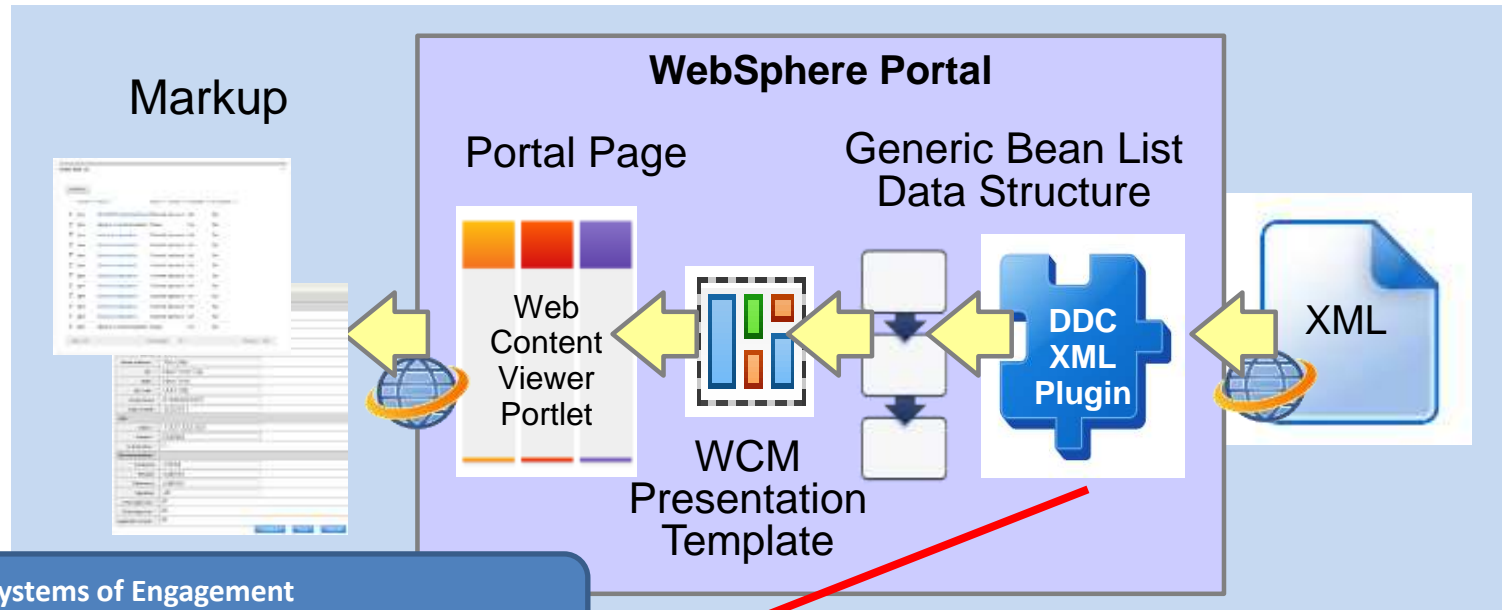
WebSphere Portal

Markup

Portal Page

Generic Bean List Data Structure

Web Content Viewer Portlet

WCM Presentation Template

DDC XML Plugin

XML

Systems of Engagement

DX
SP

Web   Mobile   Hybrid

DX

Multi-channel Customer Experience

Communicate   Aggregate   Integrate   Personalize   Multichannel

SP

Orchestration and Rules

Process   Rules   Commerce   Marketing   Operational Data

Systems of Record
Integrated existing Systems

- 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

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Script Portlet (Yet Again)

- **Use the Script Portlet to implement a Javascript snippet, which fetches <u>data</u> 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
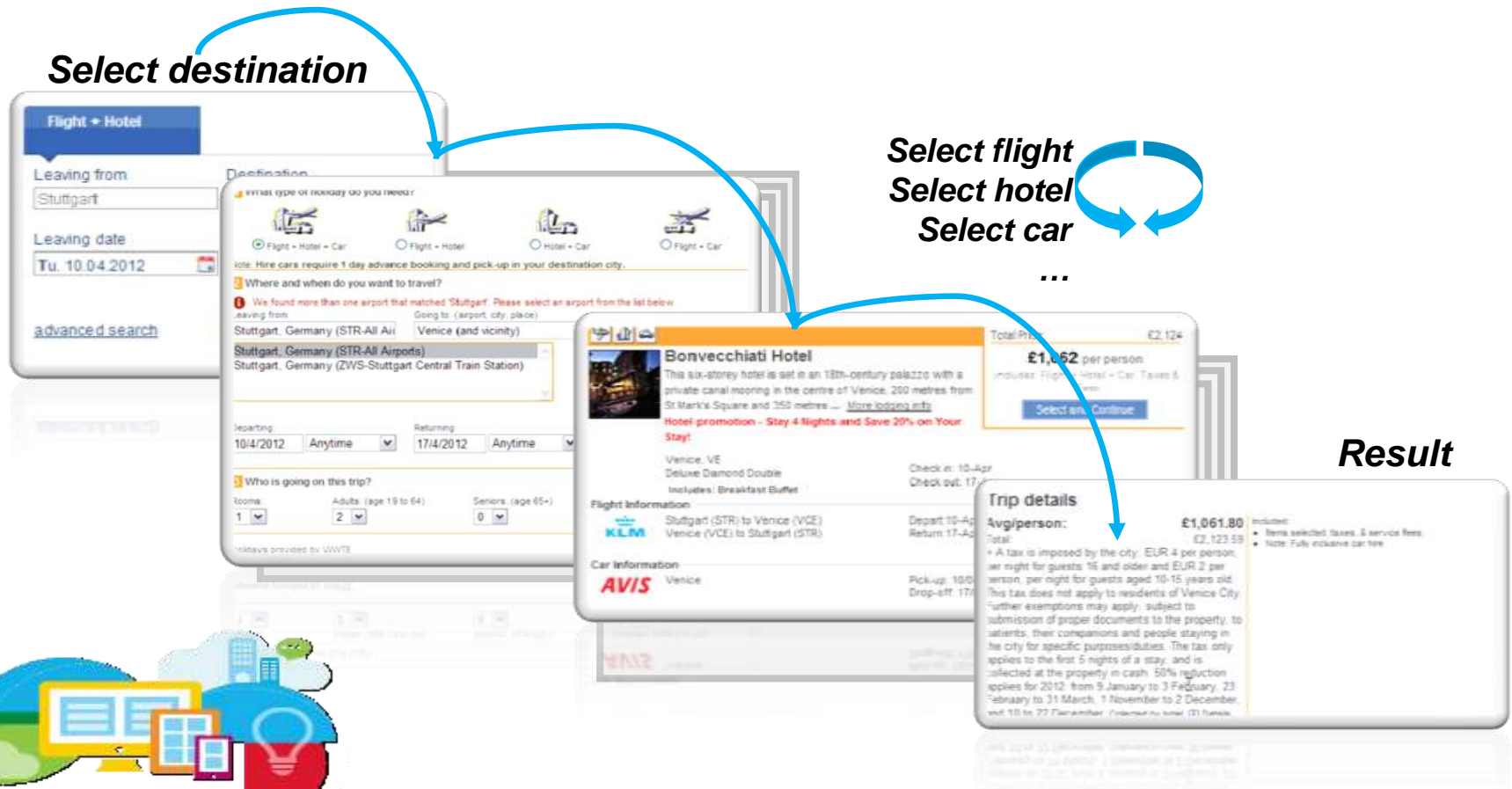
Select destination
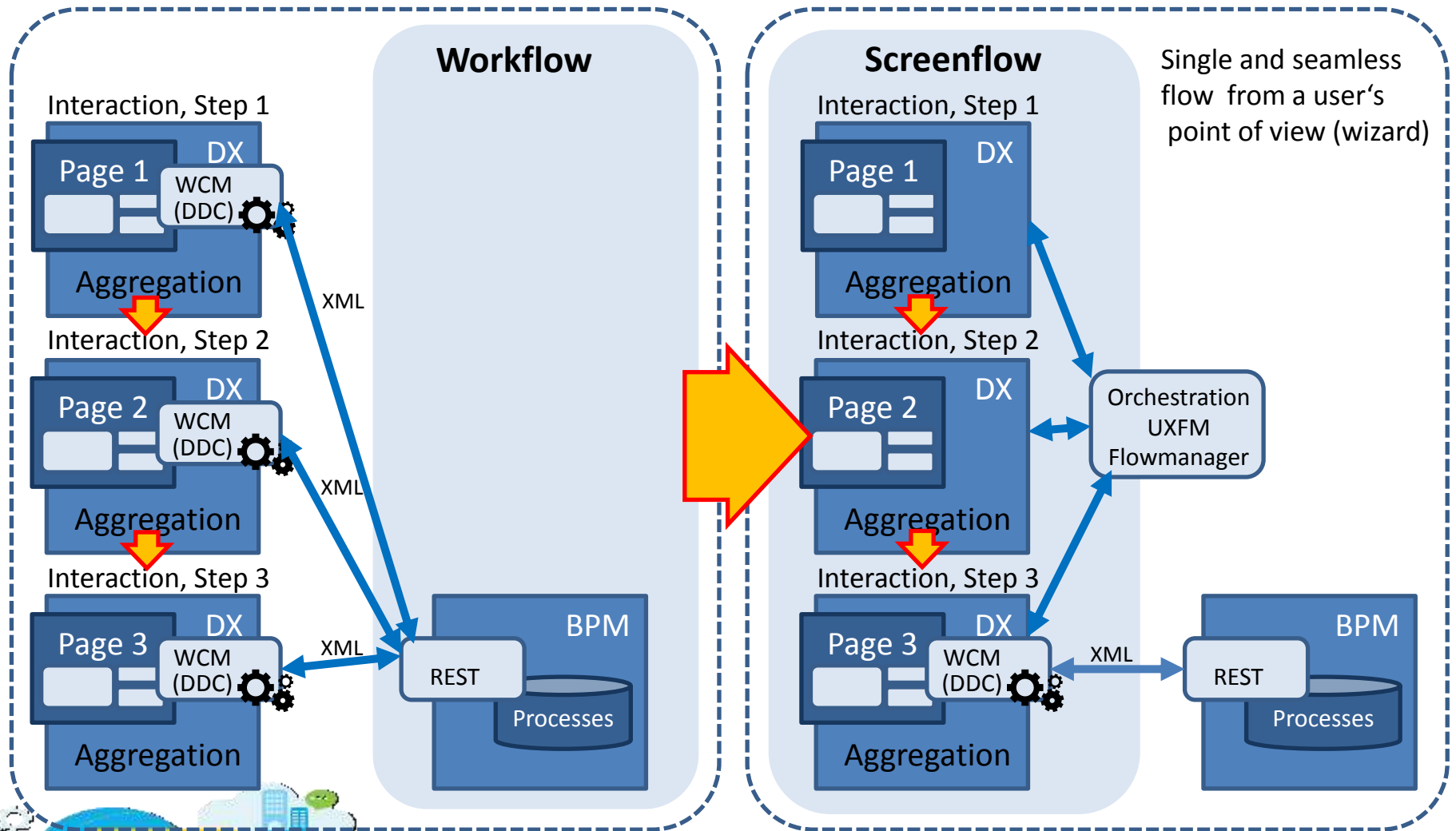
Select flight
Select hotel
Select car

…

Result

Screenflow versus Workflow: UXFM

Workflow

Interaction, Step 1

Page 1 — DX
WCM (DDC)
Aggregation

Interaction, Step 2

Page 2 — DX
WCM (DDC)
Aggregation

Interaction, Step 3

Page 3 — DX
WCM (DDC)
Aggregation

XML

BPM
REST
Processes

Screenflow

Single and seamless flow from a user's point of view (wizard)

Interaction, Step 1

Page 1 — DX
Aggregation

Interaction, Step 2

Page 2 — DX
Aggregation

Interaction, Step 3

Page 3 — DX
WCM (DDC)
Aggregation

Orchestration UXFM Flowmanager

XML

BPM
REST
Processes

Agenda

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

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.

IBM **Bluemix**™

+

Content Mgt
Mobile
Cloud
Portal
Social
IBM Digital Experience
Commerce
Target
Integrate
Market
Analytics
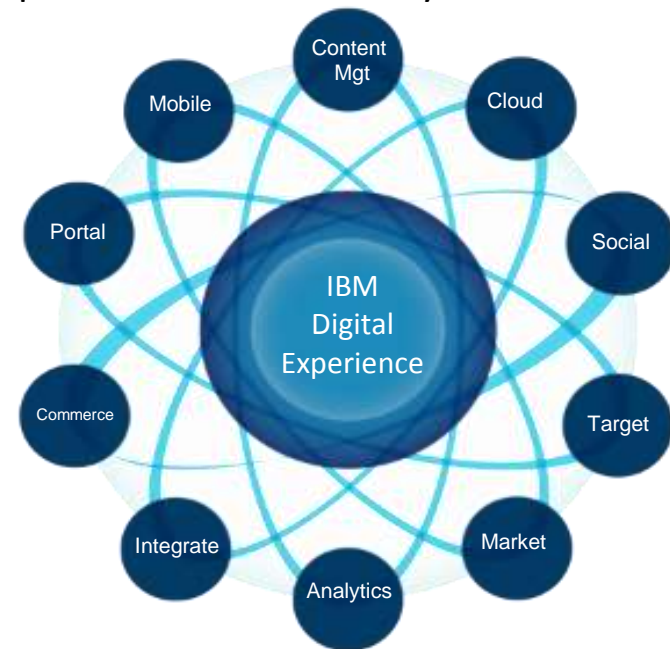
Service Aggregation versus UI Integration

- 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
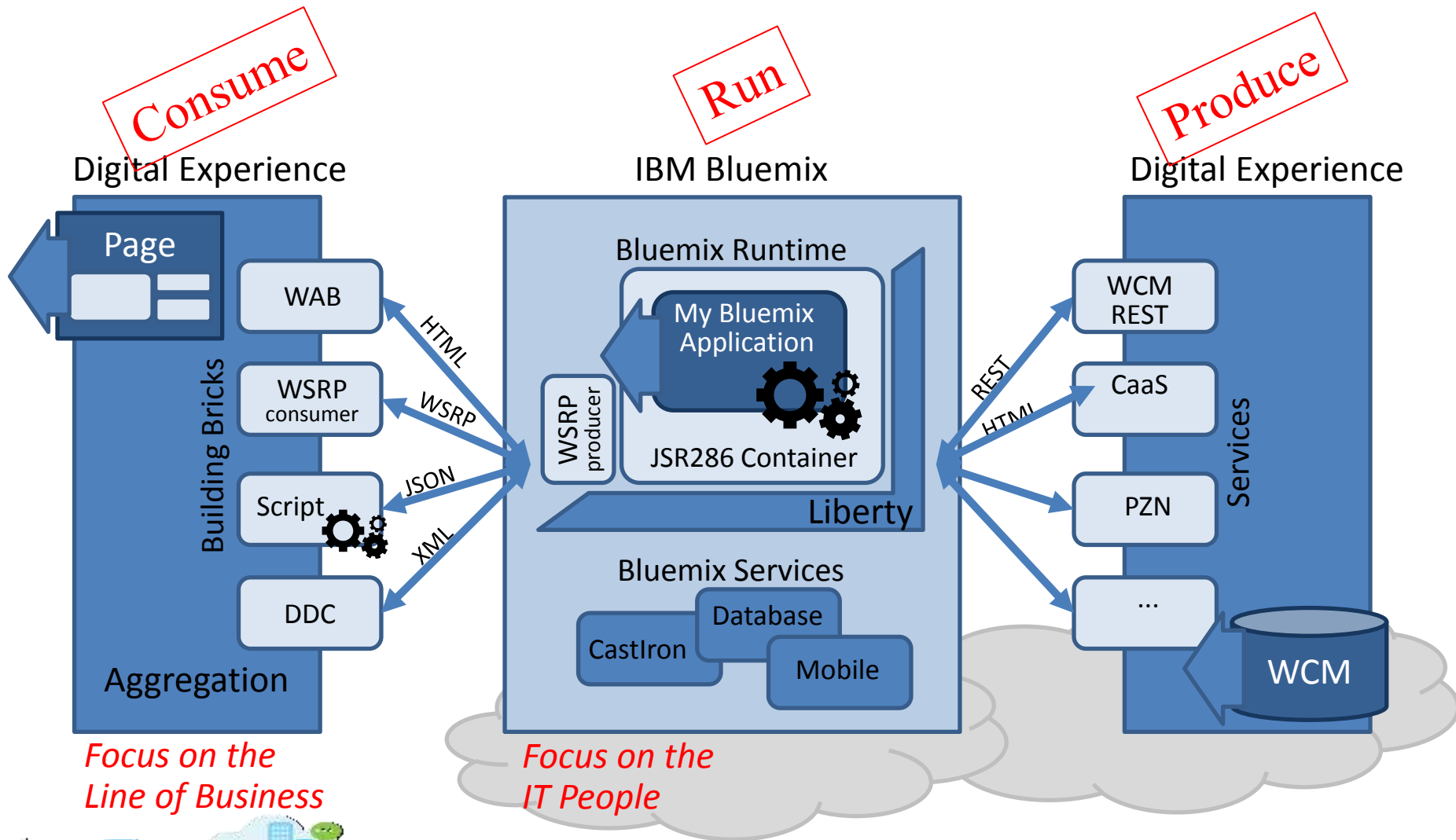
4 patterns for consuming Bluemix services

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

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)

My Portlet Application

JSR286 Container
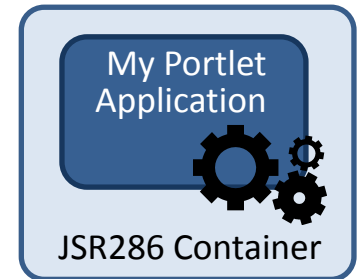
Installing the Portlet Container on Liberty

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
  ```

  `C:\dev\wlp>featureManager install portlet-2.0`

- Create, configure and start a Server
  ```
  server create portal
  update Server.xml
  server start portal
  ```

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

- Deploy (or rather „drop") a Portlet
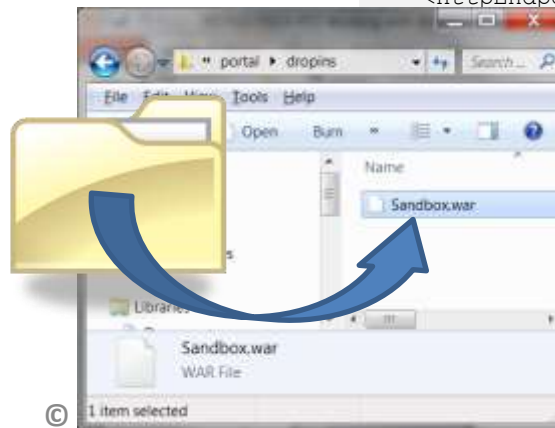
Running Portlets directly in IBM Bluemix

- Create a Liberty server instance
- Deploy your Portets 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/`

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`
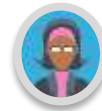
Content as a Service

- Digital Experience provides a content service, including:

  - **line of business, mobile app developer**s 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
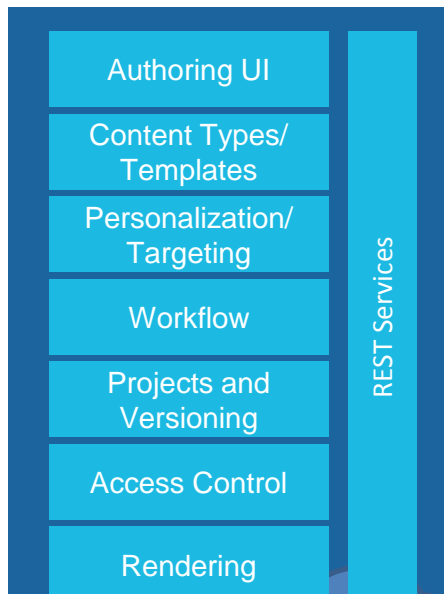
Content as a Service Strategy

Content Manager

Developer

End-User Omni-Channel Experience

Authoring UI

Content Types/ Templates

Personalization/ Targeting

Workflow

Projects and Versioning

Access Control

Rendering

REST Services

Based on DX on Cloud Or on-premises

Java
JavaScript
HTML5
Node.js
iOS
Android
PHP
Python
Ruby
Others…

IBM Bluemix™

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

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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
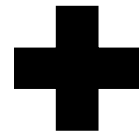
Agenda

- IT Driven Integration

- „Business" User Driven Integration

- Federation

- Security Considerations

- Examples
  - IBM Connections
  - WebSphere Commerce
  - Business Process Manager
  - Bluemix

Summary

Summary: Powerful Tools

J2EE Portlet Development

Script Portlet

DDC

WSRP Consumer

Web Application Bridge

Integration Examples

Why we need two kinds of Programming Approaches

J2EE

XDX

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

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)