



Meeting complex personalisation requirements in WebSphere Portal and Lotus Web Content Management



David Strachan, 28th September 2010

Contents

- Introduction
 - Open Logic & presenter introduction
- Portal personalisation
 - Recap on portal's personalisation engine
 - What can you do with it?
 - A couple of examples with PZN
- Beyond PZN
 - Complex requirements that can't be met with PZN

Part I

INTRODUCTION

Presenter introduction



- David Strachan
- Senior architect at Open Logic
- 6 years at IBM, of course
 - UK and France
- 6 years in business partners
- Open Logic architecture leader
- david.strachan@openlogic.co.uk
- 07891 059191

Open Logic introduction

- IBM Premier Business Partner
- Focus areas
 - Portal & WCM
 - Business process automation, incl Lombardi
 - Social & collaborative computing
- Based in UK – London and Worcester
- Recognition
 - Lotusphere awards 2009
 - Distinguished partner, NE IOT
 - Platinum awards 2008
 - Partner of the Year
 - Top Marketing Performer
 - Best Solution Provider
 - Beacon Awards finalist 2007
 - Sunday times tech track 100 *twice*
- Software Services partner

Merger

- **Open Logic is merging with Ascendant, Inc to form ASCENDANT EUROPE**
- Adds depth of offshore resource in Serbia
- Access to Ascendant talent in USA, India & Brazil
- Ascendant Europe will be separate business unit of Ascendant Inc, headquartered in Worcester and Belgrade

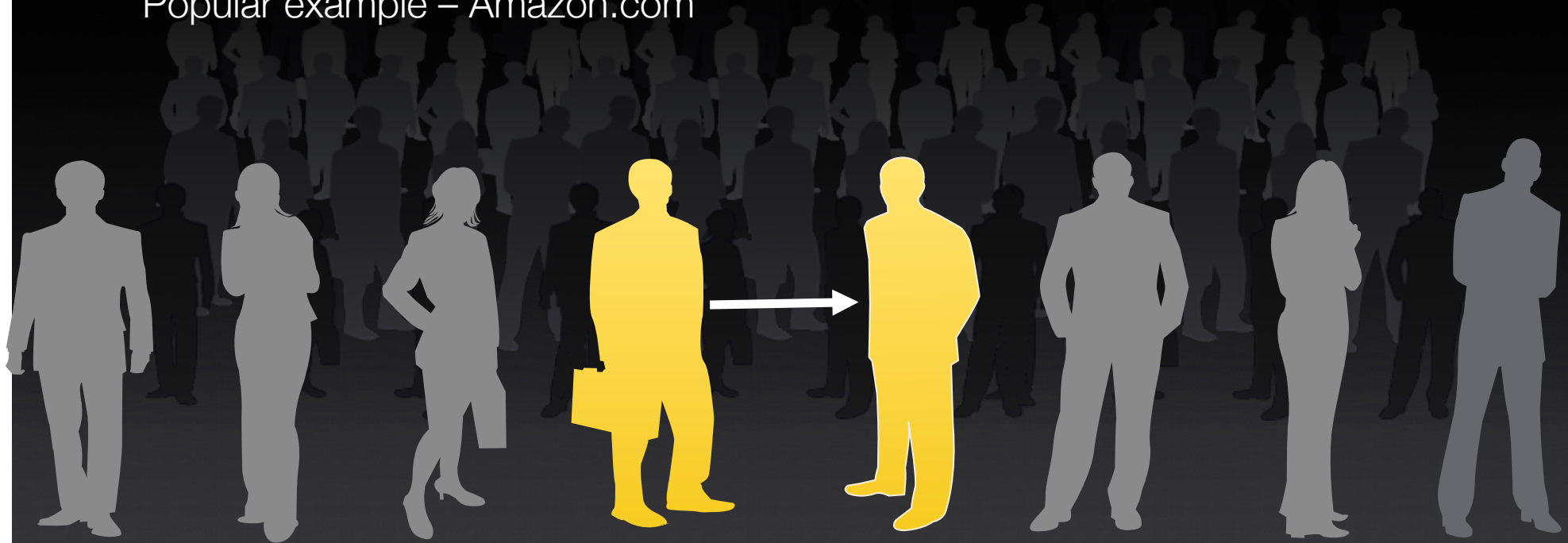
Part II

PORTAL PERSONALISATION

Definition of “Personalisation”

Process of tailoring information to an individual users' characteristics or preferences.

Popular example – Amazon.com



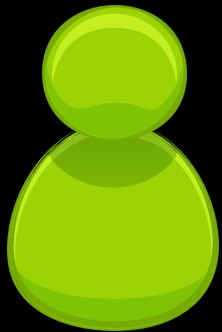
Making Conversations Actions

Three different flavours of personalisation

- User-driven, also called “customisation”, based on users’ explicit choices
- Provider-driven, based on portal set-up
- Data-driven, based on rules

Two keys to personalisation within Portal

- a. User profile, describing the user’s interests – criteria for driving personalised content selection
- b. [WCM] Content tagging – enabling selection of relevant content



Provider-driven personalisation

- Essentially, using groups to target content and portlets at the right set of users
- However, Portal security provides access to the **union** of users in the selected groups, not the **intersection** of those groups
- One option, which we used at the University of London, is dynamic groups BUT your LDAP must support it, and it will raise performance questions

Groups need to be carefully designed

- However, Portal security provides access to the **union** of users in the selected groups, not the **intersection** of those groups



If you've lots of dimensions or lots of possible values, you're going to need LOTS of group, and who's going to manage *that*?

Rules-driven personalisation with WebSphere Personalization

- Provided with WebSphere Portal since, like, forever
- Two main integration points with WebSphere Portal
 - WCM Personalization Components
 - Visibility rules on pages and portlets
- Personalisation can be driven from user profile attributes plus others made available to the personalisation engine

Personalized Content Delivery in Portal

- Define business rules to control what content is presented to users
- Manage Campaigns, Newsletter, etc.
- Rules use attributes
 - Browser type, sessions variables, LDAP attributes, custom attributes from applications, etc.
 - Web services allow to run distant rules and obtain content from another server
- Examples
 - Show marketing related content to marketing people (i.e. Dept 17M)
 - Show sales related content to sales people (i.e. Dept 42S)
 - Show technical related content to technical people (i.e. Dept 99T)

Personalization Editor

Match Users to Content

Located in Workspace Root ▼

Description Match Users to Content

Rule Type Binding ▼

Binding rules allow different sets of content to be selected. They may execute multiple rules at the same time, but are not constrained.

When [Department Profile](#) is

[Marketing](#) or [Profile](#)

do [Select Marketing Training](#)

[Sales](#) or [Profile](#)


do [Select Sales Training](#)

[Technical](#) or [Profile](#)

do [Select Technical Training](#)

Rule drives content for each user

Announcements




The IT Message today is great
News

Nov 7, 2008 10:23:59 AM -
Document updated by wpadmin
From: Noreen Ludlow
The IT Message today is great
News

← IT Person

Announcements



The Sales Message today is
Outstanding

Aug 12, 2009 10:59:37 AM -
Document updated by Sam Curman
From: Sam Curman



Here is the new sales announcement!
Sales are way up and up, looking
forward to a banner *Third quarter in
2009!*

Sales Person →

User profile

News

Top stories [Past 7 days >](#)

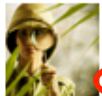



The science of transformation


Six guiding principles important for any successful transformation effort. [Profile for all IBM]

Smarter product and service innovation
Learn how IBM is transforming the consumer electronics industry. [Profiled for S&D, Sales, Research, SWG & GBS]


Mobile technology builds builder's business
Access to realtime data boosts sales for VCC [Profiled for SWG, Business Partners and other profiles]



Lea
roa
for



Opt
nev
Sal



IBI
IBN
tab

Oracle limits
New fixed con
of lock-in. [Pr

IBMers at ou
Eighth in our s
through comm

Industry and Areas of interest

Industry:

- Aerospace & Defense
- Automotive
- Banking
- Chemicals & Petroleum
- Computer Services
- Consumer Products/Wholesale
- Education
- Electronics
- Energy and Utilities
- Financial Markets
- Government-Central/Federal
- Government-State/Provincial/Local
- Healthcare
- Industrial Products
- Insurance
- Life Sciences/Pharmaceuticals
- Media & Entertainment
- Professional Services
- Retail
- Telecommunications
- Travel & Transportation

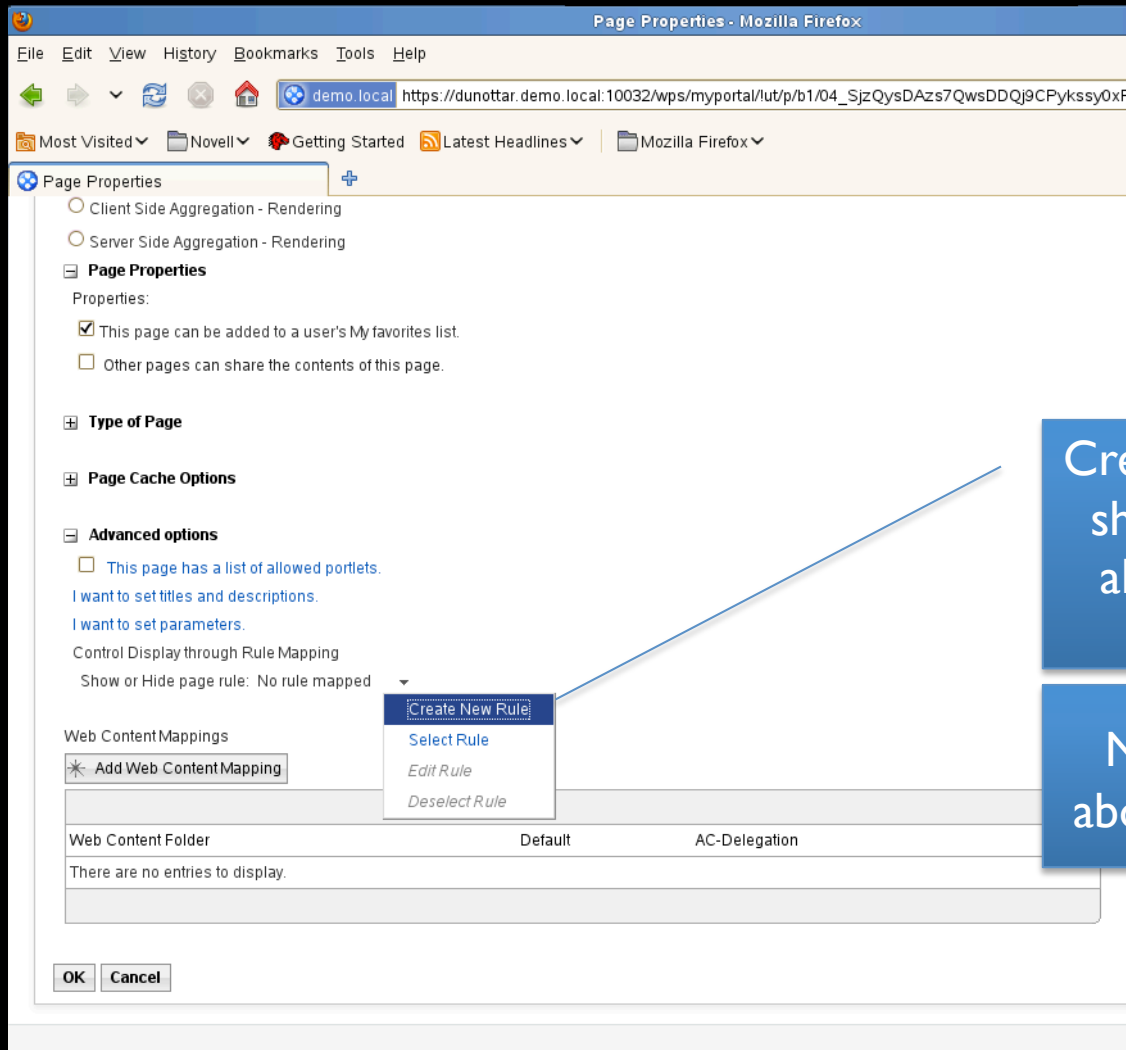


New at v7: Impersonation of Users

- Provides the ability to enable “empowered users” to impersonate a different user with respect to portal navigation, customized pages and customized portlets
 - However, this does not extend to access to secure, back end content and applications
 - Useful in scenarios : Helpdesk/Support, Administrative Support



Visibility rules



Create visibility rule to show/hide page (can also be applied to a portlet)

Need to be careful about rule complexity

Personalisation – user profile attributes

The screenshot shows a WebSphere configuration interface. A dropdown menu is open, listing various user profile attributes. The 'businessAddress' attribute is selected and highlighted. A blue callout box on the right contains the text: "Set of default data for personalisation. Driven by user profile." The background shows a form with several input fields, some of which are partially obscured by the dropdown menu. The top navigation bar includes 'Portal Users', 'Applications', 'Search Center', and 'Tag Center'. The bottom status bar contains a JavaScript error message: "javascript: try {cafMenuItemLaunchAction(event);} catch (e) {cafMenuItemLaunchAction();}"

Set of default data for personalisation. Driven by user profile.

Personalisation – extending profile data

- Implement interface `com.ibm.websphere.personalization.resources.Resource`
- Tutorial: http://www-10.lotus.com/ldd/portalwiki.nsf/dx/Developing_a_personalized_portlet_wp7

The image shows a sequence of steps in Rational Application Developer. On the left, the 'Construct a Personalization Resource' wizard is open, showing a list of columns to be selected. A blue arrow points to the right, where a portlet configuration dialog is shown. The dialog has a dropdown menu for 'Customertype' with options: 'Details', 'Offer_id', 'Gold', 'Not a Customer', 'Platinum', 'Titanium', 'Portal Users', 'User', 'Action Bean', and 'Action Count'. The 'Gold' option is selected.

Construct a Personalization Resource

DataSource name must be specified on the Deployment tab.

Selected Columns:

Display Name	Java Type	Description (value)
Birthdate	java.sql.Timestamp	
Customertype	java.lang.String	Gold (Gold), Platinum (Platinum), Titanium (Titanium)
Department	java.lang.String	
Email	java.lang.String	
First_name	java.lang.String	
Gender	java.lang.String	
Incomegroup	java.lang.Integer	
Last_name	java.lang.String	
Numlogins	java.lang.Integer	
Office_phone	java.lang.String	
Password	java.lang.String	

Assistant in Rational Application Developer to help create this (for simple cases)

Select Pzn offers
whose attribute is value
order as is
show all items

Select Pzn offers
whose Customertype is value
add Condition
order as is
show all items

Customertype
Details
Offer_id
Gold
Not a Customer
Platinum
Titanium
Portal Users
User
Action Bean
Action Count

Save Cancel

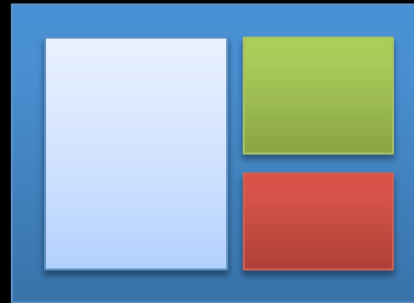
So, getting creative about this...

- We can use visibility rules to show and hide content
- We can add additional personalisation user profile data from many different sources
 - Databases, web services, rules engines etc
 - Bring programmatic data into personalisation without extending the user profile
- So we can do some interesting things...

Use PZN to drive simple multi-variant testing



Variant 1



Variant 2

- Two variants of a page – different layouts, say

Content Spot Details
Name Insurance
Description Variants of insurance page
Count Start 2010-03-26 12:15:26.032

Name	Weight	Hit Count	Action Count	Action %	
Variant2	50	9	3	33.333336	Delete
Variant1	50	10	3	30.000002	Delete

Page 1 of 1 1

[Reset Counts](#) [Edit](#) [Delete](#) [Back](#)

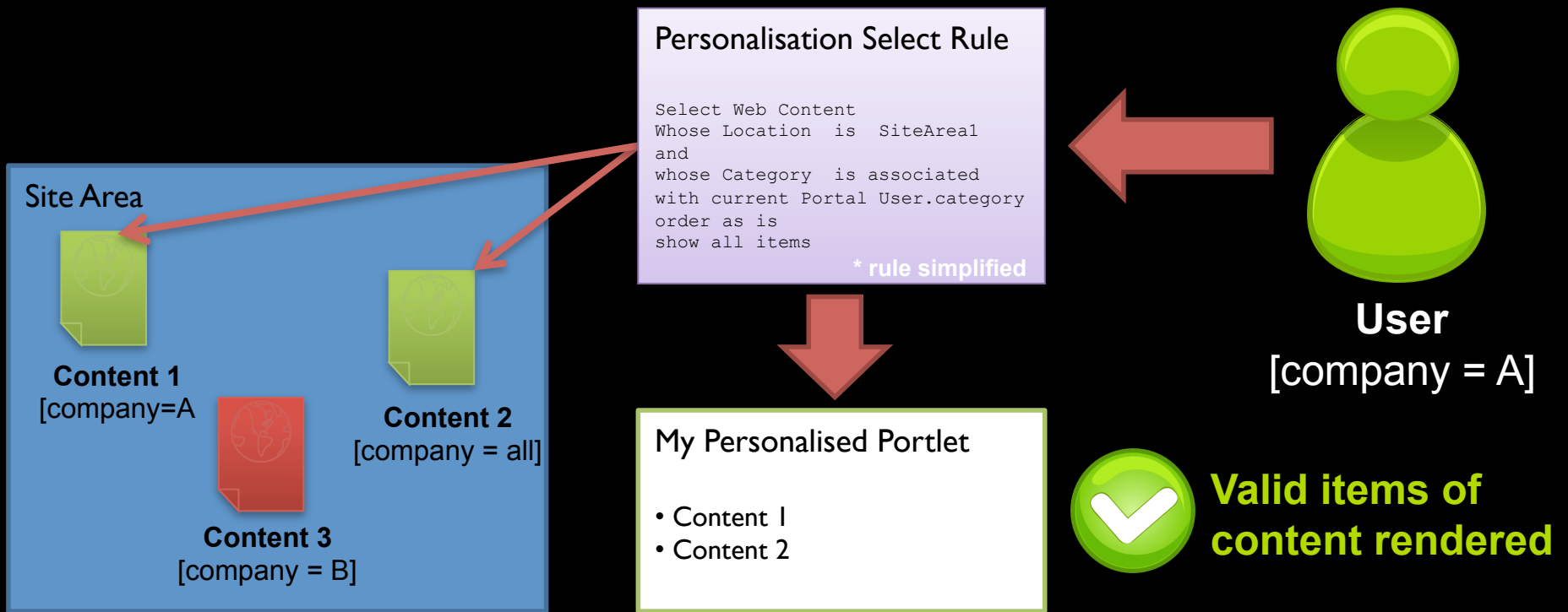
- Database controls weighting (here seen in portlet front-end), applied by visibility rule driven from custom personalisation class

Part III

BEYOND PZN

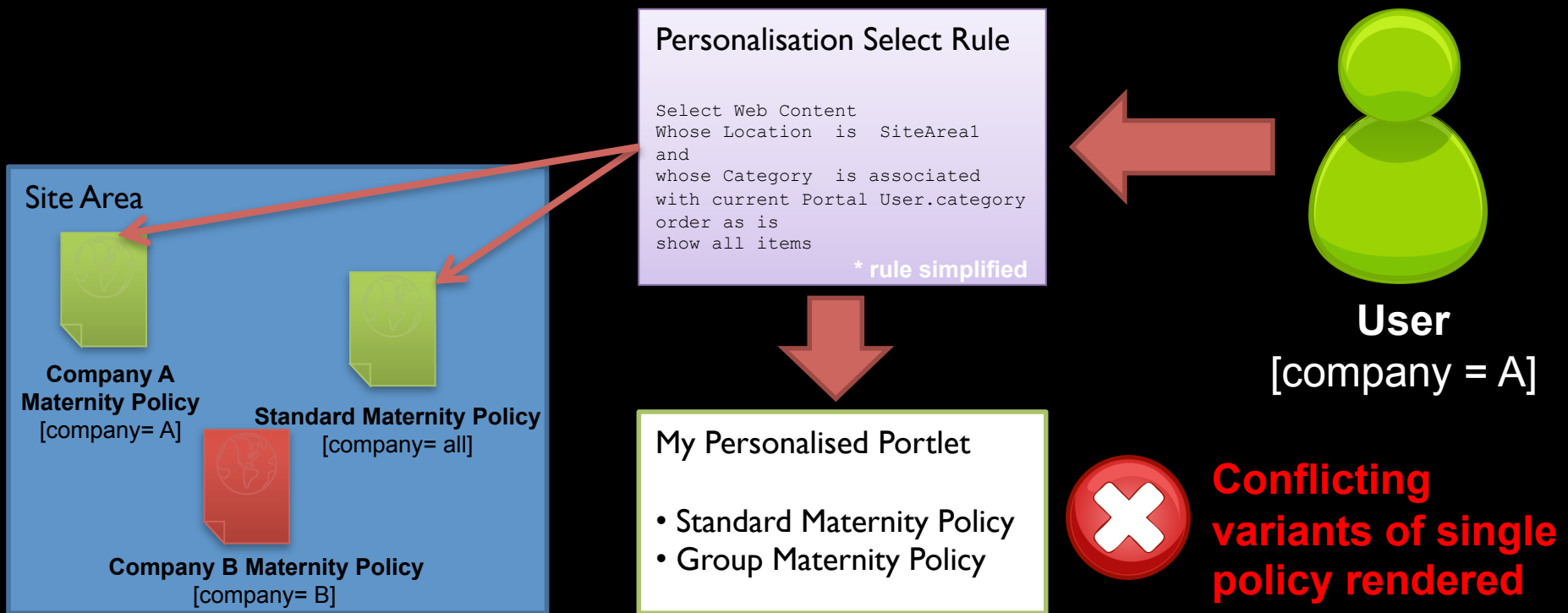
Existing content personalisation capabilities

- Portal contains a personalisation engine which is able to return pieces of content stored in WCM
- Can select content which is profiled (has categories) to match the current user's details



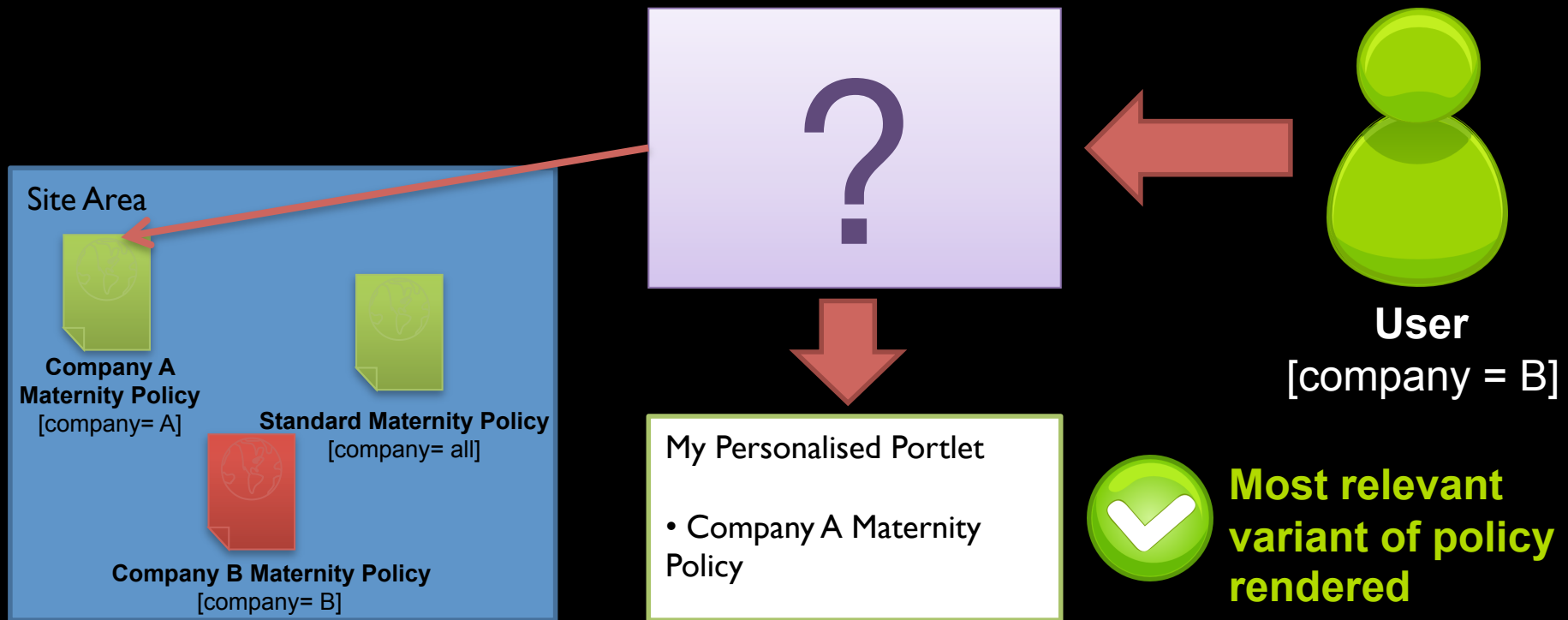
Limitations of existing capabilities

- In real scenarios some of these pieces of WCM content might be different variants of the same piece of information.
- Personalisation would return more than one version of the same thing
 - Could restrict rule to return a single result – but which one?



Limitations of existing capabilities

- In order to determine which variant of the policy to render we need to be able to ascertain which was the 'closest' (or most relevant) matching for this user
 - Personalisation engine has no concept of relevance
 - Neither match might be exact if 'All' values exist in taxonomies



Additional Complexity - Precedence

- When we are profiling content based on multiple user attributes (and taxonomies in WCM) determining the most relevant variant is not trivial
 - At this client, content is profiled by Country, Company, Division, Sub Division, Role and Language.
 - Each attribute can be matched specifically (User.company = Content.company) or generically (Content.company = ALL)

- Consider the following simple example:

Source content in WCM

Name	Country category	Company category
Maternity Policy for UK	UK	All
Maternity Policy for UK Company A Employees	UK	Company A
Maternity Policy for France	FR	All

User Profile

- Country = UK
- Company = Company A

Content Matching user profile

Name	Country	Company	Matches
Maternity Policy for UK	UK	All	1 specific, 1 generic
Maternity Policy for UK Company A Employees	UK	Company A	2 specific



Most relevant content is clear

Additional Complexity - Precedence

- When we are profiling content based on multiple user attributes (and taxonomies in WCM) determining the most relevant variant is not trivial
 - At RBS, content is profiled by Country, Company, Division, Sub Division, Role and Language.
 - Each attribute can be matched specifically (User.company == Content.company) or generically (Content.company = ALL)

- Consider the following more complex example:

Source content in WCM

Name	Country	Company	Division
Maternity Policy for UK Corp Mkts	UK	All	Corp Mkts
Maternity Policy for UK Company A Employees	UK	Company A	All
Maternity Policy for France	FR	All	All

User Profile

- Country = UK
- Company = Company A
- Division = Corp Mkts

Content Matching user profile

Name	Country	Company	Division	Matches
Maternity Policy for UK Corp Mkts	UK	All	Corp Mkts	2 specific, 1 generic
Maternity Policy for UK Company A Employees	UK	Company A	All	2 specific, 1 generic



Which is most relevant?

Additional Complexity - Precedence

- Need a concept of precedence on the attributes
 - A specific match on one attribute (ie Division) is more important than a specific match on another attribute (ie Company)

- Assuming the following precedence:
 - Division (highest)
 - Company
 - Country (lowest)

Source content in WCM

Name	Country	Company	Division
Maternity Policy for UK Corp Mkts	UK	All	Corp Mkts
Maternity Policy for UK Company A Employees	UK	Company A	All
Maternity Policy for France	FR	All	All

User Profile

- Country = UK
- Company = Company A
- Division = Corp Mkts

Content Matching user profile

Name	Country	Company	Division	Matches
Maternity Policy for UK Corp Mkts	UK	All	Corp Mkts	2 specific, 1 generic
Maternity Policy for UK Company A Employees	UK	Company A	All	2 specific, 1 generic



Most relevant is now clear



Additional Complexity - Items

- Our examples showed single item of information (Maternity Policy) in the Site Area. What about more than one item of information?

Maternity Policy Summary (Global)
Maternity Policy Summary (UK)
Maternity Policy Summary (SWE)
Maternity Policy Body (UK)
Maternity Policy Body (Global)
Maternity Policy Body (SWE)
Maternity Policy Body (UK Company A)
Maternity Policy Form (Global)

...is
really...

Maternity Policy Summary

- Maternity Policy Summary (Global)
- Maternity Policy Summary (UK)
- Maternity Policy Summary (SWE)

Maternity Policy Body

- Maternity Policy Body (UK)
- Maternity Policy Body (Global)
- Maternity Policy Body (SWE)
- Maternity Policy Body (UK Company A)

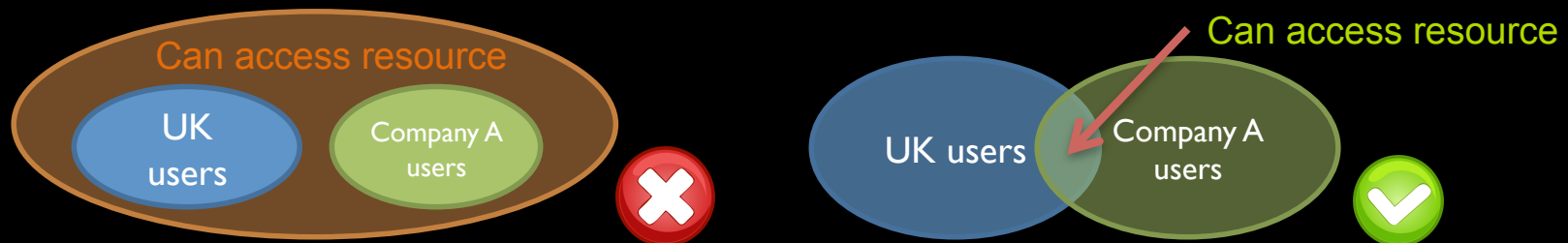
Maternity Policy Form

- Maternity Policy Form (Global)

- Suggests additional concept in WCM between SiteArea and Content
- Need to select best matching version of every 'item' of information

How does this relate to security?

- Users must match all of the selected content categories to see the content.
 - To see content with company of 'Company A' and country of 'UK' the user profile must match BOTH of these values
- However, Portal security provides access to the **superset** of users in the selected groups, not the **intersection** of those groups



- Thus, to model the desired functionality via security, you need a group for every combination of the categories.
 - Groups in the format [Country]_[Company]_[Division]_[Subdivision]_[Role]_Users
 - Client calculated that this would require tens of thousands of groups (or PZN selectors) – not feasible

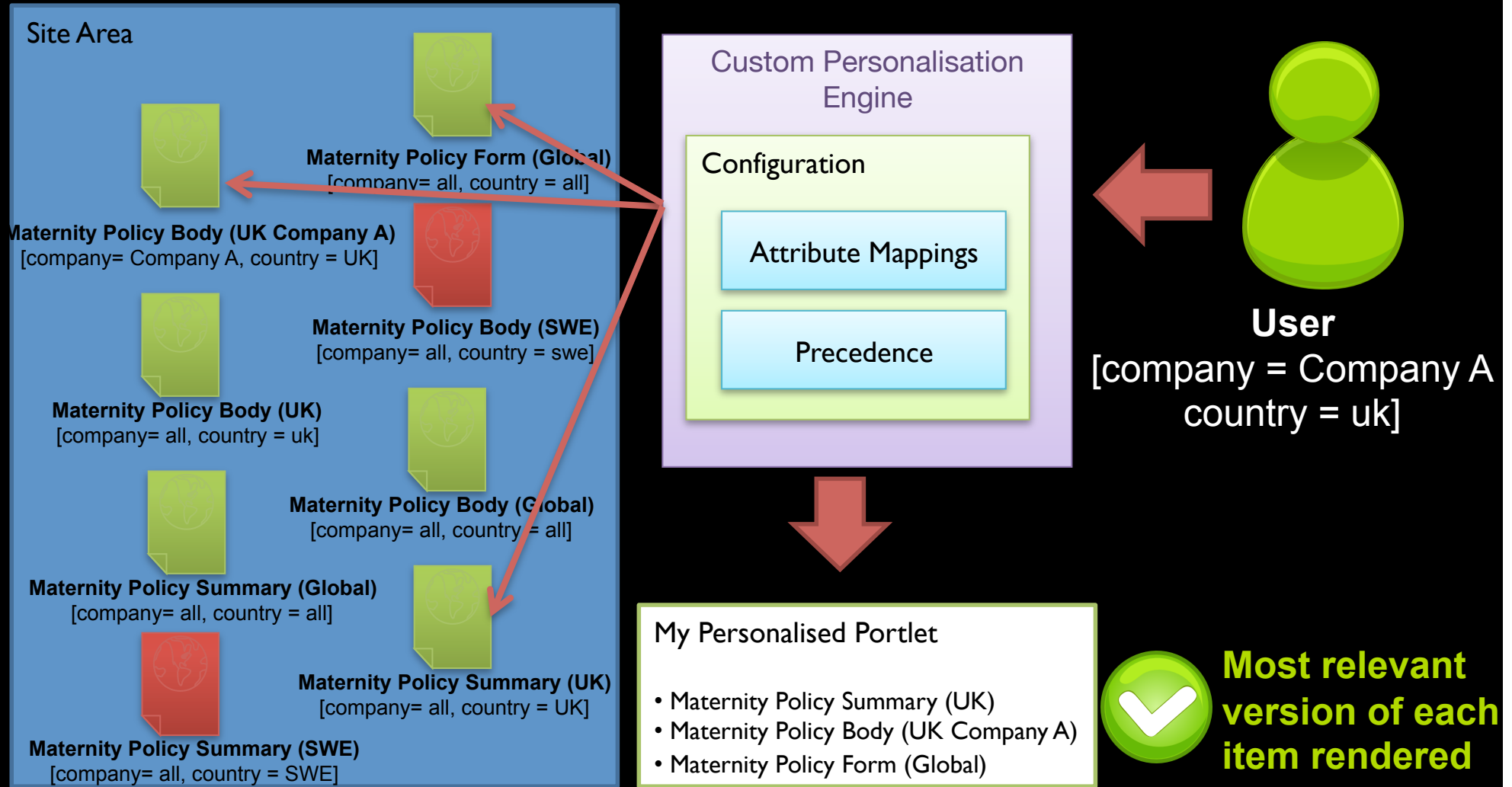
How does this relate to security?

- 'All' values of categories mean that multiple versions of an item of content might still be accessible to a user
- Some Client users exist in multiple groups – ie UK line manager managing Indian team exists in:
 - UK Line Manager groups (his own HR information)
 - Indian employee groups (his team's HR information)
 - Can switch 'context' to see **EITHER** his **OR** his team's 'view' of the HR data
- Thus, at the Client, security groups mirror Country, Company and Role categories but final responsibility for selection is with personalisation.

What we did – custom personalisation solution

- Creates additional concepts within WCM
 - **Content Item** – a piece of information such as Maternity Policy
 - **Content Variant** – a specific version of a Content Item (such as Company A Maternity Policy)
- Adds a generic, configurable algorithm for determining content relevance based on different match types (Specific, Multi-value, Generic, None) and attribute precedence.
 - Test Harness UI to allow business users to test different configurations of algorithm
- Uses a simple naming convention to group WCM content into Content Items and Content Variants
- Ensures the user only sees the ‘most relevant’ version of every item of content in the site
 - On landing pages, in content lists (rendered by menu components), in search results etc
- Uses Dynacache to minimize performance impact

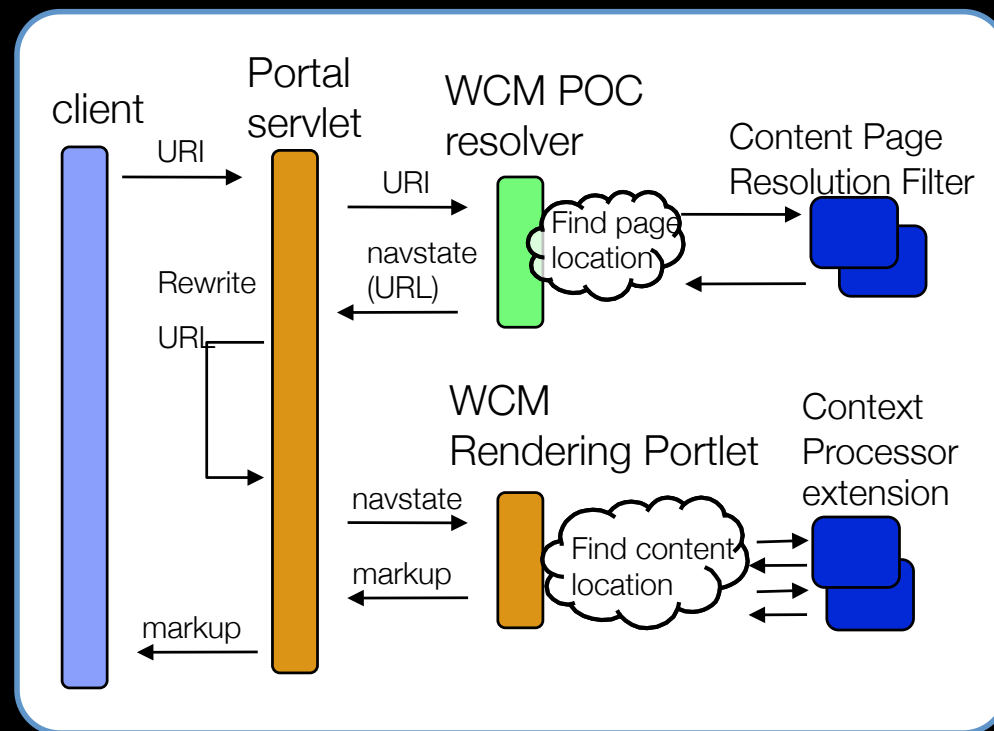
What we did – custom personalisation solution



New in WP7: Updated JSR 286 Rendering Portlet

Content Page Resolution filters

- Filter chain
 - Allows you to choose a specific page in case multiple pages are found for an item
 - Allows you to choose a specific page in case no page is found for an item



Summary

- Portal personalisation
 - Capable personalisation engine, enhanced at v7
 - Content selection, visibility rules
- Beyond PZN
 - There are complex requirements that can't be met with PZN

THANKS – ANY QUESTIONS?