



Business Consulting Services

The Use of Web Services in a Mobile Marketing Scenario

An IBM - Openwave Mobile Event Marketing Solution

Feb 03

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Mobile Marketing and Rapid Service Delivery Overview

This chapter describes wireless service provider's business challenges

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Mobile Marketing and Rapid Service Delivery

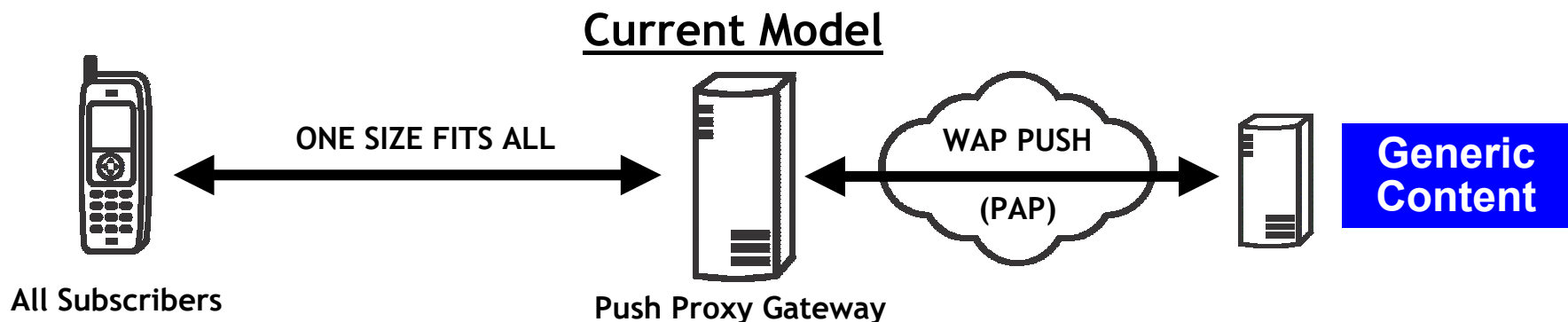
- Mobile Event Marketing is . . .
 - a **permission-based** messaging solution designed to encourage first-time adoption and usage of data services
- The objective is to . . .
 - tie interactive mobile messaging services directly to sports and entertainment events in order to drive subscribers to engage and interact with real-time events and activities
- Event Marketing can enable . . .
 - promotional campaigns, personalized alerts, voting, advertising, chat, downloads, streaming and betting applications

Key Business Challenges

1. Increase the number of first time, provisioned data users
2. Increase ongoing usage of data services with a personalized, push-based service
3. Provide an interactive campaign platform for all types of services
4. Extend that platform to third parties and capture a portion of their interactive marketing budget

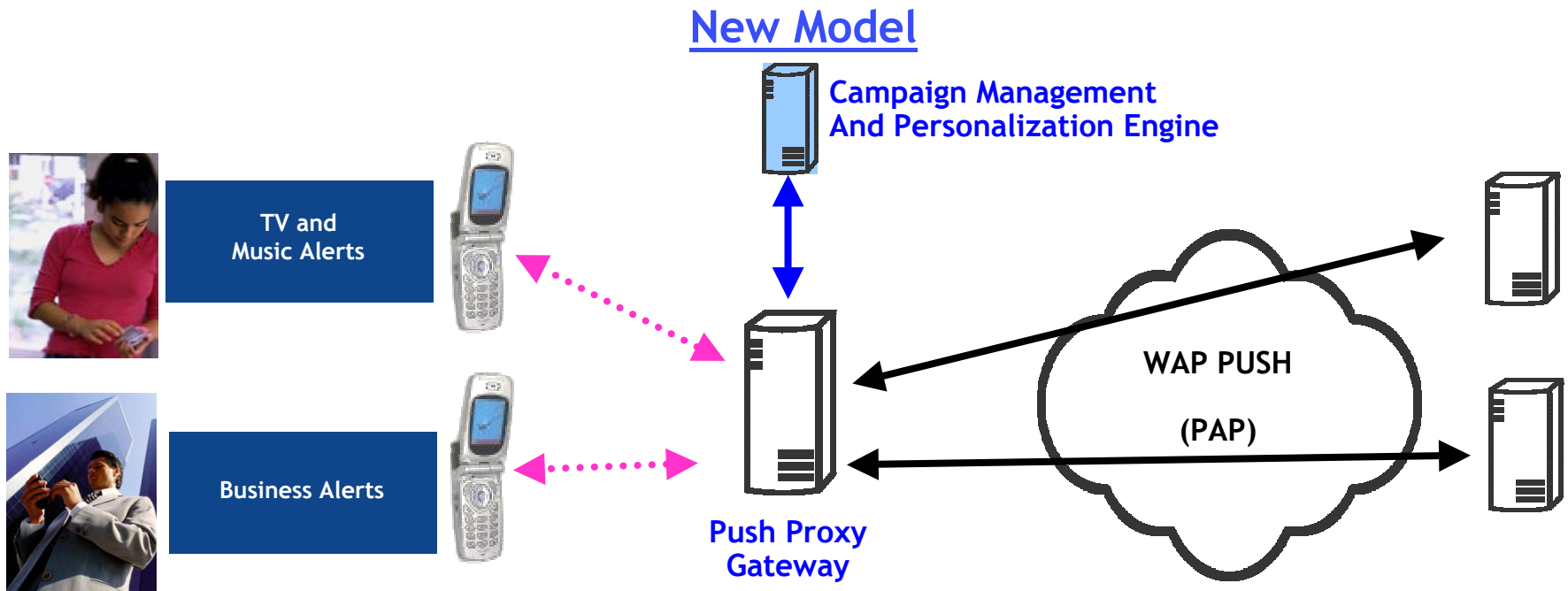
Business Challenges 1 + 2

- Passive WAP browsing has been ineffective
- Users need a more engaging, personalized data service model to justify their usage
- Carriers need to combine provisioning, push and personalization, along with effective marketing, to engage their subscribers

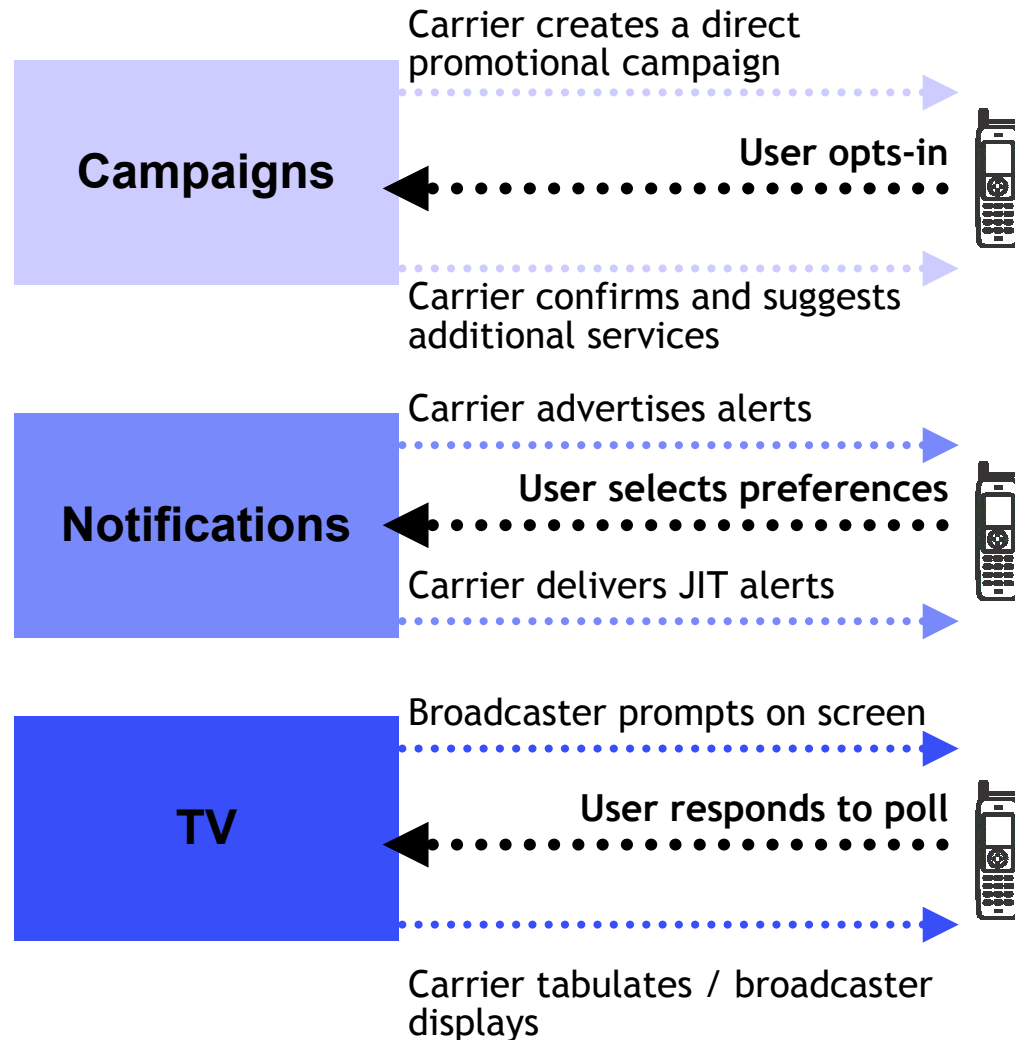


Passive vs. **Permission-Based** Push

- The specific content of interest to that users arrives when the user dictates
- The content is active, WAP-based and contains links to encourage interactivity
- The paradigm is **permission-based** and personalized



Prototypical Deployment Models



Business Challenge 3

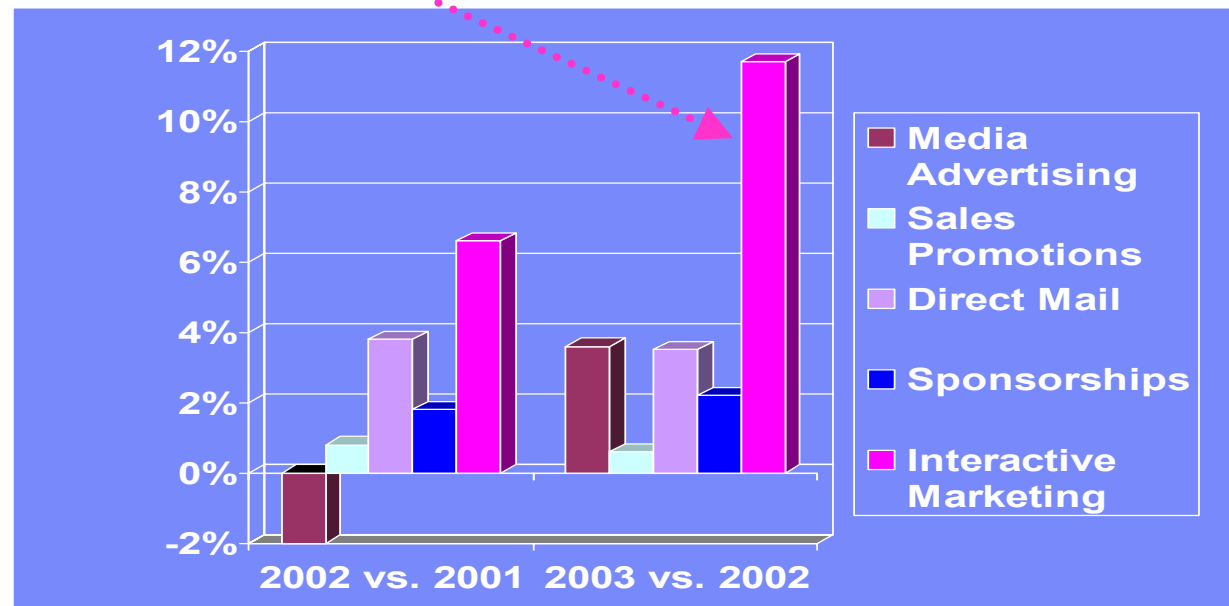
- Most wireless campaigns today:
 - Are typically hand crafted, simple SMS and text-based
 - Do not encourage interactive customer response
 - Are difficult to replicate, modify, monitor and automate
 - Do not extend to third parties
 - Are not part of an interactive marketing strategy (web + wireless + email)

IBM and Openwave bring a turnkey platform to drive data usage around sponsorships and increase the effectiveness of marketing \$\$

Business Challenge 4

- Interactive marketing, which includes wireless campaigns, is:
 - Perceived to be more accurate, more personalized and more emotionally connected than traditional media
 - Extensible across a range of delivery channels
 - Gaining an **increasing portion** of the overall marketing budget

% Change in
Marketing
Expenditure



Wireless vs. Conventional Marketing Channels

Conventional Marketing	vs.	Wireless Marketing
Finding the right target is hit or miss	→	Target is known
Accuracy of receipt is doubtful	→	Accuracy of receipt is extremely high
Media channel is often shared	→	Devices not frequently shared 1 device = 1 person
Channel may be unaware of users location	→	Device knows its location
Response rate may be delayed	→	Response often immediate
Household penetration and audience reach varies	→	More wireless devices than PC's, with penetration at 50 – 80%

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The IBM - Openwave Event Marketing Solution

This chapter describes the event marketing transaction flow, the core components and the end-user view

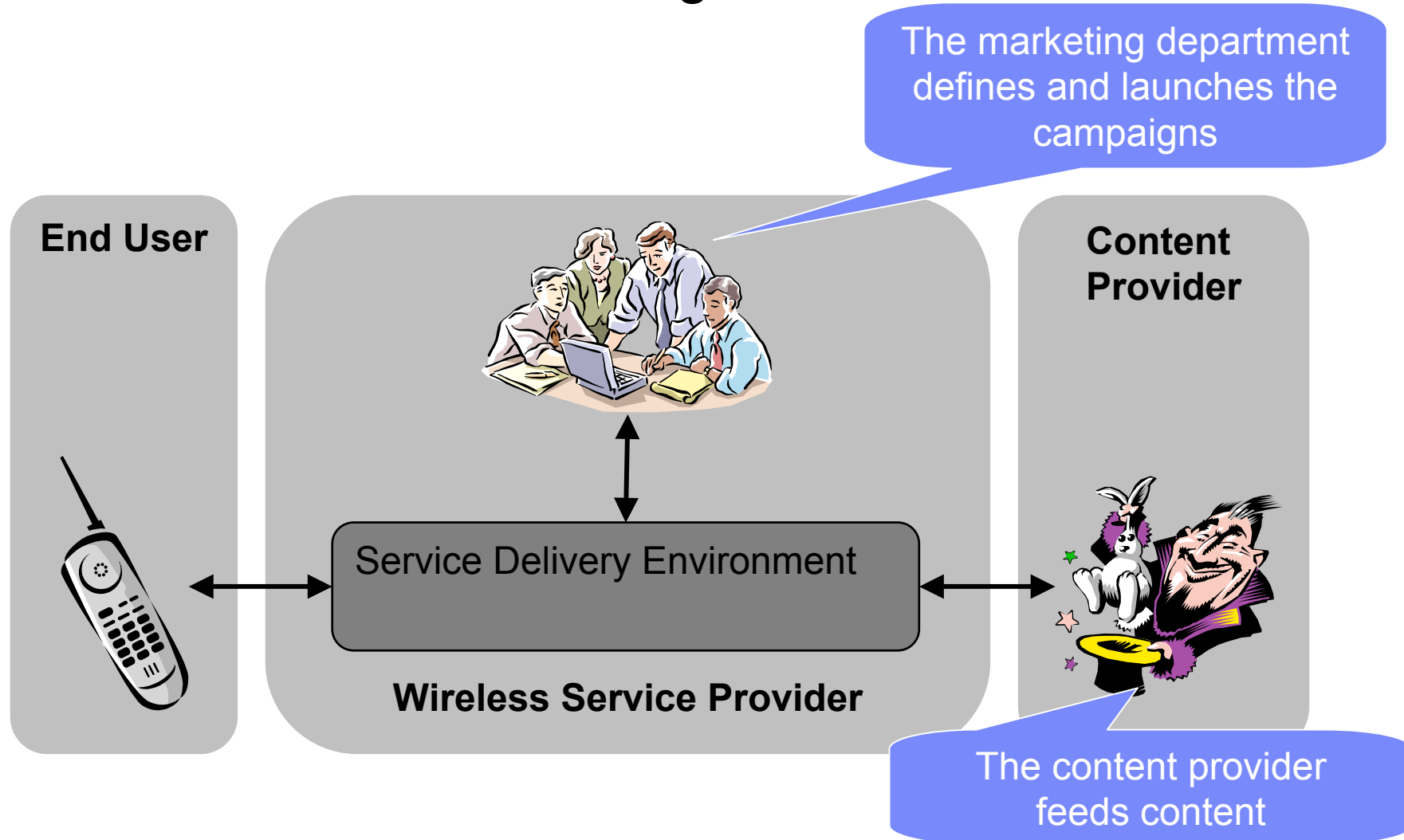
The Use of Web Services within the Event Marketing Solution

Web Services Basics

The IBM/Openwave Event Marketing Architecture

- IBM and Openwave have defined an architecture to enable content providers to easily manage and run mobile marketing campaigns.
- A proof-of-concept has been implemented in the IBM Network Innovation Laboratory in Lagaude, France
- The solution is based on IBM and Openwave products
- The following slides outline the architecture, screen-shots of the live demo illustrate the end-user experience

Actors in an Event Marketing Scenario



Event Marketing Phases

- Define and Design the Campaign

The marketing team decides on objectives, target end-users, campaign content and schedule.

- Market the Campaign

The campaign is started at the defined date. All target users are notified through a standard channel (e.g. WAP-push).

- Operate the Campaign

Registration and personalization Management. Regular evaluation during the campaign allows to remind users that have not yet opted-in.

- Evaluate the Campaign

The effectiveness of a campaign is evaluated by analyzing the behaviour of the target users. How many opted-in?, How many continued?

Core Components of the Event Marketing Solution

- **Campaign Manager**

This application enables the efficient management of mobile campaigns

- **Protocol Adaptation Services**

These services adapt the protocols of the various delivery channels to HTTP. Typical components are the WAP-gateway, the Push-Proxy gateway, voice gateways, the MMS gateway, etc.

- **Portal**

The portal provides the presentation services for the end-user services (like for example the event registration and preferences portlet).

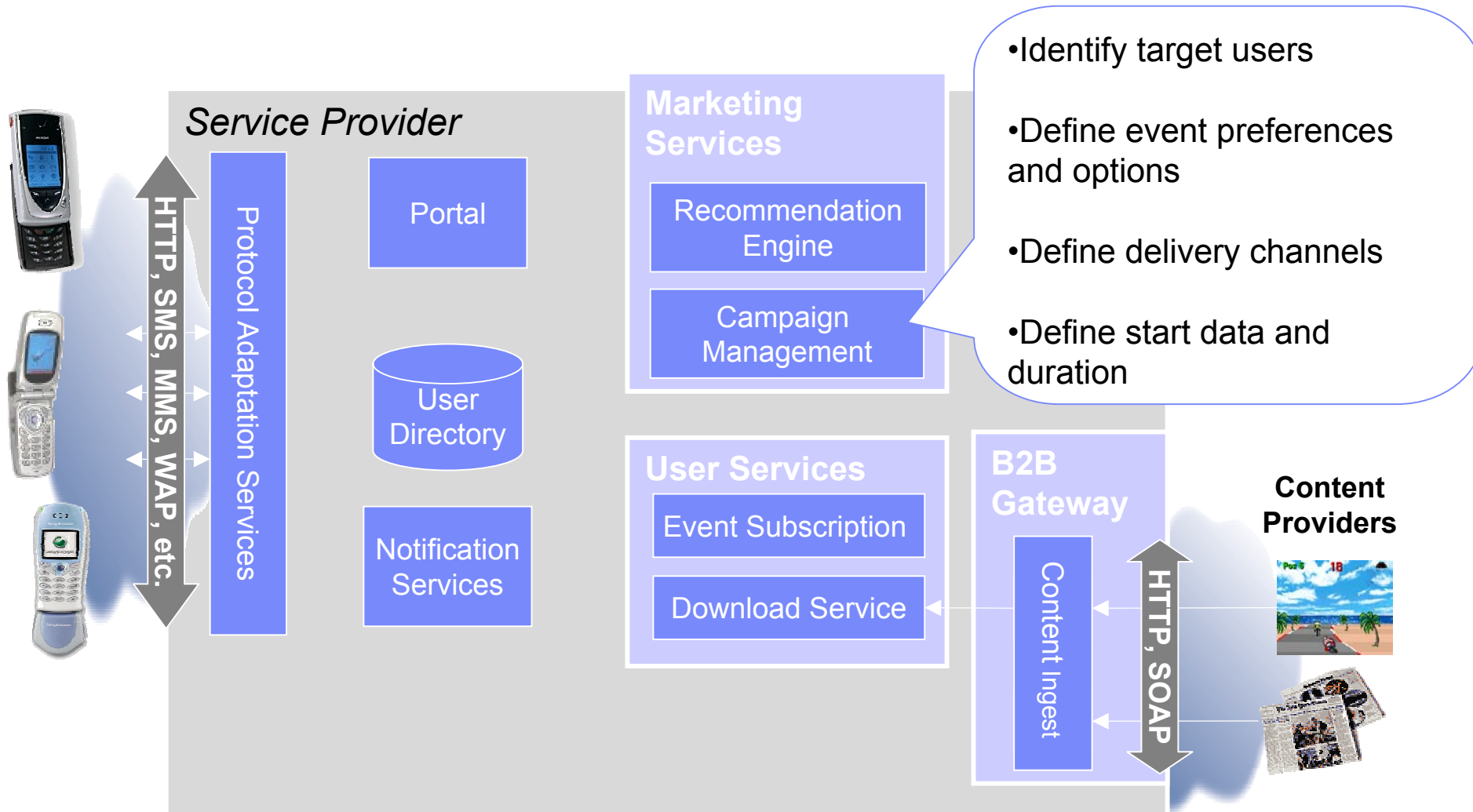
- **End-User Directory**

The end-user directory is the permanent store for user data

- **Content Ingest Service**

The content ingest service allows content providers to feed their content into the service provider's service delivery environment.

Transaction Flow – Design the Campaign



The Target Users are Wrapped into a Rule

Personalization Workspace - User: campaign1 - Project: PersSample - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History Print

Links Search the Web with Lycos IBM Business Transformation IBM Internal Help IBM Standard Software Installer Customize Links Free Hotmail Windows Media Windows Perso Work

Address <http://wea42.nil.lagaude.ibm.com/wps/PersWorkspace/UI/main.jsp> Go

WebSphere Personalization IBM

Campaign Manager Rule Composer Preview Launcher Global Settings

Actions

- actions
- Get All Products
- Get All WeatherCities
- Get All WeatherForecasts
- Get Available Products
- Get Campaign-manager user
- Get Childrens sports calendar MarketingEvent
- Get Confidential News
- Get Current Personnel
- Get Current User
- Get Current Voice user
- Get E-Mail Recipients
- Get Employees in Site
- Get EuropeanChampionLeague MarketingEvent
- Get EuropeanLeague fans Arsenal Madrid**
- Get EuropeanLeague fans OGC-Nice
- Get Future Products

Action Properties	
Name	Get EuropeanLeague fans Arsenal Madrid
Comment	Get EuropeanLeague fans Arsenal Madrid
Action Type	Select content
Content Type	Voiceusers

Action Description

```
Select content
(
  whose Voiceusers.CITY is equal to Madrid or
  whose Voiceusers.CITY is equal to Arsenal
)
order as is
```

This rule selects all users that live either in Madrid or in Arsenal

Resource Wizards allow to easily wrap any datastore. In this example „Voiceusers“ points to the customer table in the legacy voice billing system database

The Marketing Team's View

- Overview about all campaigns
- Campaigns can easily be created, modified and published
- (see sample e-mail campaign)

Edit E-mail Campaign - Microsoft Internet Explorer

Name of the E-mail Campaign:
EuropeanChampionLeague

Comment about the E-mail Campaign:
Sends Email to Users Interested in Soccer

Send E-mail on:
December 31, 2002 16:33:00

Send E-mail to:
Get EuropeanLeague users

Personalization Workspace - User: wpsadmin - Project: PersSample - Microsoft Internet Explorer

Fichier Edition Affichage Favoris Outils ?

Précédente → Rechercher Favoris Historique

Adresse http://wea42.nil.lagaude.ibm.com/wps/PersWorkspace/UI/main.jsp OK Liens

Copernic Agent Le Web en français Remonter Historique Veille Surlignage

WebSphere Personalization IBM

Campaign Manager Rule Composer Preview Launcher Global Settings

Web site

Priority	Campaign	Duration	Split
1	Holiday Sales Campaign	11/12/02 12:00 AM to 1/12/03 12:00 AM	None
2	Special Sales Campaign	11/18/02 12:00 PM to 12/25/03 12:00 PM	None

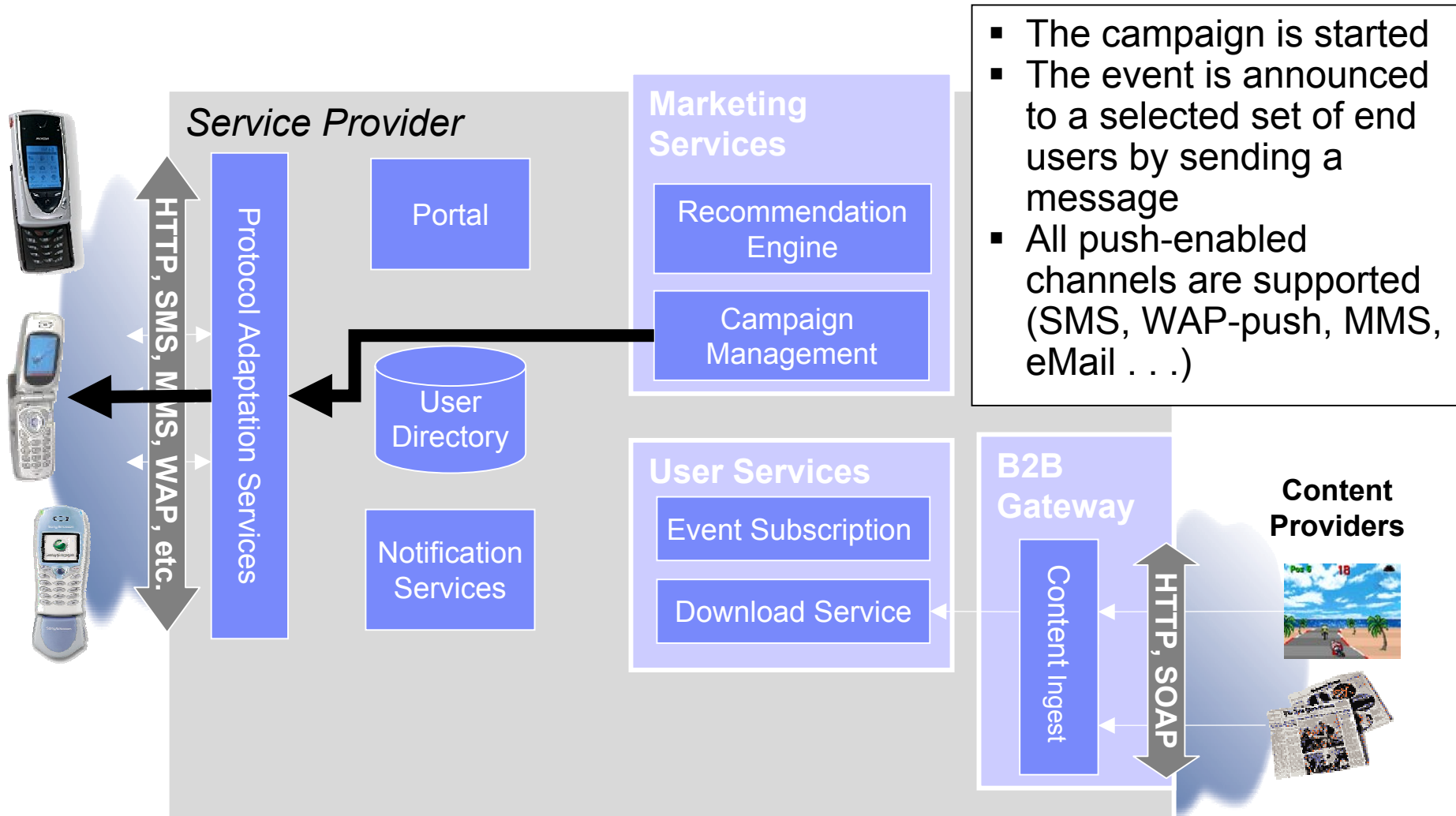
Priorities

Normal View

Holiday Sales Campaign

Special Sales Campaign

Transaction Flow – Market the Campaign

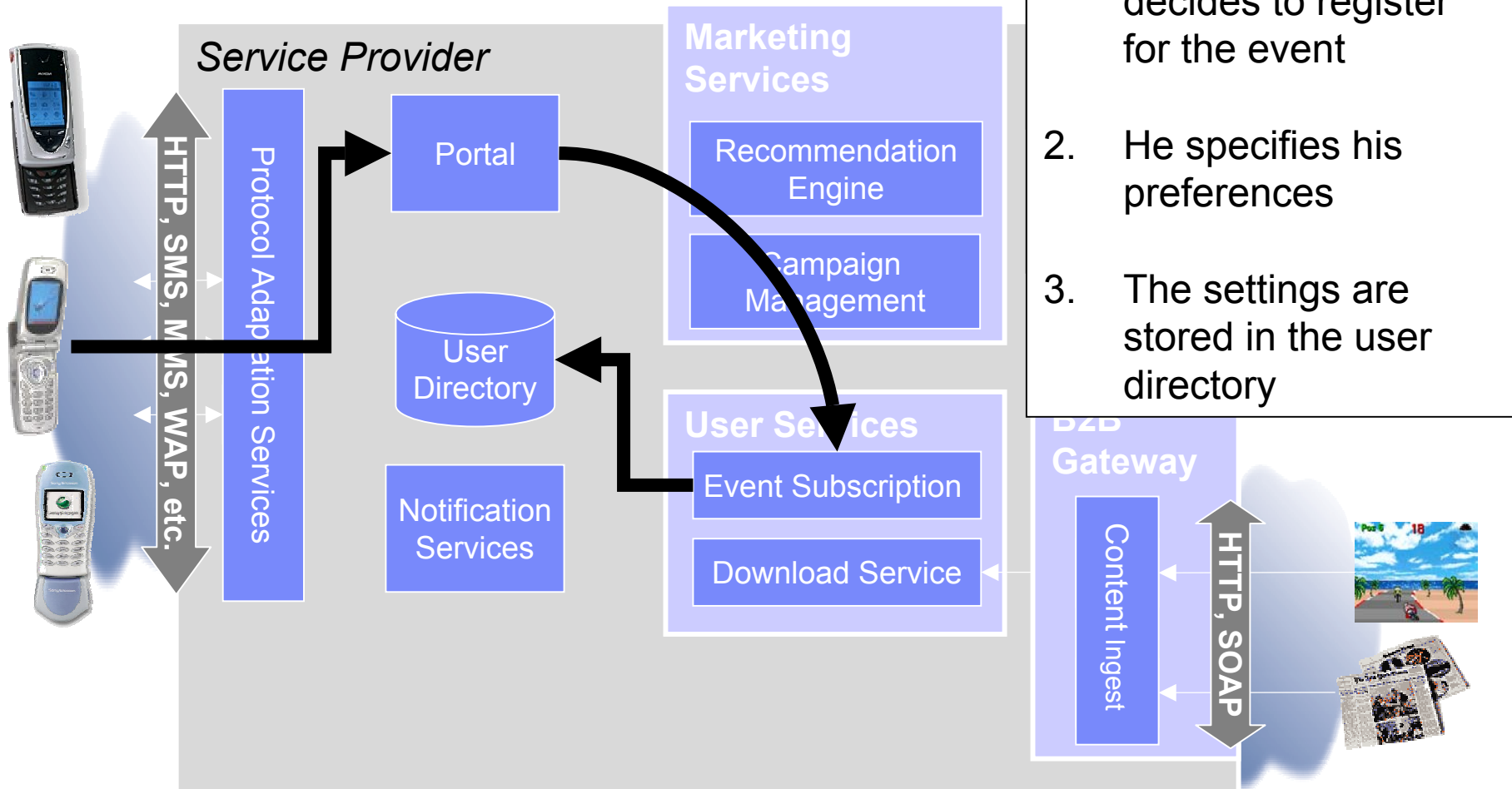


The End-User View – The campaign is announced

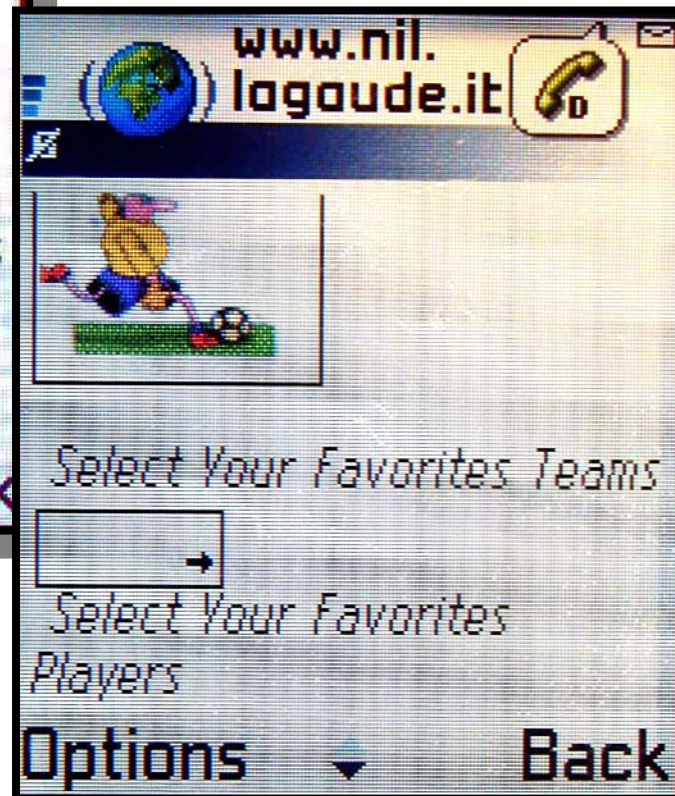


- In this sample a WAP-Push message is sent to announce the event
- The announcement is fully customizable
- The message text describes the event
- The URL points to an event specific preferences portlet

Transaction Flow – End User opts In



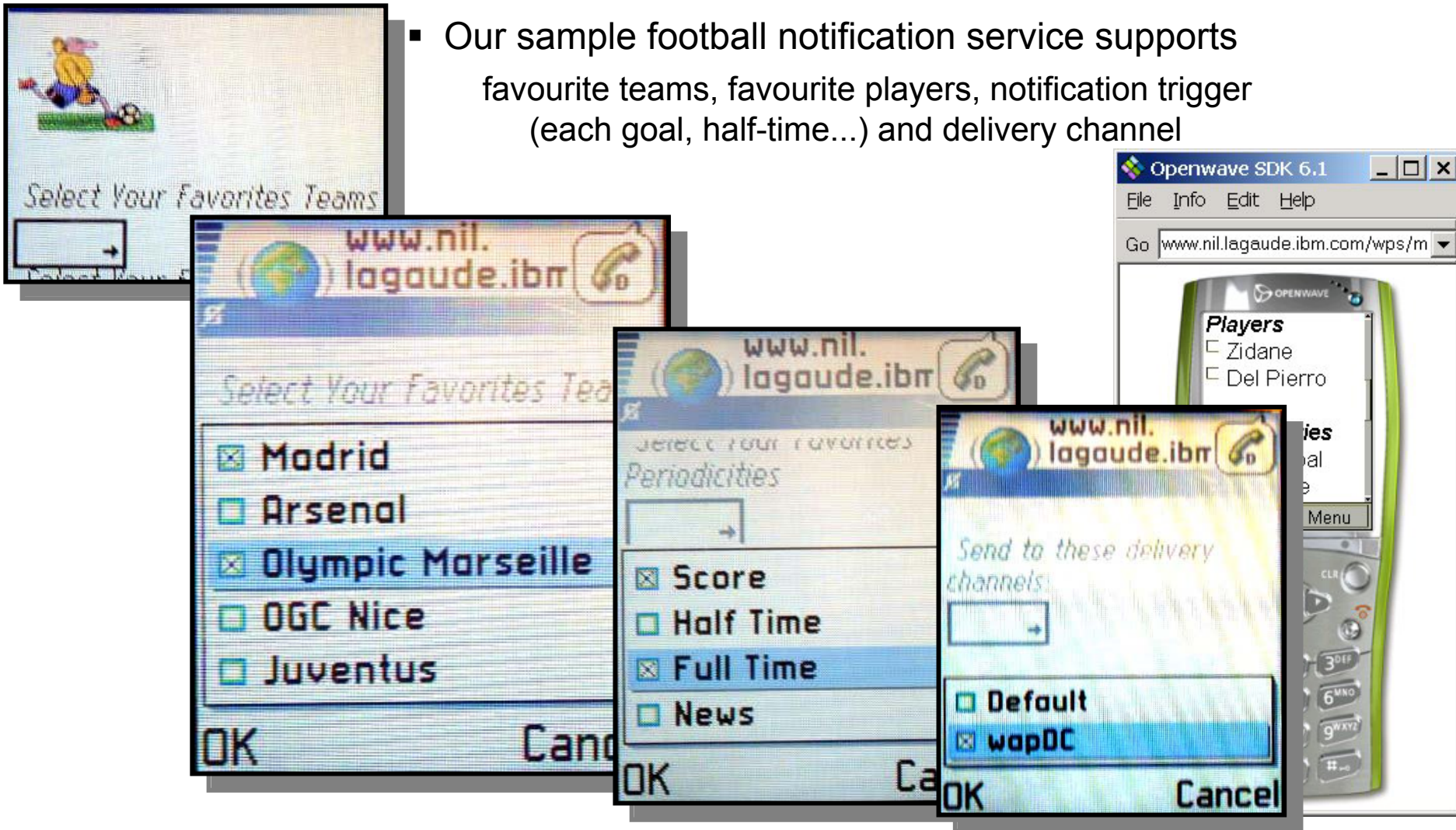
The End-User View – Registration and Preferences Settings



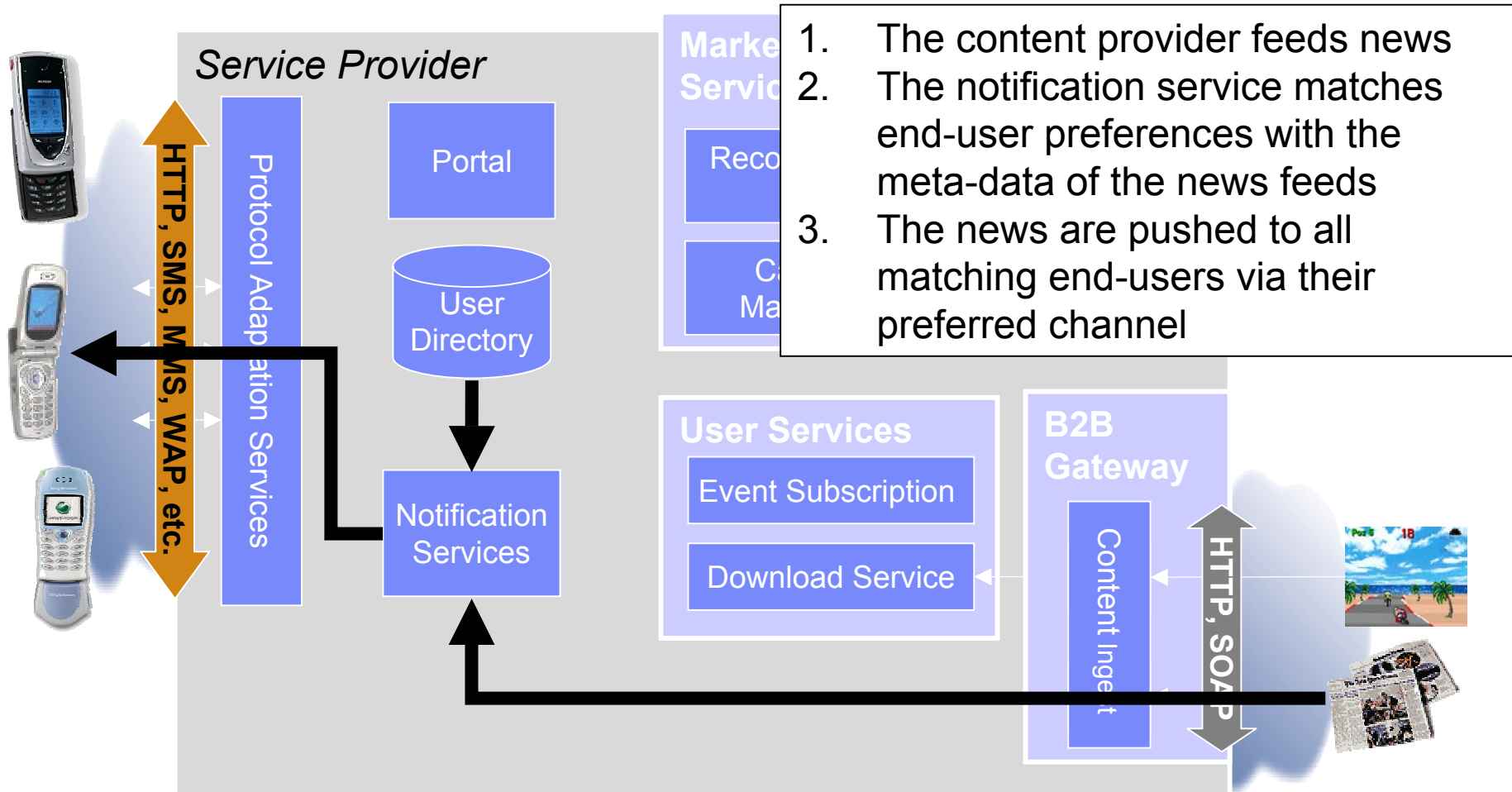
- The preferences page is fully customizable
- Banners and advertisements can be added

The End-User View – Preferences Settings

- Our sample football notification service supports favourite teams, favourite players, notification trigger (each goal, half-time...) and delivery channel



Transaction Flow – Notification Event



The End-User View – Notification and Details



- Whenever a content feed is received, the requested information is pushed to the end-user's device
- Again all push-enabled channels such as (SMS, WAP-push, MMS, eMail,...) can be used
- Links to more detailed information can be added.
example
 - Detailed descriptions
 - Pictures, Videos, ...
 - Related services such as download of light content, streaming video,...

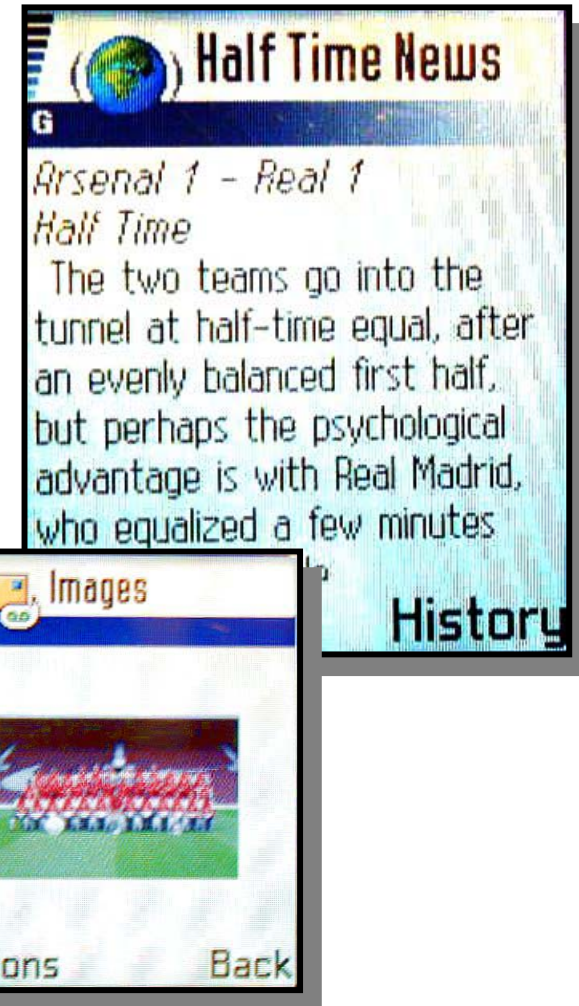


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❖ The Use of Web Services within the Event Marketing Solution

This chapter describes how Web services are used within the IBM – Openwave Event Marketing solution and how they provide an easy to use interface for content providers

Web Services Basics

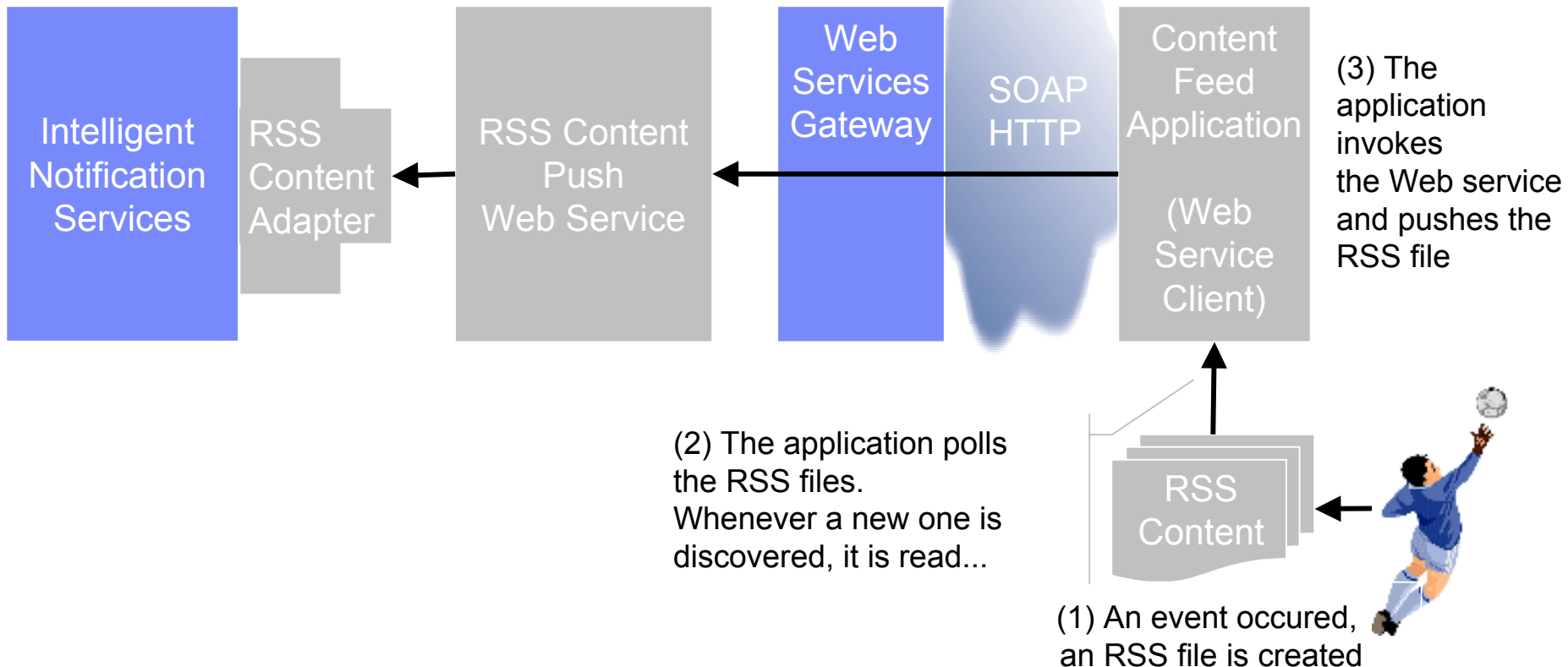
Event Marketing and Web Services

- The notification service supports two options to get content
 1. The content can periodically be **pulled** by the service provider from a given content site
 2. The content can be **pushed** by the content owner, whenever new content is ready to be published
- The web service approach is the only one that allows just-in-time delivery to the end-user
- The event marketing proof-of-concept provides a simple content ingest interface as web service that allows to push new content at any time
- The interface is simple (one method, one parameter) and as such easy to implement and use
- The content provider is in full control of the what is pushed and when

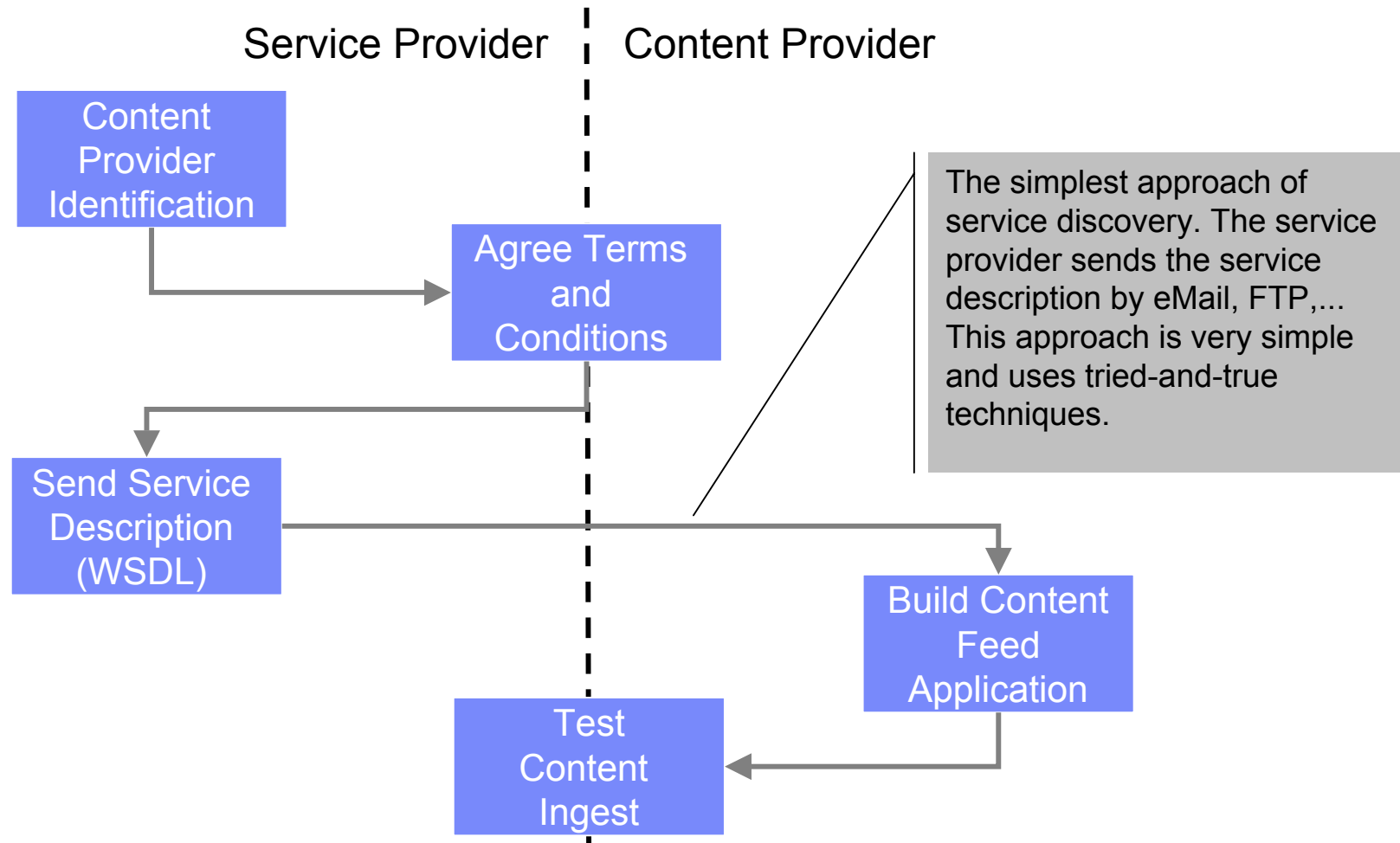
Content Ingest and Notification Architecture

Service Provider as Web Service Provider

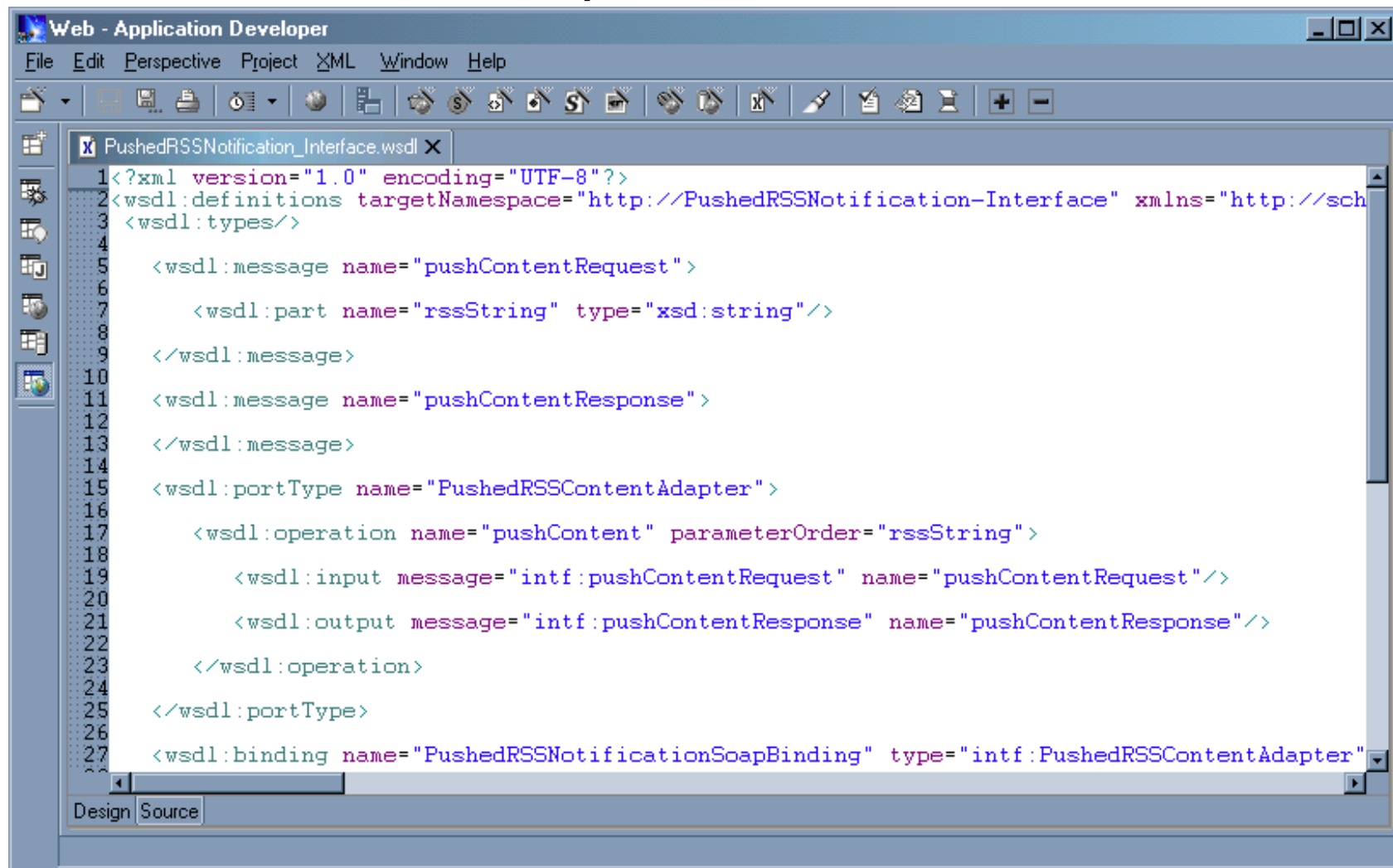
Content Provider as Web Service Requester



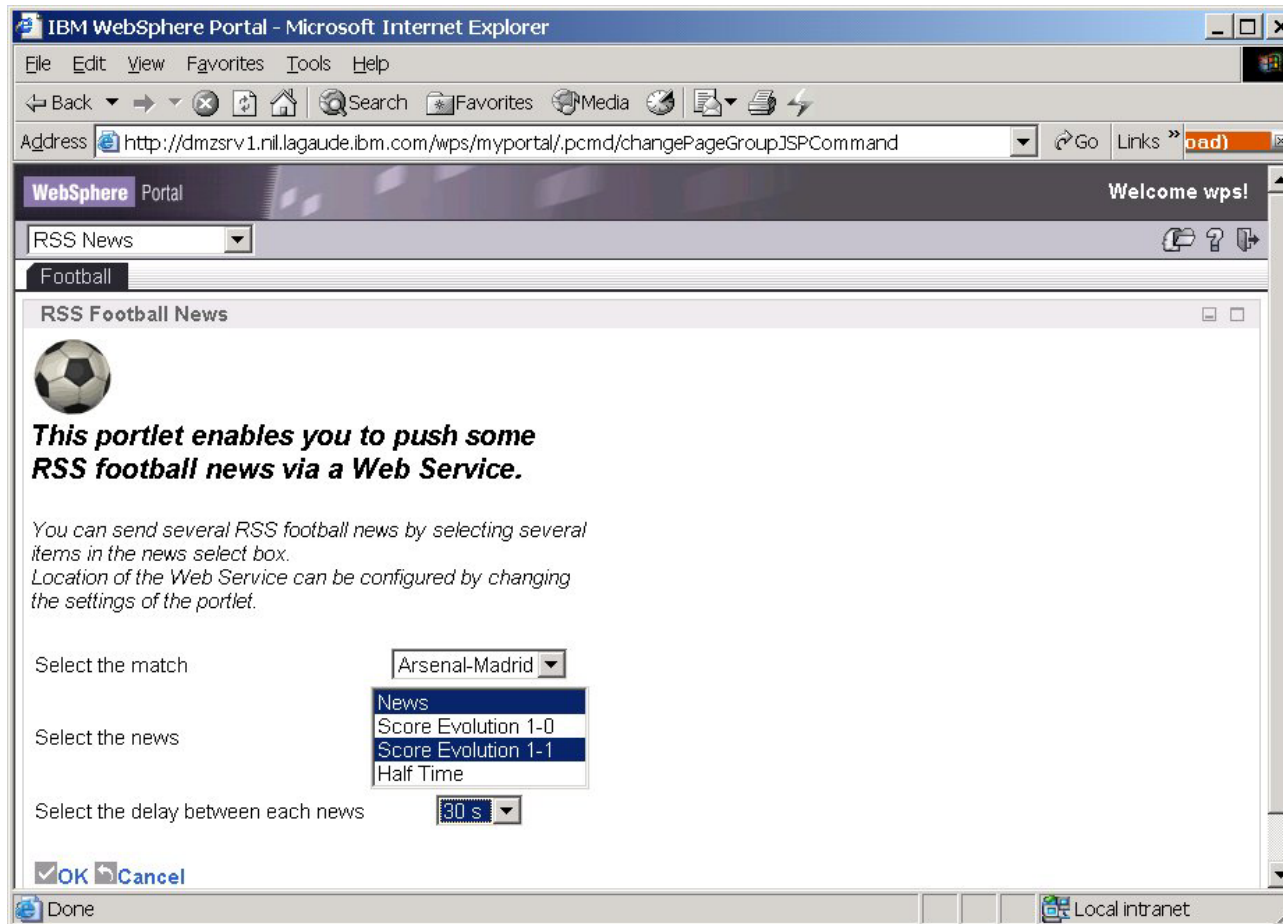
Transactions between Service and Content Provider during the Campaign Design Phase



Interface WSDL Sample



Sample Content Feed Application



- Portlet allows to categorize the desired content
- Reads selected content
- Invokes the RSS Push Web Service
- Pushes selected content through the Web Service to the service provider's environment

Requirements on Content

- The proof-of-concept interface supports RSS content
- RDF Site Summary (RSS) is a lightweight multipurpose extensible metadata description and syndication format
- RSS is an XML application, conforms to the W3C's RDF Specification and is extensible via XML-namespace and/or RDF based modularisation
- See <http://web.resource.org/rss/1.0/spec> for info about RSS

RSS Content Sample

The screenshot shows a Web Application Developer interface with a menu bar (File, Edit, Perspective, Project, XML, Window, Help) and a toolbar. The main workspace displays an XML document titled "ArsenalMadridScoreEvolution10.xml". The XML content is as follows:

```

<?xml version="1.0" encoding="UTF-8"
  <rss PUBLIC "-//Netscape Communications//DTD RSS 0.91//EN" "http://dmzsrv1.nil.lagaude.ibm.com/RSS/rss-0.91"
    <version>0.91
    <channel>
      <title>UEFA Champions league
      <link>http://wap.uefa.com
      <description>The UEFA Champions League is UEFA's most prestigious club competition. Originally created as the European Cha
      <language>en-us
      <item>
        <title>Arsenal Madrid Score Evolution : Arsenal 1 - Real Madrid 0.
        <link>http://dmzsrv1.nil.lagaude.ibm.com/arsenal.gif
        <description>24 minutes : The deadlock is broken with a superb finish from Henri, who is released by a long-ball from Cole. His cu
  
```

The interface also shows a left-hand pane with a tree view of the XML structure, including elements like DOCTYPE, rss, version, channel, title, link, description, language, and item. At the bottom, there are tabs for "Design" and "Source".

WebSphere^(R) Studio provides the following tools to assist with Web services development

- :
- **Discover.** Browse the UDDI Business Registry to locate existing Web services for integration. The Web becomes an extension of WebSphere Studio.
- **Create or Transform.** Create Web services from existing artifacts, such as Java^(TM) beans, enterprise beans, URLs that take and return data, DB2^(R) XML Extender calls, DB2 Stored Procedures, and SQL queries.
- **Build.** Wrap existing artifacts as SOAP and HTTP GET/POST accessible services and describe them in WSDL. The Web services wizards assist you in generating a Java client proxy to Web services described in WSDL and in generating Java bean skeletons from WSDL.
- **Deploy.** Deploy Web services into the WebSphere Application Server or Tomcat test environments using Server Tools.
- **Test.** Test Web services running locally or remotely in order to get instant feedback.
- **Develop.** Generate sample applications to assist you in creating your own Web service client application.
- **Publish.** Publish Web services to the UDDI Business Registry, advertising your Web services so that other businesses can access them.

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Web Services Basics

This chapter briefly introduces the main Web services concepts

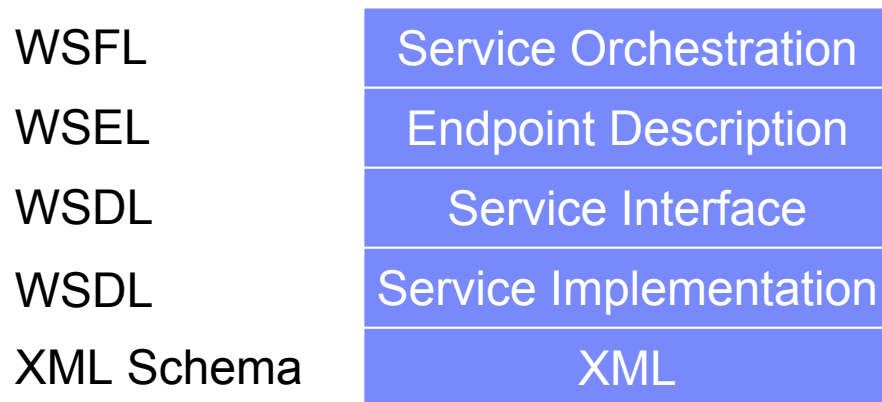
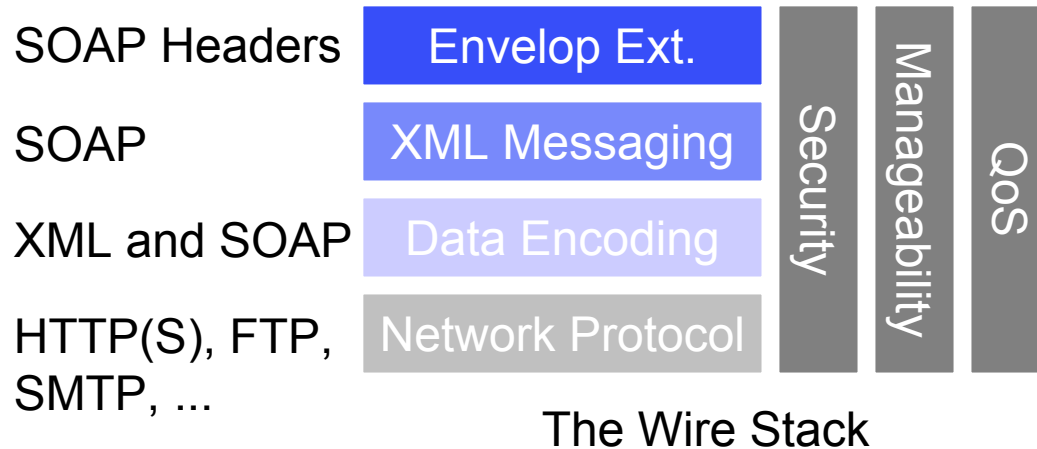
What are Web Services ?

- Web services perform encapsulated business functions
- Functions can be from simple request-reply to full business process interactions
 - Stock quotes/stock charting
 - Credit card verification/payment processing
 - Integrated travel planning
 - RFQ/bid process/auctions
- Can be mixed and matched to create complete process, product
 - Enable dynamic integration with decreased human interaction
 - Both new & extensions to existing applications

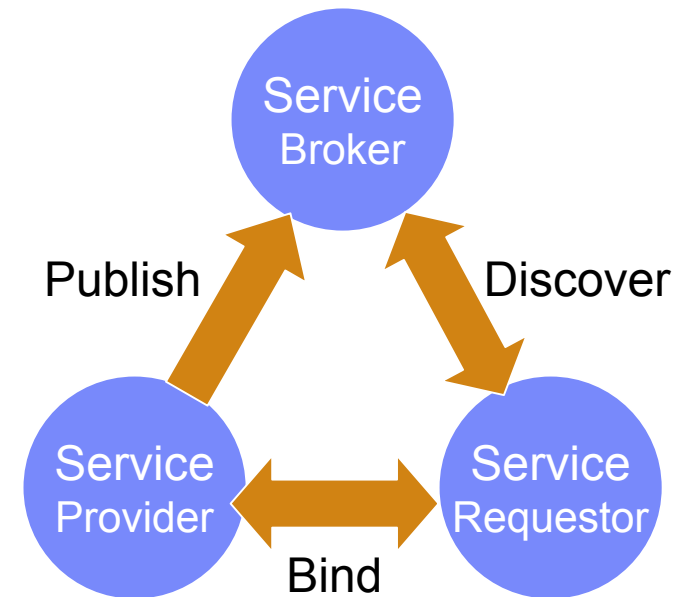
What are Web Services ?

- **Modular** by design because Web services are inherently interface oriented.
- **Described** using WSDL as a service description language.
- **Published** using UDDI by making its description available to potential users.
- **Found** using UDDI by sending queries to that registry and receiving the binding details of the service(s) that fit the parameters of the query.
- **Bound** using SOAP by using the information contained in the service description to customize the connection.
- **Invoked** using SOAP over a network by using the information contained in the binding details of the service description.
- **Composed** using WSFL with other services into new services.

The Web Services Model



The Description Stack



The Service Pattern

IBM Leadership in Web Services Standards

- XML Schema

- Author of the primer and contributor in all phases

- SOAP

- Co-author of specification (with Microsoft)

- Chair of XML Protocol working group in W3C

- First implementation (SOAP4J) contributed to Apache open source project

- WSDL

- Co-author of specification (with Microsoft)

- First WSDL toolkit implementation on alphaWorks

- UDDI

- Co-designer (with Microsoft and Ariba)

- Leader in creation of UDDI project

- Public UDDI Business Registry operator

Resources

- IBM Web Services Site (good architecture papers)
<http://www.ibm.com/webservices>
- IBM developerWorks Web Services Zone (forums and articles)
<http://www.ibm.com/developerWorks/webservices>
- WebSphere Developer Domain (WebSphere articles and code)
<http://www7b.boulder.ibm.com/wsdd/>
- WebSphere Studio Application Developer
<http://www.ibm.com/software/webservers/studio/preregister.html>
- WebSphere UDDI Registry Preview
<http://www6.software.ibm.com/dl/uddi/uddi-p>
- Web Services Toolkit
<http://www.alphaWorks.ibm.com/tech/webservicestoolkit>