Oracle Portal – What it can do for you and the Power of Perspectives

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What is Oracle Portal?

Creating web portals is a fascinating and expanding area of web development – but what exactly are they? A portal can be hard to define because one can look so different from another. So a starting point is that they will usually appear as a web page divided into a number of different areas, as in Figure 1. Each of these areas will display different information derived from different sources. So a portal becomes a user's centralised starting point, presenting information from a variety of sources together on one page. A portal can be like a "desktop" for web-based information.

Fig 1. Example Portal page

Oracle Portal is the tool that Oracle provides for creating web portals. It is a simple, easy to use tool and is primarily wizard-driven. It requires no programming knowledge for basic use, however allows for easy integration of HTML, PL/SQL & Java code if required. It is supplied as a component of Oracle Application Server and has been available since the 9i version of that product.

As it is a web-based development tool, Oracle Portal is purely browser based. Interestingly this means that developing a site and testing/viewing the site are both done using just a web browser. Another interesting aspect is that the complete definition of the site – layout, colours, fonts, access rights etc – are all stored within an Oracle database – with the inherent advantages of database backup and security.

Oracle Portal can be used for a wide variety of purposes, and three important uses are: the presentation of content; providing access to data in a database; and integrating information sourced from other products. Some sites may concentrate on one particular aspect – other sites may use a mixture of them all. The next three sections discuss these uses in more detail.

Content Presentation

An Oracle Portal site, or page group, is made up of various objects but the most important hierarchy, which defines the framework of a site, is that of Pages > Tabs > Items.

- Pages – simply represent each screenful of information – each web page.
- Tabs – allow areas, or regions, of a page to have multiple tabs and present different information to users
- Items – are the basic unit of information on a page.

Fig 2. Portal page with items

Other objects include templates for easy creation of pages; styles for controlling colours, fonts etc; various tools to help users navigate the site; and perspectives & categories for cross-referencing information – the topic of discussion later in this paper. Figure 2 shows a Portal page built mainly with items.

There are various types of items available in Oracle Portal and each item type will reflect the information represented by that item. File items will always have a file behind them. This file could be a Word document or a PDF file or an Excel spreadsheet or many other types of file. When the user clicks on the file item, Portal displays the contents of the file. URL items store

the URL of another page or website, allowing the user to browse that URL. Text items allow us to place portions of text onto the page and the rich-text editor allows in-place formatting. Text items also accept HTML tags, so give the ability to incorporate HTML code into different sections of the page. Other item types allow the incorporation of PL/SQL and Java code. Custom item types allow for the variation of the standard types, or the creation of completely new types.

Creating items is simple and performed via a wizard. Simplicity is important, as adding items is a task that would probably be devolved to key users once the Portal site has been set up.

So items are important when dealing with the content aspect of Oracle Portal as they represent each piece of information.

Data Access

Oracle Portal also provides a wide variety of components that can present data drawn from a database. A number of these components can be linked together to create simple applications for querying, reporting and maintaining data.

Some of these components are:

- Reports – displaying data in a tabular format
- Charts – displaying data as bar charts (Fig 3)
- Forms – input screens allowing data query and maintenance
- Menus – organisation of components into a hierarchical structure
- Links – allow drill-down from one component to another
- Lists Of Values – preset groups of allowable values

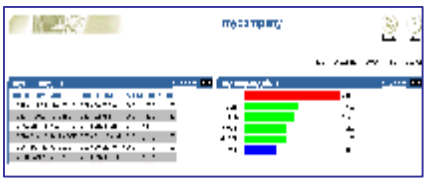

Fig 3. A Portal Report & Chart

When these components have been created, they are automatically published in Oracle Portal as portlets that can then be added to Portal pages. Portlets are programs that are the source of information displayed in the various regions of a Portal page. They may be automatically generated by Oracle Portal, or custom written by a developer.

Integration of Information from Other Sources

Using the concept of portlets, Oracle Portal is able to integrate information from other data sources and products. A variety of other Oracle products now provide portlets that present their data in the format that Oracle Portal can accept.

Some examples include:

OmniPortlet – a portlet which comes provided with Oracle Portal that accepts data from a variety of inputs (CSV files, XML files, SQL queries, web pages & web services) and can produce output in a variety of formats (reports, charts, forms, bulleted lists & news layout). OmniPortet provides a good method of dealing with file based data, as opposed to data in a database, as was discussed above. OmniPortlet also provides a great way of extending the charting capabilities of Oracle Portal.

Web Clipping - a portlet that allows you to incorporate sections of another web page into a Portal page. The web clipping portlet “dissects” the HTML code of the source page to provide pieces that can stand alone. The original site is contacted each time the Portal page is drawn, so this becomes an ideal method for including data that changes frequently, such as share prices or weather forecasts.

Discoverer – Oracle's point & click ad-hoc query tool that produces crosstab analyses and charts of data. Discoverer provides two portlets which allow the integration of workbooks and worksheets into Portal pages, as shown in Figure 4. As Discoverer includes sophisticated charting facilities, including 3D charts, it provides another useful way of extending the types of charts displayed with Oracle Portal.

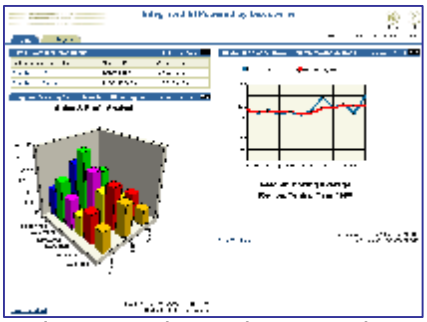

Fig 4. Portal page incorporating Discoverer charts

Oracle Reports – is the sophisticated report writing tool from the Developer suite. It allows the creation of reports of more complex layout, such as group above reports, matrix reports and mailing labels. However these reports can easily be published as portlets and displayed as part of a Portal page.

Using Perspectives and Categories

For an Oracle Portal site to be easy to use, a user has to be able to readily find the information that they are looking for, and this may not be simple once a lot of information has been published on a site. It will depend largely on how the information is structured.

Figure 5 represents a site with information about a gym. There are 15 items spread across 6 different pages in a fairly logical structure.

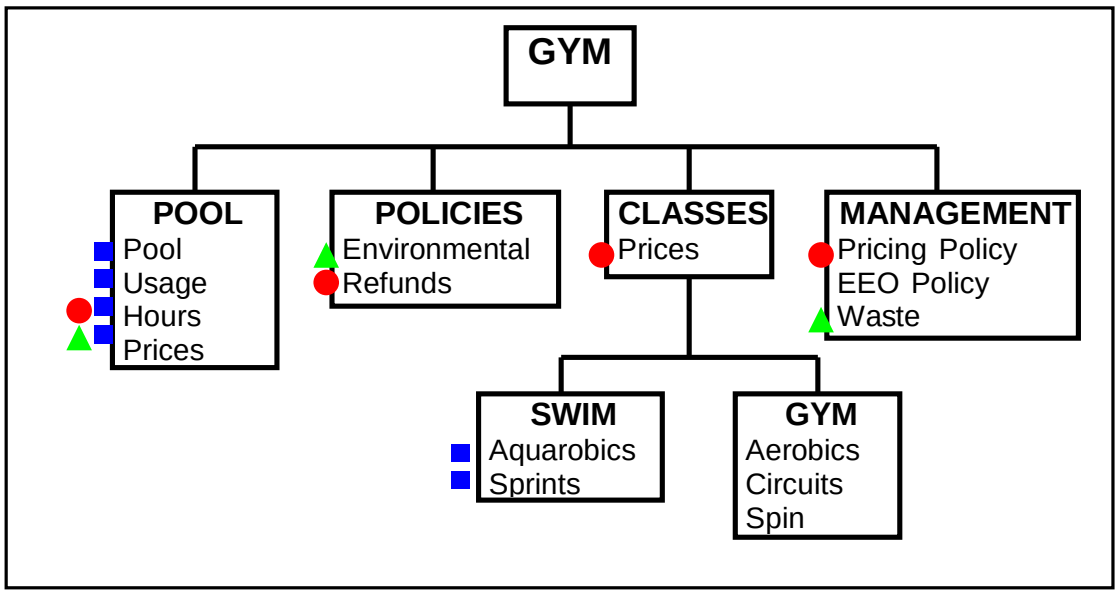

Fig 5. Structure of information about a gym

However someone else might come along and ask, "Why aren't all of the items relating to pricing in one place?" (as marked by the circles) Someone else might think, "Why aren't all the things happening in the pool together?" (squares) and a third person might say that all of the information relating to the environment (triangles) should be displayed in one location.

Now it would be possible to reorganise the items so that there was a page for Pricing, and a page for Aquatic Activities, and a page for Environment but that would mean that all of the information relating to Classes, or Policies, would no longer be together – and surely someone would soon request that! So as different users access the site, they will probably want to seek information in different ways – corresponding to their particular needs. So if you keep reorganising the structure, you can never win … or at least you can never win if you only use one structure.

Wouldn't it be good if we could cross reference all of the pricing items across the many pages and then view them all together? And the same with aquatics items and the environment items, as in Figure 6.

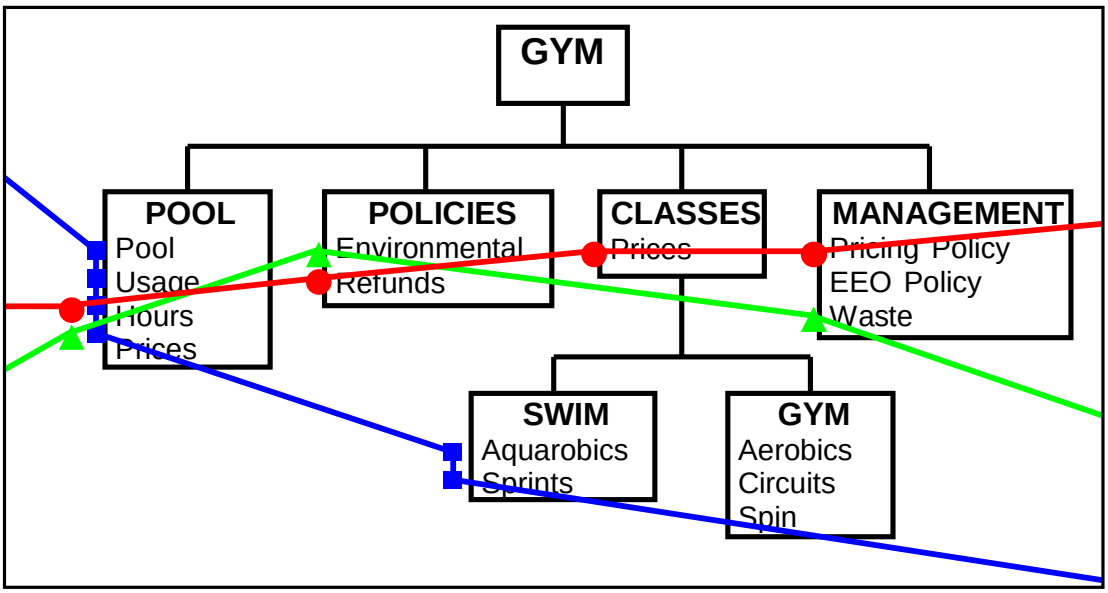

Fig 6. Cross referencing items across pages with perspectives

And that is exactly what can be done with perspectives and categories in Oracle Portal. They allow a content publisher to cross reference all of the items relating to a particular topic across many different pages and then, using a variety of methods, view all of those related items together – effectively looking along the lines of the Figure 6.

So creating a perspective, or category, for each of these topics would allow a user to view all of the items that relate to that topic. A Pricing perspective would present all of the price related items together. Viewing the Aquatics perspective would let the user see all six of the things happening in the pool from both the Pool page and the Swim page, as in Figure 7. Similarly an Environment perspective would display all of those items in one location. The appearance of the results page can also be customised to match the rest of the site.

Fig 7. Aquatics perspective

The structure of the page hierarchy would still be there, so now the user would have the option of viewing the information via pages or via one of the perspectives. In this way categories and perspectives can be seen as alternative organisational structures. Indeed perspectives can have sub-perspectives, which can in turn have sub-perspectives, and so on, allowing perspectives and categories to become alternative organisational hierarchies.

In addition to items, portlets can also be assigned to perspectives and categories, so the information presented by portlets can also benefit from the cross referencing discussed above.

Perspectives and categories both perform the same task and are both created and used in the same way. In fact, there is very little difference between the two types of objects. For brevity, the next sections mention only perspectives but the concepts apply equally well to categories. The differences between perspectives and categories are discussed in the final section of this paper.

Creating and Assigning Perspectives

Creating perspectives is simple and is done through the Portal Navigator. Select the relevant page group; drill down to the list of existing perspectives; and click the 'Create a New Perspective' link at the top of the screen. The properties of a perspective can also be modified – for example to add an icon for that perspective.

Once a perspective has been created, it also needs to be made available in the page group. This is done by editing the page group's properties; choosing the Configure tab; clicking the second Edit link and moving the new perspective to the Visible Perspectives list.

Then when a new item is created (or an existing one edited), the new perspective will appear when editing the item's attributes. Moving the perspective to the Displayed Perspectives list will assign that item to the perspective.

Viewing Perspectives

The whole idea of using perspectives to cross reference items from different pages is to view all of the related items together. This can be achieved in a variety of ways including:

List of Objects – This is a navigation item provided by Oracle Portal which can display a list of pages, categories and perspectives as a series of links or as a drop-down list. If the user chooses a perspective from the list, they are taken to the perspective results page – which lists all of the items in that perspective from all of the pages. The results page can also be customised to the required look and feel.

Searching – Both the Advanced Search Portlet and the Custom Search Portlet allow the use of perspectives as criteria in searches. This means again that all of the items in a perspective are displayed on the results page. However the Custom Search Portlet gives much greater flexibility in the format of the results and where they are displayed.

With the Items on the Page – By editing the properties of the region in which the items are displayed, it is possible to display an icon representing the perspective as part of the item. For example 5 star hotels might have a $$$$$ icon, whereas backpacker hostels might display a $ icon. Clicking on the icon would take the user to a list of all of the other venues of the same rating. Figure 8 shows the example of the Pool page, with a blue dot for the Aquatics perspective and a red dot for the Pricing perspective.

Fig 8. Perspective icons displaying with items on a page

Differences between Perspectives and Categories

So far this discussion has treated perspectives and categories as the same – and for the most part, they are indeed interchangeable. In the example of Pricing, Aquatics & Environment above, any one of them could have been either a perspective or a category, with one important exception…

The major difference between perspectives and categories lies in the number that can be associated with an item. An item may be in MANY perspectives, but can only ever be in ONE category. Also it is mandatory for an item to be in a category (although there is a default category called General) whereas it is optional to use perspectives. This can be summarised thus:

- An item (or portlet) may belong to zero, one or many perspectives.
- An item (or portlet) must belong to one and only one category.

Other minor differences are that items can be grouped on a page only by category and that pages can belong to categories but not to perspectives.

Summary

So Oracle Portal is an easy to use tool for creating web sites. You only need a browser to work with Portal and it saves all of the information and site definition in an Oracle database.

Oracle Portal can be used to create sites of an immense variety of appearances and uses include:

- Presentation of content of a variety of types
- Displaying data accessed from a database
- Integrating data from a range of other sources and products

To aid in accessing information, perspectives and categories provide a method of cross-referencing information across many pages. They can represent any topic, and for the user, they provide additional methods to access the information that they require. To the developer, they can provide alternative organisational hierarchies for the structuring of information.