

Pervasive, Unified Business Intelligence

By Ben Wales, Customer Systems plc

An organisation's data can be key to maintaining its competitive advantage. To maximise the insight gained from this data it is essential to employ the right tools and techniques.

Organisations now demand more pervasive business intelligence, making analytical capabilities available to users at all levels of an organisation by, among other things, removing the complexity that has traditionally been associated with analytical tools.

Growing volumes of data present a further challenge. At the same time, a business intelligence solution must be capable of delivering insight into the data held across many systems and, potentially, many instances of a single system.

presented with a report, the user is not able to carry out any further actions on the report. For example, in our sample situation, it may be useful to see the same information organised by product.

Traditional static reporting does not provide this capability. Some users may attempt to carry out further analysis by copying data into another application such as Excel. However, this tends to create further problems because it results in multiple versions of the same data existing on different users' PCs.

However, these tools have always been more suited to expert users, such as analysts and report developers, who have strong skills in working with this type of analysis and know how to design and develop such reports. In other words, the level of sophistication of the report has always been matched by the level of complexity of its development. This complexity prevents these types of tools from being made available to all levels of user throughout an organisation.

The disparate data source problem

The way organisations store and organise data adds to the difficulty of the reporting challenge. Most organisations have data stored in a multitude of locations in a variety of data sources. As well as a live transactional system, for example, an organisation may also have data stored in Excel spreadsheets, in other databases, in a data warehouse and in archives. However, each of these data sources is optimised for a different purpose. For example, the live transactional database is normally optimised for interactive data entry, while a data warehouse is usually designed to perform best for analysis. Consequently, the data often turns out to be stored in a variety of different formats.

To provide full insight into an organisation's data, a business intelligence tool must provide the ability to carry out analysis across these different data sources. If this insight is to be made available to users of all levels of expertise, then the users must be insulated from the complexity of the technical struc-

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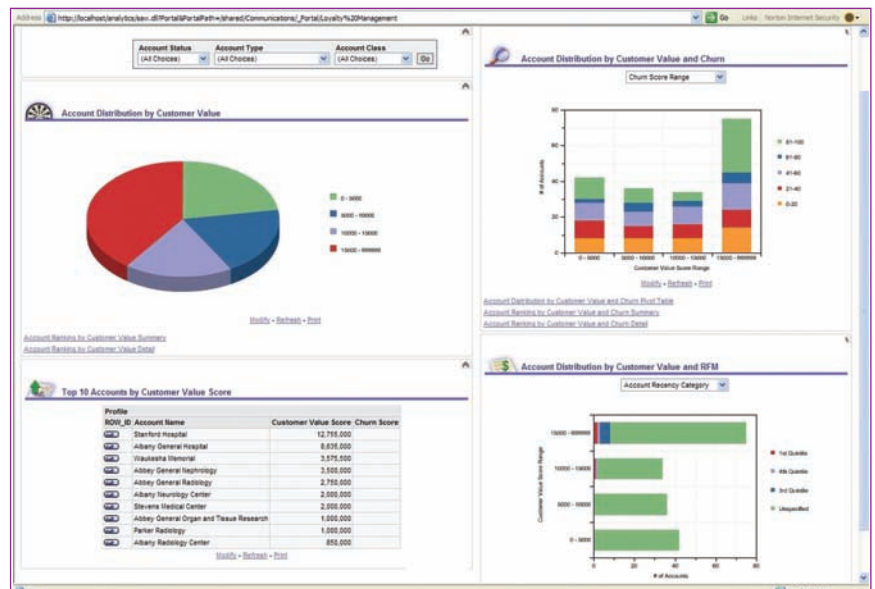
In this article, we will consider this challenge in more depth, before discussing how Oracle Business Intelligence Enterprise Edition (henceforth referred to in this article as OBIEE) can meet it. Then, through a case study, we will illustrate how you can quickly and easily access the benefits offered by this technology.

Traditional reporting: simple but static

Until now, organisations have had the choice of two different types of reporting capability: static reporting and analytical reporting.

For the bulk of users, a list of pre-defined, static reports is made available, from which a user can pick and run the reports they need to answer their particular queries. For example, a user may want to see a list of orders, organised by customer, showing the total order values. From within an application, the user can launch a list of reports and obtain the information they need with just a couple of mouse clicks. This type of reporting is fast and simple, regardless of users' own technical capabilities. It is also perfectly adequate to answer straightforward operational questions such as the one described above. However, once

In order to provide more enhanced reporting capabilities, it has always been necessary to deploy one of a number of analytical tools. Such tools do not have the same limitations as static reporting tools, and enable users to run a report, for example, that shows product sales by region, and then to drill down on a particular product to display the top five orders for that product.



ture underlying the business intelligence tool's user interface. They should be able to ask and answer the queries they need to without paying any attention to which data source they are relying on. A business intelligence tool must therefore present all these disparate data sources as a unified view of the enterprise.

Meeting the challenge: bringing business intelligence to all users

OBIEE is designed to address precisely the challenges outlined above.

From an end-user perspective, OBIEE starts from the basis of a set of pre-defined reports, which users can run quickly and simply. However these reports differ from traditional static reports because they have interactive, analytical capabilities built in. Data is presented in an Interactive Dashboard which can contain multiple reports with features such as reports, charts, tickers, tables and graphics.

Conditional formatting and "traffic light" colours are used to draw the user's attention to problem areas, and drill-down functionality enables the user to immediately see further information on these areas. OBIEE Prompt functionality allows users to quickly slice-and-dice reports on their Dashboard without needing specialist technical knowledge.

For example, an Interactive Dashboard may display a report that shows call answering times across three call centres. This measure may change colour when the average time taken to answer a call exceeds five rings. The user can then drill down on this measure to identify which call centre is causing the problem, and then slice-and-dice the data to try to find the root cause of the problem. For example, is there a peak in the number of calls coming from a particular locality that would indicate a local service issue? This would enable the user to identify the root cause of the problem very quickly, regardless of the level of their systems expertise.

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The result is a highly interactive and analytical approach to reporting without the complexity that would traditionally be associated with this, meaning that analytical power can be delivered to users throughout an organisation, rather than just to a select few who have expert knowledge. OBIEE Answers is the component through which users can build new Dashboards. Compared to previous generations of such products, this tool is relatively straightforward to use, and so makes Dashboard configuration facilities available to a wider range of users than has previously been possible.

Case study: Delivering Business Intelligence Fast

Customer Systems recently implemented OBIEE for a major multinational company. This customer had a requirement to provide its field salespeople with visibility on orders, accounts and other key data. The key aim of this project was to deliver this business intelligence to these users within as short a time span as possible.

After working with the customer to draw up their requirements, we were able to deliver the bulk of the functionality required within just 15 days, which was a third of the time the customer was expecting.

Due to the fact that a key focus of the project was the speed of deployment, the customer had opted to use operational systems as the data source, rather than implementing a data warehouse, because this would mean a quicker implementation overall.

This meant that the implementation relied wholly on transactional data sources, so we had to employ a number of techniques to ensure that the application did not suffer from the performance problems typically associated with reporting against this type of data. For example, one requirement was for a report to show which salesperson owned a particular account. Because of the structure of the transactional system, it would have been necessary to join 15 tables in order to generate this seemingly simple report – with obvious performance implications.

Using materialised views, we created a small data mart within the OLTP database. Data was aggregated using the built-in OBIEE pre-aggregation functionality, which updates automatically and therefore requires no ongoing scheduling or maintenance. Pre-joining of tables also improved performance, and in this way we were able to reduce the run-time of the problematic Account Owner report from 8-10 minutes down to just 2-3 seconds.

Using OBIEE, Customer Systems has brought essential visibility and analytical capabilities to both head office and mobile users, who had previously relied on a collection of Excel spreadsheets. They can now manage targets, monitor order processes, and carry out analysis on key data from one unified system.

OBIEE therefore both extends the number of people who can develop Dashboards, and delivers much more functionality, such as drill-down and slice-and-dice, into the hands of Dashboard consumers.

Meeting the challenge: unifying data sources

Another key strength of OBIEE is the way in which it brings together different data sources and types of reporting in one seamless interface, and makes it readily available throughout the organisation. OBIEE achieves this by mapping all of an organisation's data sources into a single overlaying

logical schema. Data from data warehouses, archives, Excel spreadsheets and other data marts are all unified into a single view which can then be made readily available throughout the organisation.

which could be based on summary data in the data warehouse. They may then drill down through several layers to an individual service request, at which point if they drill further they will view transactional data – whether within OBIEE, or within the original source system where the data is stored.

OBIEE enables organisations to deliver the maximum benefit from the data they hold, by delivering business intelligence which pervades all levels of an organisation, and which unifies a multitude of data sources.

About the Author



Ben Wales is a Divisional Manager at Customer Systems plc, where he is responsible for sales and delivery in a vertical territory. Customer Systems

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