Oracle Business Intelligence – the Past, the Present and the Future

Howard Ong  
Principal Consultant  
Aurora Consulting Pty Ltd

Gabriel Ilarda  
Senior Consultant  
Aurora Consulting Pty Ltd

Abstract
Oracle’s suite of Business Intelligence products has undergone some major transformations through the years. This paper examines the past and unravels the present of Oracle’s Business Intelligence offerings. Viewed through the prism of the past and present, this paper discusses what might be in store in the future. See how past products have led to Oracle’s offering of OBIEE and BI Apps and then look to the future and see what is in store with Big Data, Endeca and Oracle’s BI Cloud Solution.

About The Authors
A frequent presenter at Oracle Conferences and an Oracle BI Foundation Suite Certified Implementation Specialist, Howard has been working on database and tools for the past 20 years and has been working on database technology since 1991. In particular, Howard possesses in-depth experience in the planning and development of Business Intelligence and E-Business Applications. Howard and his team have helped many organisations deploy BI and E-Business solutions using various cutting-edge technologies for many years. For the past 17 years, Aurora Consulting has been delivering Data Warehouses and E-Business solutions to a wide variety of organisations including large government departments and ASX-listed companies.

An IT professional with 15 years’ experience, Gabriel possesses skills across a wide range of tools and technologies. An Oracle BI Foundation Suite Certified Implementation Specialist, Gabriel has been heavily involved with Data Warehousing and Business Intelligence; and has played a key role implementing standards and best practices in these areas for a number of Government departments. With his in-depth skills in DW and BI technologies, Gabriel has devised implementation strategies for DW/BI tools for many clients.

For more information on Aurora Consulting, visit http://www.aurora-consult.com.au or email info@aurora-consult.com.au.
Introduction

In the Data Warehouse and Business Intelligence space, many tools have come and gone over the years. Among the major software vendors, Oracle has the dubious honour of boasting perhaps the most overhauled suite of DW/BI products. This paper examines the past and unravels the present of Oracle’s Business Intelligence offerings. Viewed through this prism of the past and present, the paper attempts to predict what might be in store in the future.

The Past

Since 1990s, Oracle has rolled out successive generations of relational query, ETL and OLAP tools; often seemingly independent of each other – both between the different classes of tools; and between predecessor and successor tools.

Relational Query Tools

*Oracle Browser* takes the honour of being Oracle’s first ad hoc query tool. It was released as part of a suite of custom development products called Oracle CDE (Custom Development Environment), which was the predecessor to Oracle Developer Suite.
Soon after, Oracle released a more sophisticated ad hoc query tool – *Oracle Data Query*. 
Like Browser, Data Query is made for ad hoc query of relational data. In addition, Data Query has an extra arrow in its bow – ROLAP query capability.

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Before long, Oracle introduces *Oracle Discoverer*, probably the most enduring (and endearing) BI tool Oracle has ever released. Since renamed Oracle Business Intelligence Discoverer, Discoverer is in use in many BI implementations till this day.
ETL Tools

Oracle’s first ETL tool took the form of Oracle Data Mart Builder. A contemporary of Oracle 8i database, Data Mart Builder runs off a database repository and provides a graphical interface for ETL development.

With the release of Data Mart Builder, Oracle was able to bundle it with its other existing tools to create its first end-to-end DW/BI product suite – Oracle Data Mart Suite. Data Mart Suite bundled in Oracle Designer as a database design tool; Data Mart Builder as the ETL tool; and Discoverer as the reporting tool.

Data Mart Builder was succeeded by Oracle Warehouse Builder, a more functionally complete ETL tool. Warehouse Builder was probably the last major DW/BI tool that Oracle developed in-house from ground-up (as opposed to acquiring from another vendor). The tenure of Warehouse Builder coincided with a period where Oracle’s DW/BI landscape underwent major transformations, sorely testing the Warehouse Builder’s capability to integrate and interface with other tools. These transformations eventually led to the demise of Warehouse Builder.
OLAP Tools

Oracle acquired the Express products from IRI in 1995. The server component of the Express products comes in 2 flavours – a desktop version (Personal Express) and a server version (Express Server). With a multi-dimensional data store and a matching multi-dimensional procedure language (SPL – Stored Procedural Language), Express was Oracle’s first OLAP product offering.
Oracle then rebadged 2 pre-built query applications that it acquired from IRI as Oracle Sales Analyzer and Oracle Financial Analyzer, giving it the capability to rapidly develop and deploy OLAP applications.

Though named Sales Analyzer, the tool is suitable for analysing any general corporate data.
A pre-built application for analysing financial data, Financial Analyzer is Oracle’s first EPM (Enterprise Performance Management) software.
Not contented with just 2 pre-built applications, Oracle added additional capabilities to its Express products by developing 2 new custom development tools: **Oracle Express Objects** and **Oracle Express Analyzer**.

Equipped with a graphical interface and a procedural language (Express Basic), Express Objects is powerful, versatile and yet rapid to develop. Express Analyzer is a companion product to Express Objects, acting both as a runtime engine for Express Object applications and an ad hoc query tool against an Express Server database.
Collectively, the Express product set offers a highly versatile product line and consequently, Oracle was enjoying significant market share in the OLAP space.

In spite of its huge success in its hay day, Oracle Express is virtually unheard of these days. The reason for Express’ demise can be traced to Oracle’s decision to introduce OLAP capability to its Oracle 9i database in 2002. Marketed as a fusion between Oracle relation database and Oracle Express technology, Oracle OLAP eventually dealt a death blow to Oracle Express without capturing the former glory of the vanquished products.

The introduction of Oracle OLAP was accompanied by Oracle’s embracing of Java as a custom development platform. In line with this, Oracle BI Beans were introduced into Oracle JDeveloper as custom development components for BI applications.
In addition, Oracle Discoverer 4i was enhanced with OLAP query capabilities to query Oracle OLAP.

Furthermore, using a third-party tool, Simba MDX Provider for Oracle OLAP, Excel Pivot Tables can be used to query and manipulate Oracle OLAP data.

So how does this seemingly function-rich suite of products kill off Oracle Express? The reasons are multi-fold:

- Oracle OLAP does not support SNAPI/XCA, the communication protocol used by Oracle Express clients to connect to the server. Without SNAPI/XCA, there is no backward compatibility for Express clients to connect to the new server product.
- Not only is there no backward compatibility, there is also no migration path from the old client tools to the new ones. This is not surprising, given that the old and new tools are based on vastly different technologies.
- The Express Server licences were not transferrable to the new Oracle OLAP product. The customer would have to buy new licences.
- Oracle OLAP is an Oracle Database Enterprise Edition Option. This means that:
  - Express Server customers without pre-existing Oracle Enterprise Edition Database must purchase database licences before they can have the OLAP Option.
  - As per Oracle licence rules, the number of OLAP Options purchased must match the number of Database licences the customer has. Hence, where the customer had (say,) 10 Express users and an Enterprise Edition Database running a 100-user ERP system, the customer would have to buy 100 Oracle OLAP Options on the database just for the 10 Express users to use Oracle OLAP!

In a nutshell, to move to the new platform, Express customers would have to pay a lot more money to get new licences, before they can even contemplate redeveloping their OLAP solution!
The Present

As evident from the preceding section, the evolution of Oracle’s BI offerings over the years has not always been a linear or streamlined progression. After years of in-house development, acquisition and re-badging, Oracle’s currently has a suite of end-to-end BI products capable of matching those of any major vendors in the market.

The current Oracle BI tools are capable to taking any data from anywhere, present in a variety of formats, through any platform. To super-charge this platform, the dedicated BI Appliance Exalytics may be incorporated into the architecture for unparalleled processing power and performance.

Relational and OLAP Tools

At the heart of Oracle’s BI offering is Oracle Business Intelligence (OBIEE), a suite of bona-fide relational and ROLAP products. When Oracle acquired Siebel CRM in 2006, it also acquired Siebel’s BI offering of Siebel Analytics, which forms the backbone of OBIEE today.
OBIEE mainly consists of the following tools:

**Answers**

A powerful reporting tool in OBIEE, *Answers* presents charts and data in visually appealing formats.

**Dashboard**

OBIEE *Dashboard* presents all styles of analysis (ROLAP, MOLAP, scorecard, etc.) across any data sources.

**BI Publisher**

A successor product to Oracle Reports, *BI Publisher (BIP)* has the capability to develop pixel-perfect reports.
Scorecard

Scorecard supports all prevailing scorecard methodologies and is a strategic decision making tool that visualises corporate KPIs.

OBIEE by itself does not have OLAP capability. To address this gap, Oracle bundles OBIEE and Essbase together into a product suite called Oracle BI Foundation Suite.
Built upon the OBIEE products, Oracle provides its ERP customers with a suite of ready-made BI applications for each of its ERP offerings. Marketed as BI Apps, these ready-made solutions added rapid development capabilities to Oracle’s BI and ERP offerings.

**ETL Tools**

On the Extract, Transport and Load (ETL) front, Oracle redefines the methodology by promoting Extract, Load and Transport (ELT) instead.

At the heart of this new strategy are 2 products:

- *Oracle Golden Gate* is a database replication technology for replicating any source database into a pre-staging database within the Data Warehouse infrastructure.

- *Oracle Data Integrator (ODI)* then performs traditional ETL operations on the pre-staging database, transferring data to the Corporate Data Warehouse.
Together, these products form the core of Oracle Data Integration strategy, relegating Oracle Warehouse Builder to a legacy tool.

The Future

The future of Oracle’s BI offering can be summarised in 2 catch-phrase – Big Data and Cloud.

Big Data is the result of the data explosion resulting from increasing amount of data generated by anyone with a smart devise in his/her hand, e.g. sensor data, location data from mobile devices, customer support emails, chat transcripts, surveillance videos, and of course social media.
Oracle’s answer to the Big Data phenomenon is to acquire a data discovery tool and model a data discovery product line around it. The Endeca Information Discovery platform takes on structured data from traditional sources and unstructured data from non-traditional sources; analyses them through a series of complex algorithm; and presents the results as reports, analysis and correlations.

In the Cloud space, we have seen the emergence of several cloud models, chief among which are:

- Software As A Service (SaaS). In this space, Oracle has a product called Oracle Transactional BI - Enterprise (OTBI-E), which is essentially BI Apps in the cloud.
- Platform As A Service (PaaS). In the space, Oracle has just released BI Cloud Services (BICS), which is essentially OBIEE in the cloud. Still in its infancy, the offering is currently without some of the OBIEE capabilities such as BI Publisher and BI Server Administrator; and crucially, without the capability for automated periodic data uptake. At the date of writing, there is yet to be a cloud-based ODI offering.

**Conclusion**

In the evolution of its BI offering, Oracle has taken many 2-steps forward and many 1-steps back. After years of endless shuffling, Oracle’s current offerings are not only a refreshing change but in fact look promising. However, it remains to be seen whether Oracle can formulate a set of marketing and pricing strategies that do not undermine its impressive suite of product offerings.