



ORANGE NETEZZA IN ACTION

Orange and Netezza: Dealing with the Business End of BI

When Orange UK found its existing data warehouse systems straining under almost 3 TB of data, it called on Netezza to breathe new life into its infrastructure.

Business Intelligence (BI) systems are designed to manage and leverage vast amounts of corporate data and do it quickly. However, as that data grows in volume, the underlying infrastructure can become strained, performance can suffer and data latency becomes a significant issue. When Orange UK (Orange), the UK's most popular mobile phone service, encountered this problem, it worked with Netezza to reinvent its data warehouse infrastructure. In 2003, Orange became the first organization in Europe to power its data warehouse systems with data warehouse appliance technology, pioneered by Netezza. Reputed for its innovation and creativity, the mobile telecommunications operator has reinforced this by using Netezza's 'data warehouse in a box' to analyze billions of Call Detail Records (CDRs) in a fraction of the time and for a fraction of the cost of other systems.

Orange's Business Challenge

Orange uses BI tools from SAS and Business Objects to analyze data for Customer Lifecycle Management (CLM) purposes. The company optimizes its data warehouse by regularly restructuring it to answer additional questions. This enables it to evaluate different business sectors on an ongoing basis.

Orange's data warehouse served it well, but the supporting infrastructure had been an issue. Orange had a 2.8 TB warehouse with 215 tables, of which the largest was 800 GB. The company had used Informix XPS on Sun E10000 servers and EMC storage to deliver this data to its BI tools, but the Sun-based system wasn't designed to handle this level of constantly growing and changing information.

The proliferation of data and more sophisticated analysis had almost paralyzed Orange's systems. Queries would often take 12-24 hours to run against the Informix system. Back-ups took days to complete. The combined effect of business user complaints, and queries frequently falling over and timing out, alerted Orange to the technical constraints of its data warehouse.

Seeking improvements in performance and a lower cost alternative to traditional data warehouses from vendors such as IBM and Oracle, Orange turned to Netezza to unify its server, database and storage functionality in a single, purpose-built data warehouse appliance. The new system allowed the company to broaden and deepen its BI efforts without modifying its existing software tools, boosting performance and preparing Orange to keep pace with rapidly rising data volumes.



Application:

- Customer Lifecycle Management

Benefits with the Netezza System:

- Reduced BI data latency – from 6-8 weeks to 1-2 days
- Dramatic increase in responsiveness to business users
- More effective identification and capture of fraud and cross-carrier billing
- More targeted offers
- Significant data center savings – the number of cabinets spaces has dropped from 26 to 9 and the data warehouse is now over 70% more power efficient

“Since we first installed the Netezza system, we have added at least half as much data again to the database, yet still achieve the same speed of response. Performance doesn't seem to be affected no matter how much data we throw at it!”

Sylvia Sawkins
Manager of Data Control
Orange UK

The mobile telecommunications operator undertook proof of concept projects with three vendors: Teradata, IBM (DB2) and Netezza. The DB2 system under performed and was quickly dropped from consideration. Teradata ran most of the queries five times faster than the existing Informix system, but Netezza ran queries up to 200 times faster.

Thinking Inside the Box

Orange deployed two Netezza systems. At the heart of the Netezza system is a patented streaming architecture design that optimizes the flow of information by placing silicon processors in close proximity to the storage device. This streaming design intelligently filters and processes records immediately as they come off the storage disk, bringing over only the relevant information for each query. This design has enabled Orange to realize better query performance using more data, while also providing improved power and cooling usage over traditional data warehouse systems.

Orange initially used one of the Netezza systems as a development environment. It took two days to install, and over the next eight weeks, additional load routines were developed to populate the system host. After success with the first system, the company spent four weeks migrating to a second system for its production environment. The Informix tools that had previously processed, accumulated and loaded the data into the data warehouse were replaced with software from data specialist Ab Initio.

Two consultants from consultancy firm Emunio undertook the Ab Initio ETL integration work. They sat on a 12-person BI team which also included a consultant from Infogain who handled management scripts, monitoring and administration for the initial deployment prior to ETL superseding the Informix elements.

Orange used a combination of the NetBackup software solution from Veritas and formal backup tools from Netezza to manage data backups as part of its Netezza deployment. Netezza assisted in connecting its systems to the Veritas solution and achieving full data recovery capabilities.

Faster Data

Orange gained several significant benefits from its partnership with Netezza, in the areas of performance, data quality and data center space. The number of queries that could be put through the previous system was very low because of the poor performance. These queries would take 12-24 hours on the company's previous Informix system. Orange is now able to perform an average of 1,800 complex queries per week against its BI systems. Using the Netezza system, the average query run is up to 90 seconds. Over 99% of queries queue for less than 3 seconds.

“Since we first installed the Netezza system, we have added at least half as much data again to the database, yet still achieve the same speed of response,” explained Sylvia Sawkins, Manager of Data Control at Orange. “Performance doesn't seem to be affected no matter how much data we throw at it.” Having slashed the latency of its BI data from six to eight weeks to one or two days, the BI team has been able to dramatically increase Orange's responsiveness to business users. Sawkins continues, “Improving query performance has increased the quality of output and business decision making. Customer intelligence and senior management teams used to make decisions based on data that was eight weeks old – which they quite rightly identified as pointless! Now they have the same report daily.” The attention that it can now devote to customers has been a fundamental factor in the success story of the Orange/Netezza project.

“Improving query performance has increased the quality of output and business decision making. Customer intelligence and senior management teams used to make decisions based on data that was eight weeks old – which they quite rightly identified as pointless! Now they have the same report daily.”

Sylvia Sawkins
Manager of Data Control
Orange UK

Responding to Customer and Market Demands

The improved speed of data analysis fits neatly with Orange’s business objectives related to customer service. The company can now analyze billions of call detail records to capture fraud and cross-carrier billing. Its new system has supercharged data mining on valuable customer records, allowing the company to offer deals to boost revenues and effectively tackle market issues or trends. The objective of the data warehouse is to provide historical data to various business functions to ensure that customers are targeted accurately. It must ensure that the highest value is obtained from each customer while retaining as many customers as possible. The reduced latency when querying data means that analysis for targeted marketing is far more accurate and therefore more effective. Additionally, users with a financial role can now use the data to help understand the current value being obtained from each sector of the marketplace and how that relates to Orange’s operating costs.

Significantly Increased Data Center Efficiency

Even as the amount of information stored in Orange’s data center continues to grow, it has managed to reduce its equipment footprint. The new infrastructure in the data center has seen the number of cabinets spaces drop from 26 to nine. With complexity and floor space now seen as two of the biggest costs facing IT departments, Netezza has helped Orange to prepare itself for future growth.

One of Orange’s Senior Data Center Engineers explains, “Space and power are always at a premium within our data centers. The Netezza solution saved large amounts of both while providing increased performance. The speed and ease of deployment were an added bonus.” The cost savings made through greater energy efficiency may appeal to most IT departments, yet the real issue is the feasibility of increasing performance in the data center while finding the power and space for cooling equipment to support it. Orange has achieved just this, as illustrated in the table below.

With its previous Informix/Sun/EMC 1.5 TB configuration, Orange was consuming almost 25,000Watts (W) and 85,000 British Thermal Units (BTU) per hour. Once Orange implemented a 3 TB Netezza data warehouse appliance, its power consumption dropped to 7,000 W and 24,000 BTU per hour. With Netezza, the data warehouse at Orange is now almost three times more power efficient. Additionally, it now uses approximately one third of the Watts it used to, and has also reduced its cooling requirements by about 72% – in both BTU and Watts.

	Netezza	Informix
Power – Watts	7,000	24,000
Power – BTU/hr	24,000	85,000
Cooling – Watts	7,200	25,00
Total Watts	14,200	50,400
Orange Data Center Power Efficiency	72% more efficient	

Dialing Up a Data-Rich Future

Now that the Netezza appliances have helped Orange to solve the problem of timely data access, it can turn its attention to other business challenges. "The system started by making our lives easier, this led to an ability to handle a greater capacity. Culturally, now the business demands more from its data, expectations are set much higher, so there's a great focus on quality," Sawkins says. The goal: data that is not just faster, but better. Orange's Solution Delivery team drove the need for change and was instrumental in selecting the Netezza system as an alternative to mainstream accepted BI technologies. Solution Delivery still continues to take the main role in developing the product and in getting the best use from the technology and the associated supporting technologies.

A steering group directs the developments on the data warehouse and defines the correct priorities for any development. Strategies have been drawn up to define data marts and to align the data warehouse at a corporate level for all data generated in a project. This data will then be made available within the warehouse so that it is available for analysis against the existing data. Thanks to the ease of deployment of the Netezza system, Orange has supported its own business growth with a demonstrable commitment to Netezza since 2003 and adopted a process of smooth upgrades. Orange considers the Netezza systems entirely scalable to its expanding operational requirements. Orange is now developing an architecture that will place the data warehouse within the customer lifetime management cycle, serving data from the front end customer services systems to the back end BI systems. It will become an integral part of the end-to-end architecture and the decision making process for customer lifecycle management. (N)



Netezza Corporation 26 Forest Street, Marlborough, MA 01752 +1 508 382 8200 TEL +1 508 382 8300 FAX www.netezza.com

About Netezza

Netezza (NYSE: NZ) is the global leader in data warehouse and analytic appliances that dramatically simplify high-performance analytics across an extended enterprise. Netezza's technology enables organizations to process enormous amounts of captured data at exceptional speed, providing a significant competitive and operational advantage in today's data-intensive industries including digital media, energy, financial services, government, health and life sciences, retail and telecommunications. Netezza is headquartered in Marlborough, Massachusetts and has offices in North America, Europe and the Asia Pacific region.

For more information about Netezza, please visit www.netezza.com.