

Oi Increases Revenue, Market Share, and Customer Loyalty by using Informatica to “Keep It Simple”

“Our competitive advantage is the ability to mix bundles, combining wire line, wireless, broadband, and television. This increases customer loyalty and reduces churn. But we needed a single view of the customer and faster updates to our enterprise data warehouse to support these programs. Informatica gave us the single platform we needed. It has also given us agility to so we can continue to lead in our market.”

Vera Duarte, Enterprise IT Manager, Oi



Oi (pronounced ‘oy’) is the largest telecommunications company in Brazil with annual revenues of USD 14.5 billion, more than 31 million customers (Dec/07), and 10,000 employees. Being the largest, however, is not sufficient for Oi, their objective is to be the best service provider in Brazil.

BUILDING AN INFRASTRUCTURE FOR GROWTH

Data—managing and accessing their data across a disparate array of databases and other sources—is a critical part of the Oi strategy to achieve their goals of growth through superior service:

- Marketing and Sales needed a “single view of customer” in order to drive and manage up sell, cross sell and other marketing campaigns.
- Customer service required a “single view of customer” to respond quickly to customer requests.
- Product management needed the integration of various systems to bring products and services to market quickly and to support them effectively.
- Management needed an up-to-date and comprehensive data warehouse as the foundation for their business intelligence to respond to changes in the market conditions and opportunities with nimbleness.
- Management also needed high performance transmission of data to minimize fraud and comply with mandated service level agreements.
- All areas needed to ensure support for company growth with a consequent continuous increase in data and the need to integrate it.

OI IT RESPONDED QUICKLY AND COMPREHENSIVELY.

Oi IT delivered not only a single view of customer; they delivered a single view of household by integrating data from the wireless operations with systems from the sixteen distinct land line companies to build a 20 terabyte data warehouse.

This data warehouse provides the business intelligence foundation they need to compete effectively. To support products, services, and programs, they integrated multiple systems such as Arbor billing, Siebel CRM, and in-house billing and CRM mainframe systems – all operating on heterogeneous technology platforms – and provided near real-time updates to these systems to ensure service level agreements with customers.



“OI, SIMPLES ASSIM”

“Oi, as simple as that” – That is the Oi promise to its customers.

Oi, however, is a study in complexity. In 1998, Brazil privatized its telecommunications companies. Sixteen companies, operating as monopolies in sixteen Brazilian states, merged to form Telemar, a single private entity competing in an aggressive open market. In 2002 Telemar launched Oi as their mobile branch with independent operations. Three years later, Oi merged operations with Telemar, and Oi emerged as a full service telecommunications company.

Oi’s challenge: How do you make a highly complex structure look simple to the users of your data and, most importantly, to your customers?

HOW DO YOU MAKE YOUR BUSINESS AS SIMPLE AS SAYING HELLO?

“Oi” means “Hi” in Portuguese. Ideal for a telecommunications company. Simplicity is consistent with the promise of the Oi brand.

The Oi competitive advantage is their ability to mix bundles – wire line, wireless, broadband, and television. The attractiveness and simplicity of these bundles helps increase customer loyalty.

But to be effective at this strategy, Oi makes their business both manageable internally as well as simple for the customer. That has required a high performance, scalable, flexible technology infrastructure, capable to support all the required integration of information from widely divergent formats and origins.



Oi’s competitive advantage lies in their ability to mix bundles.

The Oi Strategy for Growth through Service

In 2001 / 2002, Telemar, the Brazilian telco, brought in Informatica to consolidate and integrate systems from sixteen state companies that had operated independently before 1998. The challenging project required integration of information from a widely disparate set of sources with divergent formats and origins.

After Telemar and Oi merged operations in 2005, the new entity (called simply “Oi”) immediately sought to increase revenue and market share through service differentiation.

Oi saw a competitive advantage in its ability to mix convenient bundles -- wire line, wireless, broadband, TV -- to attract customers and provide superior service. The Informatica PowerCenter® platform was critical in supporting the new business requirements.

INTEGRATED DATA – THE FOUNDATION FOR BUSINESS INTELLIGENCE

The foundation for success was an integration of two critical customer databases, wire line and wireless. The goal is to provide “a single view of customer” to improve business intelligence regarding customers and products. This will support sales and marketing efforts to drive revenue and increase market share.

“We were sixteen different wire line companies, and then we added a wireless company—we had to understand the portfolio of the customers from all these companies,” explained Vera Duarte, Enterprise IT Manager for Oi.

The objective was to have efficient operations with the right information in near real time to provide the best service in the marketplace.

Oi’s IT group took on the challenge, responding quickly and comprehensively. They built a right-time enterprise data warehouse (EDW) to provide the business intelligence required to compete aggressively.

Informatica PowerCenter underpinned the twenty terabyte Teradata-based EDW and integrated data across multiple systems to support new product initiatives.

The IT group also provided a “single view of household” beyond the required “single view of a customer”.

“We needed to identify the complete portfolio of each customer and see each customer as a single consumer for different products and services and not as two or five different customers”, said Ms Duarte.

Today, this platform is running successfully, collecting and delivering information that was once scattered across Oi’s precursor companies, Informatica updates a terabyte of data daily in a lightening fast five hours. This robust right-time infrastructure can scale to support growth and contributes to increasing customer satisfaction index.

Armed with the intelligence provided by this infrastructure, Oi has launched aggressive marketing campaigns to capture new customers and increase its share of wallet with existing customers by offering additional products and services.

Many of those products would not be feasible, sometimes impossible, to offer without the right-time data integration and delivery provided by the infrastructure.

A case in point is a highly successful program called Oi Controle, a service plan with limited consumption established by the customer. Please reference the story on the opposing page “Case in Point – Oi Controle”.

This is just one of many programs that will continue to be rolled out and supported by the overall initiative and its resulting infrastructure.

The Informatica integration platform has impacted not only Oi customers with improved products and services; it has also assisted the company across the board in improving operations and decision making, from C-level executives, VP’s, and directors, to managers, supervisors, and line workers.

SUPPORT FOR CUSTOMER SERVICE

Once you increase your market share, you can easily lose the new business if you are not equipped to handle the consequent increase in data volume.

“We needed to provide a robust infrastructure to support the expected growth,” says Ms. Duarte presciently. “We didn’t want to risk wasting all the effort of our marketing and sales people.”

But Oi was prepared. By using the Informatica Pushdown Optimization option, Oi slashed warehouse loading process time in half, from ten hours to five. The Pushdown Optimization option allowed PowerCenter to recognize cases where Teradata would be faster, and “push down” the related processing into the Teradata engine.

“This performance improvement allows us to provide quicker answers to the marketing and sales teams; they now have updated data at their fingertips faster, combining wire line and wireless operations, to constantly refresh a single view of the customer,” concludes Ms. Duarte.

OPERATIONAL EFFICIENCY

As an added bonus, even as Oi IT was investing in other components of their data integration infrastructure, they also shortened development cycles. “The high level of operational efficiency we have today would not have been possible without the performance improvements we gained from the PowerCenter platform”, says Ms. Duarte confidently. “It allows us to do more with less.”

After privatization, Oi (Telemar) merged the customer data from sixteen state telcos and a wireless company into a single 20 TB data warehouse to support business intelligence that allows Oi to provide superior service to its growing customer base.



Improved Decision Support for Sales and Marketing

Sales and Marketing rely on the data warehouse for getting the information they need to promote marketing campaigns, launch new products and services, and identify new business opportunities.

As the company grows, the volume of data generated by the operation increases dramatically. This data, reflecting the day to day operation of the company, is the source of important market and customer insights.

As the data volume increases, the time to consolidate and load this information into the data warehouse is likely to lengthen. That would be intolerable in the highly competitive telco industry; near real time information is crucial to keep a lead in the market. The performance of the old data warehouse architecture was slowing down the data needed to carry out the planned programs.

In 2006, Oi took an innovative approach. Working with Accenture, Teradata, and Informatica, they redesigned the data warehouse architecture to reduce the time delay in making information available to the users and line of business, including sales, marketing, customer support, product managers, C-Level, and others throughout the company.

The Informatica platform provides the foundation to improve the analytical capabilities of their business intelligence and at the same time has increased the scalability, stability, and flexibility of their platform. See Figures 1 & 2 below.

“The operational management of the entire process has become simpler and more robust, giving us an integrated view across the entire process. In our market, competition is very strong and very aggressive. In our country, there are three strong players, so it is key to create and deliver competitive solutions to the market quickly in order to sustain our growth.”

Bruno Rodrigues, System Integration Manager, Oi

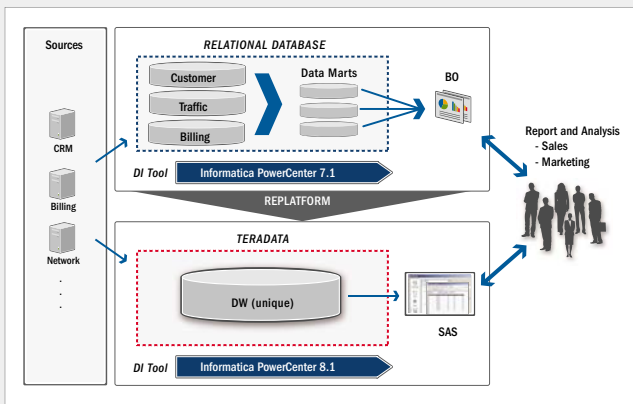
BENEFITS

- Latency time for propagation of data to the enterprise data warehouse was reduced by more than 50%, improving the speed and quality of the decision process.
- Duplicate data was eliminated.
- The volume of historical data made available to the users was increased by 20%. This expanded data has helped Oi plot and identify market trends and potential opportunities, such as cross-selling and up-selling.

BUSINESS IMPACT

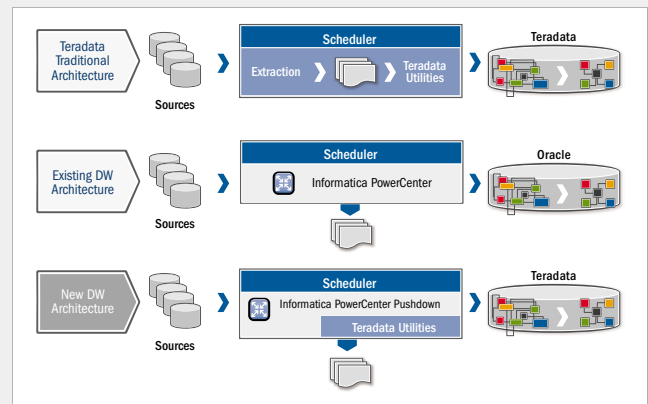
- Management and business analysts make better decisions with the availability of more accurate and more up to date information.
- Improved analysis is possible with the support of a more powerful analytical tool.

Figure 1. The Data Warehouse Replatform Project



The original data warehouse - using a relational database, a series of data marts, and a BI Reporting Tool - experienced serious performance problems (top box). The new enterprise data warehouse combines the advantages of Teradata processing power with the Informatica data integration platform, Informatica Metadata Manager, and the resulting developer productivity.

Figure 2. The Innovative Approach



Oi took an innovative approach to its data integration platform and achieved optimal performance. With the Pushdown Optimization feature of Informatica, they guaranteed that, once the data was loaded into Teradata, it would never be extracted, so it would never need to be reprocessed. This approach allowed them to obtain a significant gain in performance along with an improvement in developer productivity. All the benefits of PowerCenter Metadata Manager now can be applied, showing the full lineage of data, improving both development and audit procedures.

Regulatory Compliance - Maintaining Mandated Service Levels

In 2007, the Brazilian Telecommunication National Agency (ANATEL, Agência Nacional de Telecomunicações) established numerical portability as a requirement with implementation across the entire country by March 2009. Numerical portability allows the users of wire line and wireless telephony to keep their telephone numbers even when they switch service from one telco to another. ANATEL chose a model that uses a central and independent administrative entity to operate the portability. To manage the process, two types of databases are maintained, the National Reference Database (BDR) and operational databases (BDO). A BDO is located in each individual telco with data relevant to their customers. The BDR is managed by the administrative agency which updates the BDOs to allow the forwarding of calls, irrespective of which company is the origin or destination. It is the responsibility of the telcos to offer updates to the BDR in the proper format, and the administrative entity releases relevant information to the telcos which they must adapt to their databases.

The architecture to manage these updates must handle complex regulatory standards regarding formats, structures, types of data, etc as defined by ANATEL. Any change registered in the a telco's BDO - such as contract termination, possible fraud, address changes regarding wire line, wireless, Internet service - must be updated in the BDR. ANATEL established a mandatory SLA of six hours from the moment the change occurs until the update is reflected in the BDR.

For Oi, the relevant data is divided between two databases, mobile customers in Oracle and wire line customers in Adabas. Adabas does not allow an incremental data extraction process and the architecture initially proposed forecasted a timeframe of thirteen hours to process and deliver the data to the BDO, well over the SLA. (See Figure 3).

Oi sought an internal timeframe of three hours in order to maintain a secure cushion to absorb problems in the process. They met the challenge with Informatica PowerExchange for Adabas and its Change Data Capture (CDC) feature. CDC shortened the extraction and transmission time to the three hour internal requirement. (See Figure 4).

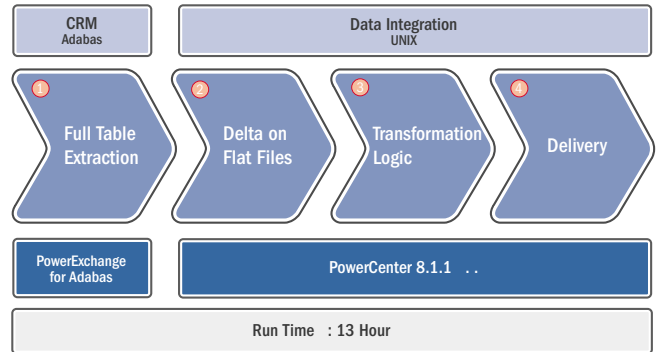
BENEFITS

- Reduction of time to deliver data to the regulatory agency
- Extra time available to improve and implement modification in the system, if required.
- Operational efficiency

BUSINESS IMPACT

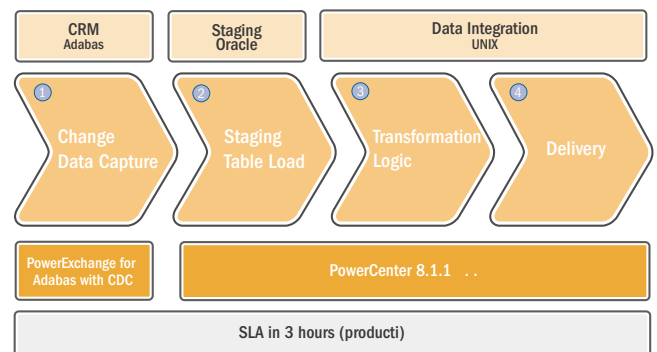
- Regulatory compliance

Figure 3. Original Capture of Changes and Transformation



In order to promote the numerical portability and contribute to fraud prevention in roaming operations, the Telco National Agency (ANATEL) in Brazil requires members to report a customer occurrence within six hours of its generation. But Oi's legacy database for wire line was a problem. Adabas did not allow incremental data extraction. The steps required to deliver the data were arduous: full table extract, processing against that table to separate the deltas, transformation to the Signus format, and finally delivery - a grueling thirteen hours.

Figure 4. Meeting SLA Requirements with Change Data Capture



Informatica PowerExchange for Adabase accesses Adabas directly and non-invasively, and the Change Data Capture feature detects changes as soon as they occur and transfers only the changed data to be consolidated in an Oracle database. Once the process was simplified within the complete Informatica platform, the time was reduced from 13 hours to 3 hours, meeting the aggressive internal Oi SLA and providing a cushion of time to recover in case of problems.

A Case in Point - Oi Controle

In 2004, Oi launched a program branded Oi Controle. It combines a post-paid service invoicing plan with a limited consumption plan established by the customer.

It is designed for customers who want to manage closely the monthly cost of their telephone usage. The customers define a credit in advance that will be paid periodically as a post-paid service. The credit is applied to their accounts for service up to the defined limit. This control is executed by the pre-paid network and systems.

At the end of a period, an invoice is generated and once the customer pays it, the Arbor billing system is updated. The billing system must propagate this information to systems such as Siebel CRM.

To support the program, Oi implemented operational data integration. The Informatica PowerCenter® platform links Siebel CRM, Arbor post-paid billing, and an in-house pre-paid system. After the first billing period, the billing system flags customers eligible for a credit recharge, the recharge notice is validated against business rules in the CRM system, and the notice is sent over the pre-paid system/intelligent network to enable recharge for voice and data services. (See Figure 6.)

All three critical systems – Siebel CRM, Arbor Billing, and Network Usage Control – operate on heterogeneous technology platforms. The uniting factor is Informatica PowerCenter.

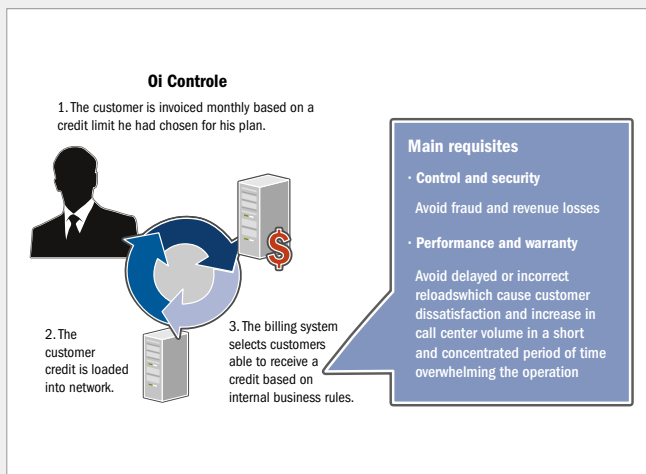
According to Bruno Rodrigues, “Through the use of PowerCenter, it was possible to unify the information systems of Oi Controle improving the service level offered by the IT group to the billing department, which is responsible for managing the process of invoicing, collection, and credit recharge.”

The previous invoicing model involved various non-integrated processes that were cumbersome. “This new operational management for the whole process has become more robust and simpler; and it provides an integrated vision of the different phases”, adds Rodrigues.

As a consequence, Oi enjoys a 60% reduction in time-to-execute the credit recharge process and a 400% increase in response capacity. Oi Controle customers are able to use their credits on schedule while the company has been able to respond to the ramping demand for new customers and for recharging, thus helping to drive the on-going success of the Oi Controle program.

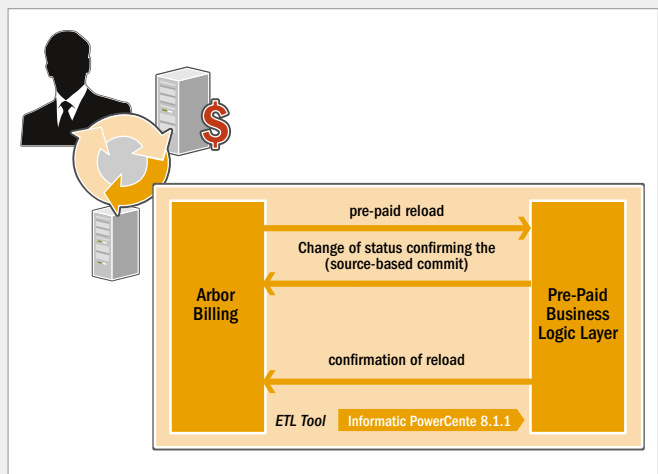
Oi enjoys a **60%** reduction in time-to-execute the credit recharge process and a **400%** increase in response capacity.

Figure 5. Oi Controle – The Challenge of Customer Satisfaction



Oi Controle is a hybrid billing model offering the customer the convenience of post-paid minutes combined with the real-time consumption control of a pre-paid platform.

Figure 6. Oi Controle Powered by Informatica



A two-way interface between the post-paid billing system (Arbor) and the pre-paid business logic layer is made possible with Informatica PowerCenter. A process for operational control was specifically developed to allow end-to-end tracking of all reload requisitions.

BENEFITS

- Improved reliability with a single data integration process and automated tracking of transactions
- Increased developer productivity over hand coding in C, Java, and PL/SQL
- Better control and “end-to-end” integration among the three different systems that support the Oi Controle program, providing the capacity to respond to the hundreds of thousands of recharge notices processed and requested monthly.
- Performance improvement in the search and verification process of customer data, allowing the information of the CRM base to be collected and processed quickly and efficiently.
- Time reduction of 60% to execute the credit recharge process. Previously it had taken 4 days.
- Security improvement through the use of an integrated and automatic process, reducing the possibility of error.

“If we don’t meet our clients’ service level agreement, our clients don’t talk. And for a telco company, a client that doesn’t talk isn’t a client. Informatica PowerCenter with PowerExchange helps us deliver service to our clients in near real time. And that helps us keep our clients happy.”

Bruno Rodrigues, System Integration Manager, Oi

- Improvement up to 400% of the capacity to respond to the recharge notices, supporting, comfortably, the growth rates expected for the product Oi Controle.

BUSINESS IMPACT

- Ensured customer satisfaction with guarantees that customers will receive the service promised at the time promised
- Ability to support business growth with complete reliability

Ensuring Scalability to Support a Critical Program

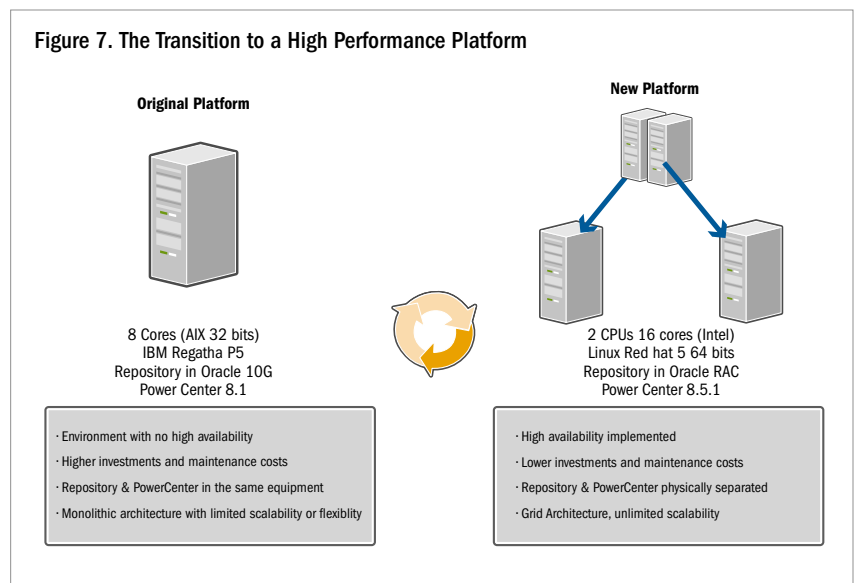
At the time of its formation in 1998, Oi was not allowed to provide service outside a limited region, but in 2007, the market opened beyond its designated sixteen states. As the result of a public auction, Oi received the right to expand its services into the country’s largest state with a market of more than 50 million people.

Oi redesigned their technology infrastructure to support the strong growth of data volumes expected from expansion into this lucrative market.

They implemented the Enterprise Grid Option of PowerCenter 8.5 and migrated to a Linux server, putting the repository in a separated machine (Oracle RAC), to improve the reliability of this service and providing the flexibility required to support the expected growth in data volumes and performance.

Using Informatica, Oi processes 150 million Call Detail Records per day, while meeting the SLA of less than 48 hours. They are comfortable that the Informatica platform will accommodate the forecasted three-fold growth in volume over the next 12 month period.

Figure 7. The Transition to a High Performance Platform



BENEFITS

- Scalability of the data integration infrastructure

BUSINESS IMPACT

- Ability to serve the lucrative 50-million person Sao Paulo market

Growth Through Agility

AMIDST DRAMATIC CHANGE

Oi is a success story about agility. After merging sixteen independent monopolies into a single privatized entity, they competed successfully on the open market. Today, Oi is the largest telecommunications company in Brazil.

Their strategy has been customer satisfaction combined with superior business intelligence. To accomplish this, hundreds of billions of pieces of data had to be integrated to provide a clear view of the enterprise and a single view of each household that Oi serves.

MARKET DATA	Unit	2007	2006	2005	2004	2003	2002
Total Lines in Service - Wire line	Thousand	14.220	14.388	14.858	15.216	15.147	15.075
Total Lines in Service - Wireless	Thousand	15.980	13.078	10.343	6.863	1.893	1.401
ADSL in Service	Thousand	1.518	1.128	805	496	217	50
Employees	One	9.936	7.098	7.566	9.181	9.658	10.287
FINANCIAL DATA							
Net Revenue	R\$ Million	17.584	16.872	16.747	15.842	14.003	11.874
Net Income	R\$ Million	2.358	1.310	1.114	751	213	(416)
Net Debt	R\$ Million	2.681	4.883	6.083	6.542	7.834	9.121

ENGINEERING THE AGILITY TO RESPOND TO CHANGE

Oi converted from sixteen state monopolies to a single private entity competing on the open market. Today, it is the number one provider in its market. Their strategy – good service, good data. Behind that strategy – a scalable, high performance technology infrastructure.

BUSINESS INITIATIVES	TECHNOLOGY STRATEGY	BENEFITS	SOLUTION
<ul style="list-style-type: none"> • Improve business intelligence about customers, products, and revenues to enable the development of programs suitable to specific market segments • Increase revenue and market share with a single view of household to enable cross-selling and customer loyalty • Provide the best service in the marketplace by maintaining stringent service level agreements with customers • Regulatory compliance 	<ul style="list-style-type: none"> • Integration of data from sixteen companies to provide end-to-end visibility and integration across multiple diverse systems • Update of customer information in near real time to enable critical programs 	<ul style="list-style-type: none"> • Flexibility to change the data integration process according to market requirements • Scalability to support growth in data volume • Performance capacity to support service level agreements with internal and external customers • Confidence in the ability to support changes in corporate initiatives • Improved data quality through a single data integration platform 	<ul style="list-style-type: none"> • Informatica® PowerCenter® 8.5 <ul style="list-style-type: none"> » Pushdown Optimization with Teradata • Informatica PowerExchange® 8.5 <ul style="list-style-type: none"> » Change Data Capture for Adabas • Enterprise Grid Option • Real Time Option • Metadata Management

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