



## MTN Group: Staying On Top Of A Fast-Growing, Transcontinental Telecommunications Business With PowerCenter 64-bit

### FAST FACTS

#### CUSTOMER

MTN Group

#### CHALLENGE

Quickly and reliably source, transform and integrate hundreds of millions of daily Call Detail Records for near-real time analysis in support of marketing, CRM and resource planning – including providing the 64-bit power to rapidly recover from a one-time OS failure and its resulting 35-day backlog of unprocessed, business-critical call records.

#### BENEFITS

- Reliable, high-performance processing of exponentially growing volumes of call records
- Rapid recovery of business-critical call detail analysis system from OS failure
- Visibility into customer calling patterns in support of Marketing, CRM and planning
- Standard platform and skill sets for enterprise-wide data integration

#### INFORMATICA SOLUTION

Informatica PowerCenter® 64-bit

“Informatica PowerCenter has played a leading role in helping MTN maintain a strong customer focus, and has been instrumental in helping to drive business growth. In upgrading to PowerCenter 64-bit, we gained the data integration power necessary to handle increasingly massive volumes of call records and turn that data into a business advantage..”

— Charmaine Wessels

IS MIS Development Team Leader, MTN South Africa

Launched in 1994, the MTN Group is a multinational telecommunications group, operating in 21 countries in Africa and the Middle East. The largest telco in Africa, the company employs more than 8,300 personnel and has a market capitalisation of between R150 billion & R180 billion (January 2007). The MTN Group is listed in South Africa on the JSE Securities Exchange (JSE Limited).

### The Challenge

Answering the call for reliable and affordable telecommunications services across Africa and, more recently, the Middle East, the MTN Group has enjoyed steady and substantial annual growth over the past dozen years. With its US\$5.526 billion (R33.5 billion) acquisition of Investcom LLC in 2006, the company emerged as a pre-eminent mobile operator in Africa and the Middle East, serving more than 28 million subscribers, approximately 12 million of which are in South Africa. The MTN Group operates three business divisions: MTN-SA (South Africa), MTN International, and Strategic Investments. In 2002, when MTN SA sets about building an enterprise data warehouse to contain massive volumes of call detail records as well as customer, account and financial data, it knew that superior data integration processing power and scalability would be paramount. Call Detail Records in particular were expected to grow exponentially over time as the company continued to expand its network and customer base.

“Every call made is a call record we have to load,” said Charmaine Wessels, IS MIS Development Team Leader, at MTN South Africa. “These records are absolutely critical to ascertaining calling patterns and network usage on a near-real time basis, with the consolidated data being used for analysis by every level of user imaginable – from customer retention workers to top executives.”

The enterprise data warehouse was designed to consolidate everything that could assist in customer call pattern analysis as well as general business querying. It was envisioned that Marketing would use the data to help it design new price plans to put on the market, based on usage trends. The company’s Call Center agents would use the information for enhancing customer care and up-selling purposes. And MTN planners would tap into the data warehouse to map out the allocation of resources. Top management, meanwhile, would gain comprehensive and timely views across the entire spectrum of the fast expanding business.

With so much at stake, any lapse in performance, any missed load windows and any outages would resonate throughout the organisation. And with hundreds of millions of Call Detail Records having to be integrated into the warehouse daily, such lapses would be extraordinarily difficult to recover from –

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records would pile up and the value of entire system would be seriously compromised. Consequently, MTN determined the need for a data integration platform for its enterprise data warehouse that would provide:

- Increasingly powerful processing performance and seamless scalability
- Visibility into data integration and data warehouse performance via comprehensive metadata management
- Ensured data quality via integrated data quality management
- Broadest possible data sourcing capabilities via a generic, codeless interface

## The Solution

MTN-SA implemented Informatica PowerCenter 5 as the data integration foundation for its new enterprise data warehouse in 2002. Among the features that impressed MTN was PowerCenter’s ability to handle a vast range of heterogeneous data sources and connections, including Oracle to SQL server, Informix and flat files. MTN developers were able to leverage a single standard interface to make a wide spectrum of connections, both initially and going forward. Moreover, because the PowerCenter provides a GUI-based, codeless development environment, MTN found it was easy to bring new developers on board and get them up to speed quickly.

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### **Seamless PowerCenter 64-bit Upgrade Powers Through Business-Critical Backlog**

Just as MTN has grown dramatically in the past several years, so has the number of Call Detail Records that have to be integrated daily into the enterprise data warehouse. By mid-2006, the warehouse had expanded to 20 terabytes, with well over 1/2 billion Call Detail Records being added each day. The need to accelerate batch loads prompted a 2005 upgrade to PowerCenter 7, followed by an upgrade of the underlying UNIX-based system's OS to AIX 64-bit. A subsequent upgrade to PowerCenter 64 bit was planned, but a potentially catastrophic event occurred that, in Wessels' words, "brought that upgrade aggressively forward."

In April 2006, MTN found itself in a serious disaster recovery situation, induced by an OS failure on its primary UNIX production server. Loading of records into the data warehouse came to a halt and a substantial record backlog quickly formed. In addition to the "daily" record backlog, the Call Detail Records had a data loss of an estimated 3 billion+ records due to the failure. With the business value of the entire system at risk, according to Wessels, "an immediate upgrade to PowerCenter 64-bit was the only reliable solution that would give us the additional resources to bring down the batch time and do the extra loading necessary to catch the system up."

Upgrading to PowerCenter 64-bit would enable working with the larger data blocks that 64-bit architectures use to speed throughput and thus quickly eliminate the backlog. Additionally, because PowerCenter uses the same server base code regardless of bit-mode operation, MTN could anticipate that the conversion process would go quickly and smoothly.

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As it turned out, MTN was correct. The upgrade process was commenced immediately and within just 24 hours all critical data integration processes were running successfully on the 64-bit version of PowerCenter. Three days later, the entire "daily" backlog had been processed and integrated into the warehouse and operations were back to normal. This in turn freed up the time and resources for the warehouse team to focus on the 3 billion+ Call Detail Records recovery.

The initial projection to complete this 3billion+ reload was cut back by at least 30 days with the PowerCenter 7 64-bit implementation. What's more, this remarkable feat was accomplished without impacting the "daily" batch runs.

"It was a very straightforward install and within a day, we knew we could recover and go forward using PowerCenter 64-bit," summed up Wessels. "We were extremely pleased that the PC 7 64-bit upgrade was accomplished so quickly using just one ETL administrator and one database administrator, and that we didn't have to throw the entire development time at the conversion."

## The Results

### Reliable, high-performance Data Integration Environment Powers Call Record Analysis

For MTN, the seamless upgrade to PowerCenter 64-bit was more than just a oneoff event. MTN-SA had previously worked with Informatica's South African resources to upgrade to a higher performing version of PowerCenter when it moved from PowerCenter 5 to PowerCenter 7. Since the upgrade to PowerCenter 7 and the subsequent upgrade to PowerCenter 7 64-bit, MTN has experienced 470% growth in the number of Call Detail Records processed per day.

According to Wessels, "Informatica's commitment to linear scalability and increasingly powerful releases of PowerCenter has held us in good stead in the past, and will carry on being of great value as our operations continue to expand.

With PowerCenter 64-bit, we have the processing muscle we need to keep our batch windows at a reasonable size, as well as the capacity to power through backlogs brought about by planned or unplanned downtime."

### Visibility into Customer Calling Patterns Drives Growth, Retention and Profitability

With a reliable environment for customer call pattern analysis, querying and reporting in place, MTN is able to develop and launch more meaningful customer services and pricing plans based on a close monitoring of network usage. The company's Call Center agents are equipped with holistic customer views and are able to suggest different plans and services based on customer calling histories. And resource planners are able to accurately project future resource needs based on an accurate picture of past usage. Managers, meanwhile, are able to view key metrics based on timely data on executive and operational dashboards, and power users can launch ad hoc queries against the consolidated data with confidence in its timeliness, accuracy and completeness due to PowerCenter's end-to-end metadata tracking and management.

### Standard Platform for Universal Data Integration Across the Enterprise

PowerCenter provides MTN with a single, easy-to-use interface for integrating all data types from all enterprise data sources, as well as a single platform on which the company has developed a rich and standard set of data integration skills. Both the PowerCenter platform and these technical skills are extensible across MTN's growing operations, now in 21 countries, to reduce costs and ensure quality across any number of data integration initiatives. "As we integrate our Investcom acquisition and expand across so many countries, we need standardisation and the benefits it brings," acknowledged Wessels. "It's just a matter of time before we start leveraging the considerable strengths of Informatica PowerCenter beyond MTN-SA and across the rest of the enterprise."

## NUTS AND BOLTS

- Informatica PowerCenter 64-bit
- Platform: Operating System Unix, AIX 64-bit, number of CPUs 16
- EDW: 20+ terabytes Oracle 9i
- Sources: Various heterogeneous sources, including Oracle, Informix, SQL Server & flat files
- Analytic and reporting tools: SAS and Business Objects

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