INFORMATION FOR SUCCESS

Customers Improve Data Warehousing
Performance and Lower Costs with Oracle Exadata
September 2012

ORACLE®

Hardware and Software, Engineered to Work Together

Getting actionable data in the hands of the right decision makers translates to positive business outcomes – whether that means competing more effectively, reducing operational costs, meeting compliance requirements, or anticipating changing market conditions.

Oracle leads the data warehouse markets with innovative products that deliver fast, scalable and cost-effective reporting and business intelligence for today's data-driven enterprises. Oracle Exadata and Oracle Database, complete with in-database advance analytics, offer a fast, reliable, and cost-effective platform for data warehousing and business intelligence that is easy to scale to meeting complex reporting and analytics needs of the most demanding organizations.

This reference booklet contains a sampling of real business results that organizations in a variety of industries worldwide have achieved by implementing data warehouses with Oracle Exadata. In these testimonials you'll learn how customers have used Oracle Exadata to improve performance, manage more data, reduce costs, and the ability to quickly analyze complex data, for better business decisions in real time.

Whether you are an existing or prospective Oracle Database customer, we hope you find these success stories helpful in learning how Oracle Exadata can help you enable your data warehouse to align with current business requirements

Sincerely,
Jeb Dasteel
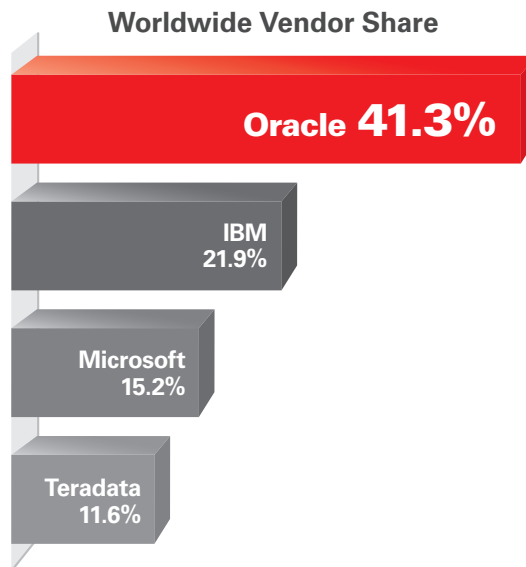Senior Vice President and Chief Customer Officer

Table of Contents

STILL

#1
Data Warehouse

Worldwide Vendor Share

Oracle **41.3%**

IBM
21.9%

Microsoft
15.2%

Teradata
11.6%

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oracle.com/datawarehouse
or call 1.800.ORACLE.1

Source: IDC, "Worldwide Business Analytics Software 2012 - 2016 Forecast and 2011 Vendor Shares," IDC #235494, June 2012;
Table 13, (Data Warehouse Management Software). Vendor share based on software license and maintenance revenue.

Algar Telecom Gains 50% in Compression and 85% Faster Access to Data Warehouse Data with New Storage Solution

"By adding Oracle's Exadata Database Machine X2-2 storage solution, we updated our data warehouse environment with the most appropriate solution available on the market. With Exadata, we were able to reduce access and processing time by 85% for the management and historical data used by our internal business team, enabling us to serve then with faster and more reliable information."
Eduardo Rabboni, Chief Information Officer, Algar Telecom

Algar Telecom is a Brazilian telecommunications company that has been present in the market for 56 years and has been listed on the stock exchange since 2007. The company belongs to Grupo Algar (Algar Group) and offers landline phone, cell phone, broadband internet [3G and asymmetric digital subscriber line (ADSL)], data communication, television, and code 12 services for domestic and international long distance calls.

Algar divides its wide range of products and services into two segments: retail under the CTBC brand, and companies under the Algar Telecom brand. Algar has more than 1.6 million customers—including approximately 700,000 landline phone, 500,000 cell phone, and 235,000 broadband customers—and operates in major Brazilian states including Minas Gerais, São Paulo, the Federal District, Rio de Janeiro, Mato Grosso do Sul, Goiás, and Paraná.

Algar's data warehouse revitalization project focused on upgrading a system that was more than 10 years old. To do so, Algar adopted Oracle's Exadata Database Machine X2-2, along with software and support. The new solution accelerated access to historical and management data, which helped the company offer quick and complete information to its internal business team.

Challenges

• Restructure the operator and provider's database infrastructure to ensure competitiveness and a high standard of service for its 1.6 million landline, cell phone, and internet customers

• Achieve quicker processing in order to deliver management information extracted from the data warehouse environment to the sales and retail departments

• Speed up access to the telephone company's historical data in order to quickly respond to requests from the business support area

Solutions

• Worked with Oracle Consulting and the Oracle Advanced Customer Support Services team to develop Exadata Database Machine X2-2 HC Quarter Rack in less than two months and achieved up to 85% faster processing in the data warehouse environment

• Reduced from 12 hours to 3.5 hours the execution time of the 2,000 daily loads that provide strategic data to support the performance and decisions of the sales and retail team, such as client loss, default, and product performance data

- Compacted by 50%, 8 terabytes with more than 1.000 tables that company already had, freeing up space to expand historical data in the data warehouse for the next five years instead of just two years online, as it had been limited to previously

- Sped up the recovery of historical information from 10 days to as little as five hours to meet requests of the business support area, which generally cover more than two years

- Simplified the data warehouse environment's management and freed the IT team to focus on other duties, since Oracle provides the entire solution—the server, database, operating system, and support

- Reduced backup time—including download of data to disc and transfer to tape—from 26 hours to 6 hours, thanks to Oracle Recovery Manager, ensuring data integrity and reducing the system's unavailability window

- Began to extract reports, such as those regarding billing and new business generation, in just 18 seconds using the business intelligence tool, instead of two hours, as it had previously taken

Implementation Process

"We were surprised because the implementation, though complex, was faster and easier than expected. In addition, the IT team quickly adapted to the new system. The migration process involved eight people—a full-time Oracle consultant, another consultant for specific issues, and six Algar professionals," said Eduardo Rabboni, chief information officer, Algar Telecom.

> "Oracle's data warehouse
> solution has accelerated system
> performance by up to 100 times.
> In addition, this implementation
> has greatly improved the user
> experience with vast new
> analytical capabilities, such as
> generating dynamic reports
> on-the-fly and real-time data
> updates."
> **Rafał Kudlinski**, Data Warehouse
> Manager, Allegro Group

Allegro Group Ensures Enterprise Scalability with Flexible, Integrated Data Warehouse Solution

Allegro Group is the leading e-commerce company in Eastern Europe and the second-largest online auction business in the world. The company is a property of Naspers, an international media group. Operating e-commerce Web sites across 14 countries in Eastern Europe, Allegro Group enables its 20 million registered users to bid on items ranging from clothes to cars. The company hosts more than 18 million new auctions per day, and its business is growing by more than 20% annually.

Challenges

• Build a scalable enterprise data warehouse that meets business users' expectations for performance and quality of service

• Optimize transactional data storing and processing, such as processes originating from the user activity tracking system that generate approximately 500 million operations per day

• Create a central location to store data from all Allegro Group sites—located throughout 14 countries—including advertisements, auction sites, the online payment system, and the price comparison engines

• Enable the company to efficiently manage more than 15 terabytes of data in a consolidated database that can scale to support a 50% annual increase in data volume

Solutions

• Deployed Oracle Exadata Database Machine, with implementation help from Oracle Consulting, to accelerate the time it takes to analyze data and load it into the data warehouse

• Installed Oracle Business Intelligence Enterprise Edition to effectively report and analyze data

• Enabled Allegro to complete the extract, transform, and load process for all data from Allegro Group sites overnight

• Ensured that 400 business reports can be accessed by 100 concurrent users in less than five seconds

• Reduced report generation time from an average of several hours to 45 minutes, and less than a minute in some cases

• Accelerated average data warehouse query processing by 50 times, with a 100 times increase in some cases

• Enabled Allegro to track user activity history and detect abnormal behavior to improve fraud detection related to its e-commerce and auction sites, saving the company thousands of dollars annually

Asiana Airlines Improves Passenger Management with Near-Real-Time Reservation and Ticketing Information

"We use Oracle Exadata Database Machine to underpin the passenger management information system that holds our critical flight reservation data. The improved data processing speed ensures Asiana Airlines can provide accurate, responsive service to customers and travel partners around the world."
Goh Seok Nam, Vice President, Airlines & Infra, Asiana IDT

Established in 1988, Asiana Airlines is one of South Korea's two major airlines. Its 72 aircraft fly 14 routes to 12 cities in South Korea and 87 routes to 68 cities in 21 additional countries. The airline's international cargo service comprises 20 routes to 23 cities in 13 countries. In 2011, Asiana Airlines was named the Airline of the Year by Global Traveler magazine.

More Accurate, Responsive Customer Service

As more passengers chose to fly with Asiana Airlines, the company had to ensure it could properly manage, store, and protect around 12.1 terabytes of passenger and business information. With the quantity of information increasing, it took longer to process passenger reservations and cancellations, integrate passenger and ticketing information, analyze ticket sales, and extract and load data to a data warehouse.

In the highly competitive airline industry, slow system performance can be detrimental to business, so in August 2010, Asiana Airlines implemented Oracle Exadata Database Machine to improve the performance of its passenger management information system. As a result, the airline cut approximately four to five hours off the time it took to turn its raw data into daily performance information.

In the past, the passenger management process started around midnight and was finished at 1 p.m. or 2 p.m. Now, with Oracle Exadata, it is completed by 9 a.m., before the start of the business day. By speeding up data processing, Asiana Airlines has shortened decision-making time and ensured reservations staff can draw on the latest passenger and ticketing information when organizing and confirming travel arrangements for its customers and travel partners.

The value of this ability to provide prompt, accurate customer service became clear in March 2011, when Japan was hit by an earthquake and tsunami. In the immediate aftermath of the disasters, Asiana Airlines received thousands of inquiries from anxious passengers wanting to cancel or reschedule their flights to Japan. The airline had to cancel and reschedule flights, reissue air tickets, organize refunds, and deal with hundreds of inquiries each day. Despite the increased number of queries and transactions, the passenger management information system did not falter once. This enabled customer service staff to provide accurate, up-to-date reservation and ticketing data to passengers.

Performance Analysis Cut from 10 Hours to 10 Minutes

Asiana Airlines receives flight bookings from a range of partners, including travel and financial agencies. The airline uses Oracle Exadata to analyze the bookings it receives from these partners and Oracle Business Intelligence Enterprise Edition to generate performance analysis reports. These reports contain information, including seat reservations and airline boardings.

In the past, such in-depth analyses took up to 10 hours to complete, while now, with Oracle Exadata, the process is completed in just 10 minutes. Staff uses the analysis reports to develop partner sales and marketing strategies. By knowing which partners' services deliver the highest value in a particular market-for example, the Asia Pacific sector-the airline can create promotions that benefit all parties, and improve its overall competitiveness.

Oracle Business Intelligence Enterprise Edition also allows staff to generate and view data in visual formats, such as graphs and tables, without asking database administrators for assistance. This improves efficiency by releasing database administrators from nonessential duties, and it gives staff the freedom to create tables and graphs as needed.

Presenting data in a visual format helps to better understand complex data, so staff can see the need to modify business and sales strategies if necessary. For example, analyzing sales for certain flights or destinations and predicting future demands helps to prepare more accurate flight schedules, avoiding under- or overbooking flights and seats.

Asiana Airlines is now considering adding data to its integrated information infrastructure and extending Oracle Business Intelligence Enterprise Edition across the business.

Having information with greater depth would help reservations and customer service staff worldwide to improve the quality of assistance they provide and gain additional operational efficiencies.

Error Analysis Time Dramatically Reduced

Any disruptions to business operations due to system failure prevent staff from completing flight reservations, modifying or cancelling bookings, and answering queries. Oracle Exadata minimizes system downtime by reducing the time needed to detect and solve the root cause of errors. In the past, it could take up to eight hours to solve errors; however, error-resolution time has now been dramatically reduced. Faster problem detection and resolution reduces the impact of system downtime on normal business operations and prevents revenue loss.

Asiana Airlines also uses Oracle Enterprise Manager to monitor Oracle Exadata, further ensuring the stability and reliability of all hardware and software components.

More Efficient Extract-Transform-Load Process

Asiana Airlines is using Oracle Data Integrator to extract, transform, and load (ETL) data in real time from the passenger management information system into a data warehouse. This enables the airline to analyze passenger and ticketing information in a timely manner, reduce ETL costs, and ensure stable ETL processing to minimize risk.

The airline is planning to further improve data processing performance by implementing Oracle Partitioning and Oracle Advanced Compression.

Challenges

- Manage, store, and protect vast amounts of passenger and business information, with volume increasing in line with the company's growth

- Improve performance of a passenger management information system that holds customers' critical flight reservation information

- Shorten daily data processing time to ensure staff access the latest, most accurate passenger information

- Give staff the tools to analyze passenger, sales, and other business data to prepare more accurate flight schedules based on projected demand

- Ensure system issues are detected and resolved quickly to minimize business impact

Solutions

- Engaged Oracle Partner Asiana IDT to implement Oracle Exadata Database Machine and Oracle Business Intelligence Enterprise Edition, improving data processing speed and analytic capabilities

- Cut approximately four to five hours off the time to turn raw data into daily performance information. Ensuring reservations staff draw on the latest passenger and ticketing information when organizing and confirming travel arrangements for customers

- Provided accurate, up-to-date reservation and ticketing data to passengers affected by the Japanese earthquake and tsunami in March 2011, despite a significant increase in transactions and queries

- Cut analysis time for travel partner bookings from 10 hours to 10 minutes, helping staff develop better informed partner sales and marketing strategies

- Enabled staff to generate and view data in visual formats, such as graphs and tables, without asking database administrators for assistance

- Prepared more accurate flight schedules, by using Oracle Business Intelligence Enterprise Edition to analyze data and predict demand for specific flights and destinations

- Shortened system-error detection and resolution significantly, minimizing the impact on normal business operations

- Ensured the stability and reliability of all hardware and software components, by using Oracle Enterprise Manager to monitor Oracle Exadata

- Achieved a more efficient ETL process with Oracle Data Integrator, enabling the airline to analyze passenger and ticketing information in a timely manner, reduce ETL costs, and ensure stable ETL processing to minimize risk

Why Oracle

Asiana Airlines and Oracle Partner Asiana IDT conducted benchmark tests of several solutions. Oracle Exadata performed 10 to 338 times better than the existing system for placement operation, including data loading and inquiries. This result was also 2 to 80 times faster than competing solutions. Oracle Business Intelligence Enterprise Edition also performed 11 to 190 times better than the airline's existing business intelligence system.

The powerful performance, stability, and security of both solutions assured Asiana Airlines that passenger and ticketing data could be reliably and safely transferred, processed, and analyzed.

Implementation Process

Asiana Airlines worked with Asiana IDT to implement Oracle Exadata and Oracle Business Intelligence Enterprise Edition. Asiana IDT is a subsidiary of Kumho Asiana Group and specializes in IT services for the airline, construction, distribution, financial, leisure, and manufacturing industries.

"Asiana IDT has helped Asiana Airlines optimize its IT infrastructure for many years, and was instrumental in integrating passenger and ticketing data," said Goh Seok Nam, vice president, airlines & infra, Asiana IDT. "Our understanding of the unique requirements of the airline industry means we are well placed to help improve operations."

Australian Finance Group Ltd. Reduces Time to Process Broker Commissions from 37 Hours to 9 Hours

Established in 1994, Australian Finance Group (AFG) is the largest provider of mortgage broking services in the country and one of the top three in the world. AFG offers more than 800 residential mortgage products from Australia's leading financial institutions through a network of more than 2,200 brokers - the largest national distribution network of financial services in the country. AFG is also one of the fastest-growing providers of holistic financial services. The company has evolved beyond the provision of home loans to also offer commercial, equipment, and leasing finance, as well as personal loans, insurance, and property investment services.

Challenges

• Improve efficiency and provide a better user experience through faster application performance for brokers using the company's FLEX platform to source loan products, file applications, manage customers, and generate leads

• Reduce total cost of ownership by rationalizing existing legacy hardware infrastructure

Solutions

• Engaged Oracle Advanced Customer Services to replace legacy servers with Oracle Exadata Database Machine in two months

• Improved Siebel CRM database performance by eight times

• Reduced the time it took to process monthly commission payments for brokers from 37 hours to 9 hours; significantly reducing the risk of missing a scheduled commission payment

• Reduced the time to update warehouse data at night from nine hours to less than two hours, ensuring that information was up to-date when sales staff started work each day

• Provided the performance to deliver new, on-demand management reports to brokers using Oracle Business Intelligence Enterprise Edition, which helped AFG recruit brokers from large national financial services firms and property groups

"Oracle Exadata Database Machine gives us the storage power we need as we introduce new mortgage products, which will support our business well into the future."
Malcolm Watkins, Executive Director, Australian Finance Group Ltd.

Autoglass Expands Data Storage, Makes Query Responses up to 60-Times Faster

"Oracle Exadata Database Machine provides superior performance, reliability and scalability for Autoglass' technological environment. Now we can execute procedures up to 60-times faster than before."
Fabrício Ferri, IT and Telecommunications Executive Manager, Autoglass

Autoglass specializes in automotive glass products and services. It has more than 30 branches and many authorized service centers spanning Brazil to meet the automotive glass and accessory needs of retailers, mechanics, insurers, auto dealers, and end consumers. The company also replaces and repairs passenger and cargo vehicle lights, side windows, and automotive parts. Autoglass' mission is to provide drivers and passengers with safety and peace of mind during their vehicular travels.

Autoglass' revenue grew 30% to 40%, annually, in the past three years. At the same time, it introduced many IT systems into its environment—automating nearly 90% of its core processes. These factors—growth and automation—placed considerable strain on the company's data infrastructure, so that its core IT systems did not perform at their peak.

To improve IT performance and enable the company to effectively manage and reap the benefits from all of its data, Autoglass implemented Oracle Exadata Database Machine. Since deploying the solution, Autoglass has gained the ability to complete core procedures up to 60-times faster, such as on boarding new policies generated by its insurance partners.

Challenges

• Support rapidly growing operations with an IT infrastructure that improves core business process efficiency and supports delivering high-level service to customers and business partners, including retailers, auto dealers and repair shops, insurers, and consumers

• Gain the ability to effectively reap the business benefits of sales and inventory data for the company's price-sensitive auto glass and auto accessory products

• Accelerate critical processes—such as on boarding new policies from insurance partners, performing system backups, and completing monthly financial closings

Solutions

• Implemented Oracle Exadata Database Machine X2-2 to achieve optimal performance for the transactional data environment used for administrative and operational applications, such as enterprise relationship management, customer relationship management, and specific business applications

• Gained the ability to support rapid business expansion and exponential data growth after automating 90% of its business processes

• Ensured sufficient processing and storage capacity to absorb anticipated robust business expansion over the next two years

• Solved application and database load and performance issues, significantly accelerating average response times for internal users, retailers, garages, insurers, and car dealers

- Reduced, to a matter of seconds, the minutes previously required to check auto parts stock and consult partner-generated insurance policies—improving customer service

- Gained the ability to execute procedures up to 60-times faster, such as for on boarding insurance partners' new policies, consulting existing insurance policies, and completing the month-end financial close

- Reduced transactional database backup time by roughly five-times, from 23 hours to 5 hours, ensuring data security and avoiding overlaps for this daily task

Implementation Process

"The organization and care that Oracle executed in delivering Oracle Exadata Database Machine was admirable—from the physical delivery, to verification of the computing environment, to putting the machine into operation. This avoided setbacks, and we have not had any problems or incompatibility issues to this day," said Fabrício Ferri, IT and telecommunications executive manager, Autoglass.

Oracle Customer:

Avea iletisim Hizmetleri A.S.
Istanbul, Turkey
www.avea.com.tr

Industry:
Communications

Annual Revenue:
US$7.5 Billion

Employees:
2,600

Oracle Products & Services:

• Oracle Exadata Database Machine
• Oracle Data Integrator
• Oracle GoldenGate
• Oracle Business Intelligence
   Enterprise Edition

Oracle Partner:

Intellica
www.iszekasi.com

"Oracle offers the best tools for data integration and data access. We rely on Oracle's software and expertise in each step of our process. Oracle enabled us to focus on what we really do—transform data, apply business rules, and ultimately help our customers."
Mustafa Sabri Çikrikci, BI&DW Team, Avea iletisim Hizmetleri A.S.

Avea iletisim Hizmetleri A.S. Optimizes Database Compression, Reporting, and Campaign Analysis

Avea iletisim Hizmetleri A.S., the sole GSM 1800 mobile operator of Turkey, provides services to 97% of Turkey's population through its next generation network. With roaming agreements covering 199 countries, Avea is growing rapidly and currently serves 11.4 million subscribers.

Challenges

• Create an open telecommunications platform that can integrate new services such as mobile number portability and 3G network services

• Enable fast reporting and immediate access to business data across the company by establishing an efficient and flexible data warehouse

• Improve Avea's management of telecommunications campaigns by creating more specific target audiences and running more detailed post-campaign analyses

Solutions

• Migrated data from disparate systems with Oracle GoldenGate and created a central repository on Exadata, raising data access performance by a factor of five

• Used the advanced data compression capabilities of Oracle Exadata Database Machine to decrease 40 terabytes of data to a mere 10 terabytes

• Leveraged Oracle Data Integrator to optimize Avea's Extract Transform-Load (ETL) processes, decreasing the ETL batch window by more than 30%

• Accelerated the company's reporting performance by three to ten times by integrating platforms, source systems, and operational data stores with Oracle GoldenGate

• Leveraged the advanced visualization and analysis features of Oracle Business Intelligence Enterprise Edition, enabling more efficient and in-depth analysis of data from across the company's telecommunications operations

• Established a telecommunication-specific data model with party, location, tariff, invoice, subscriber, and customer entities, enabling the company to analyze its promotional campaigns much more precisely

• Automated most data warehouse maintenance processes and lowered the maintenance effort by nearly half

Industry:
Financial Services

Annual Revenue:
Over US$5 Billion

Employees:
200,000

Oracle Products & Services:

• Oracle Exadata Database Machine
• Oracle Data Guard

BNP Paribas Runs Global Trading Environment 17-Times Faster with Oracle Exadata

BNP Paribas, born in 2000 out of the merger of Banque Nationale de Paris (BNP) and Paribas, is one of the largest financial institutions in the world, the largest bank in the Eurozone in terms of deposits, and the 7th largest bank globally, according to the 2010 Forbes 2000. Operating across Europe, the group has domestic retail banking markets in France, Italy, Belgium, and Luxembourg. It also has one of the largest international networks, with operations in 83 countries.

Challenges

• Provide transparency within the global trading environment and improve compliance reporting and application performance

• Cope with exponentially growing data in the data warehouse, between 150 gigabytes a day, to more than 450 gigabytes daily

• Manage more than 4 billion financial transactions per day in real time with efficiency

• Standardize all information flows within the global trading environment onto one platform to create a level of agility not previously achieved in a reporting and statistics platform

Solutions

• Deployed Oracle Exadata Database Machine to reduce the size of the global trading data warehouse from 40 terabytes to less than 8 terabytes with hybrid columnar compression

• Accelerated data loading six-fold and achieved much faster query execution time—completing queries in less than one second, down from an average of 30 seconds to one minute per query

• Achieved report throughput that is 17 times faster than on the legacy system

• Reduced tuning and maintenance burden and costs with Oracle Exadata's automated tuning capabilities

• Allowed the database administration team to reallocate development resources to work on writing code, as opposed to simply managing the database

"I can get tables that were already compressed down to 1 terabyte in Oracle Database 10g down to 185 gigabytes using the hybrid columnar compression in Oracle Exadata Database Machine. That brings massive benefits in terms of manageability."
Jim Duffy, Senior Data Warehouse Architect, BNP Paribas

Deutsche Bank AG Optimized Data Warehouse Infrastructure Ensures More Efficient Credit Risk Reporting

Deutsche Bank AG is a leading global investment bank with a substantial consumer banking business and business segments that support and reinforce each other. Deutsche Bank is the leader in Germany and Europe, and is growing steadily in North America, Asia, and other emerging markets.

The bank is exposed to many risks, including credit obligation, volatile market prices, liquidity, and legal and regulatory issues that affect capital and reputation. Risk assessment, reporting, and evaluation are critical for daily operations.

A high-quality data warehouse is the foundation for regulatory risk assessment and serves more than 500 active users and thousands of other users worldwide as the central information source for analysis, with approximately 20 terabytes (TB) of data. Escalating data and reporting demands—stemming from internal needs and external legal requirements—require strategic realignment to new data management methods.

With the implementation of Oracle Exadata Database Machine, data processing performance improved significantly, and the bank acquired the ability to analyze increasing data volume in much shorter cycles. In addition, compressing the data volume by 75% reduced electrical usage and costs.

Challenges

• Establish real-time credit risk, regulatory law, and internal management reporting to optimize credit risk analysis, as the ability to perform daily analyses of risk ratios is increasingly important

• Consolidate information from credit risk assessments, aggregation, and analyses into a single data warehouse

• Create a future-oriented, high-performance database infrastructure to maintain increasing data volume and ensure timely credit risk reporting

• Decrease data memory demands while ensuring capacity for future growth, as the bank maintains 20 TB of data for current and historical credit risk assessments and requires further memory for other source systems and data warehouse applications

• Establish a high-performance environment to adequately serve more than 500 active users and thousands of other global users that require information in varying formats

Solutions

• Implemented Oracle Exadata Database Machine X2-8 running on Oracle Linux to generate quarterly, monthly, weekly, and daily reports

• Improved database performance dramatically, even with increasing data requirements

• Generated internal and regulatory reports 50% faster, while assuring capacity for additional growth resulting from new financial regulations, such as Basel III

• Increased data volume in the data warehouse and made it more easy to manage

- Used Oracle Exadata Database Machine to compress storage and reduced data volume by 75%, which decreased costs by approximately 20% due to lowered storage requirements and electricity usage

- Ensured high-performance for internal and external users, including automatic data delivery to various regulatory authorities, such as the Bundesbank

Why Oracle

Oracle clearly led in its proof of concept for performance and compression capabilities, delivering a complete and seamless hardware and software solution. Thanks to Oracle Exadata Database Machine's scalability the bank is well prepared to handle future volume increases and greater reporting demands.

Implementation Process

During phase one, pertinent credit assessment data was migrated to Oracle Exadata Database Machine. By the end of 2011, the next phase was completed, which involved migrating the entire data warehouse and source systems into Oracle Exadata Database Machine.

Oracle Customer:

Dialog Semiconductor plc
Kirchheim/Teck, Germany
www.dialog-semiconductor.com

Industry:
High Technology

Annual Revenue:
US$218 Million

Employees:
380

Oracle Products & Services:

• Oracle Exadata Database Machine

• Oracle Partitioning

• Oracle Database 11g

• Oracle Premier Support

Oracle Partner:

Hunkler GmbH & Co. KG

www.hunkler.de

"Oracle Exadata Database
Machine is tailor-made for our
applications that are demanding
on computation power and
online data aggregation."
Kariem Yehia, Head of IT, Dialog
Semiconductor plc

Dialog Semiconductor plc Improves Corporate Database Solutions Using Exadata

Dialog Semiconductor creates energy efficient, highly integrated, Mixed-signal circuits optimized for personal mobile, lighting and display, and automotive applications. The company provides flexible and dynamic support, world-class innovation and the assurance of dealing with an established business partner. Dialog Semiconductor plc is headquartered near Stuttgart with a global sales, R&D, and marketing organization.

Challenges

• Upgrade the current IT system to one that has sufficient capacity and performance for the highly demanding tasks of collecting and analyzing complex measurement data to assure product quality for semiconductors and integrated circuits

• Supply an innovative and flexible solution that aligns with the company's own business philosophy and can scale up as the business continues to expand

• Institute a unified solution that requires less maintenance than an individually assembled one

• Ensure high availability to prevent interruptions to the manufacturing process

Solutions

• Deployed a solution based on the Oracle Exadata product family developed around Oracle's Sun hardware and Oracle Database 11g Release 2, improving performance enormously

• Reduced the time spent on frequently executed data postprocessing jobs from 2.5 hours to 15 or 20 minutes

• Cut the time spent on continuous manufacturing data loading jobs from 60 minutes to 6 minutes—a ten-fold acceleration

• Guaranteed high availability thanks to redundancy in the cluster where the solution is installed

• Ensured scalability by factoring in growth for the next three years, as well as capabilities for integrating further applications

• Reduced administrative expenditure dramatically, freeing up administrator resources

Digicel Haiti Delivers Timely Data to Drive Business Strategy as Country Rebuilds Following Earthquake

"Our market growth is completely related to the benefits we have achieved with Oracle Exadata Database Machine. With the faster data warehouse, we can give our business users timely access to strategic information, helping them to target sales efforts, quickly resolve network problems, and deliver reliable, quality service to our customers across Haiti."
Rabih Youssef, Chief Information Officer, Digicel Haiti

Part of the Digicel telecommunications group, which operates throughout Latin America and the Caribbean, Digicel Haiti launched in 2006 and today serves more than 3 million cellular customers. The company's mission to provide its customers with reliable cellular service became even more important after the 2010 earthquake, as many Haitians rely on cellular phones as their only means of communication.

To manage the business strategically and meet growing customer needs, Digicel Haiti required a faster, more reliable data warehouse. To achieve these goals, the communications provider migrated its existing data warehouse to Oracle's Exadata Database Machine X2-2 HC Half Rack. Since deploying the system, it has gained access and insight into customer intelligence previously unavailable, helping Digicel Haiti transform the way it addresses the market. The provider completed the complex IT project under stressful post-earthquake conditions without interruption to the day-to-day business operations. Since deployment, Digicel Haiti has been able to expand the hours it services its customers and accelerate the time it takes to provide sales, marketing, and customer care staff with key data to drive the business.

Challenges

• Ensure the company can provide the reliable, high-quality cellular service on which its subscribers in Haiti rely, often as their primary form of communication

• Resolve data warehouse performance issues that previously caused delays in providing business users with vital data needed to target sales efforts, resolve communications network problems, and deliver customer care

• Establish a stable foundation for future company and network growth along with the flexibility to adapt to changing market demands

Solutions

• Migrated its 38 terabyte data warehouse onto Oracle's Exadata Database Machine X2-2 HC Half Rack in just two months, gaining significant performance increases that ensure business users have the data they need, such as customer event records, to make strategic decisions to improve service and grow revenue

• Improved system performance by 55% overall, eliminating the need to run central processing units (CPUs) and memory at full capacity

• Provided an average of 50 daily users with quick access to the data warehouse query tool, enabling them to quickly find data and run reports

- Reduced the time required to deliver key business reports from 8-to-10 hours to 3-to -4 hours

- Enabled business users—ranging from sales staff all the way to C-level executives—to arrive at 8 a.m. and immediately view the previous day's reports, helping them to strategically target sales outreach, network maintenance, and other customer-facing activities

- Reduced storage requirements due to the built-in storage in Oracle Exadata, freeing the organization's legacy storage system for other purposes

- Guaranteed rapid data warehouse recovery in 4-to-6 hours instead of the 10-to-15 hours required in the legacy environment, which is vital to recovering business operations in the event of a future emergency situation, such as another earthquake or hurricane

- Gave the organization the agility that it needs to adjust network bandwidth to follow the migration of customers in the event of a disaster

- Simplified overall management of the provider's IT environment, which includes more than 300 servers and several databases

Why Oracle

Digicel Haiti wanted an out-of-the-box solution to quickly resolve its data warehouse performance issues. It benchmarked Oracle Exadata Database Machine against several other options and, ultimately, chose Oracle Exadata because of its performance and speed, the company's familiarity with Oracle products due to the company's use of Oracle Database, and the solution's compatibility with third-party systems, including Digicel Haiti's reporting system. Also, Digicel Haiti felt confident in the support provided by Oracle Partner Fujitsu. On the hardware side, Digicel Haiti has relied on Oracle's SPARC Enterprise M-Series servers since its 2006 launch and continues to rely on these products because it feels they are a good fit for the demands of the communications industry. Digicel Haiti uses SPARC Enterprise M5000 servers running Oracle Solaris as back up data warehouse system.

Implementation Process

Digicel Haiti completed the very complex migration in just two months despite very difficult working and living conditions for its IT staff following the earthquake. Along with Oracle Partner Fujitsu, it also worked closely with Oracle Consulting Advanced Technology Services to gain the expertise required to complete a smooth migration. After migration, Digicel Haiti ran the legacy environment and Oracle Exadata in parallel for two weeks to ensure a smooth transition and to benchmark performance improvements. In the near future, Digicel Haiti plans to add another Oracle Exadata half rack to provide a full rack system and enable database consolidation. It will also work with Oracle Advanced Customer Services to complete an upgrade and to reconfigure some of its database nodes to optimize performance. The provider will then explore compression features inherent in Oracle Exadata with the aim of improving future capacity.

Digicel Jamaica Boosts Processing and Query Response Times, Reduces Storage Requirements

"With our goal to provide the highest quality communication services to our customers, we needed a highly scalable data infrastructure that provides unparalleled performance, which is why we chose Oracle Exadata Database Machine. We've achieved rapid gains in internal reporting and look forward to extending the power of our new infrastructure to support our 11 million subscribers."
Pascal Assaad, IT Director, Digicel Jamaica

Since its launch in 2001, Digicel Jamaica has become the fastest growing wireless telecommunications operator in the Caribbean. In four years, Digicel became renowned for competitive rates, unbeatable coverage, superior customer care, a wide variety of products and services, and state-of-the-art handsets. It is the largest global system for mobile (GSM) communications operator in the region. By offering innovative wireless services and community support, Digicel has become a leading brand in the Caribbean and has placed the region at the cutting edge of wireless communications.

Digicel's IT organization acts as a shared service for the company's operations. As part of its duties and service level agreement (SLA) with internal clients, the IT team is responsible for delivering operations reports to business managers in 16 Caribbean markets by 8 a.m. daily. These reports are critical to Digicel's business as they include data about active subscribers, daily revenue, promotions, and more. Digicel uses the information to make critical decisions, such as the types of promotions to launch, target audiences, and campaign timing. It is therefore, imperative that the information reaches managers in a timely manner.

As data volume grew, Digicel's legacy data warehousing IT environment could no longer keep pace with reporting requirements. Query times had become longer, and senior managers were receiving data that was 48 hours old-which, in the fast-moving communications sector, is unacceptable.

To address these issues, Digicel's IT team worked with Oracle Advanced Customer Support Services to deploy, with zero downtime, Oracle Exadata Database Machine, greatly improving operational reporting and services for valued subscribers. With Oracle Exadata, Digicel's IT team can now deliver near-real-time key performance indicator (KPI) reports to senior management—including the Chief Executive Officer, Chief Operating Officer, Commercial Director, and teams in 16 Caribbean markets—by 8 a.m. each day, eliminating a two-day lag in getting up-to-date data and vastly improving decision-making.

Digicel also worked with Oracle Advanced Customer Support Services to tune the new environment and optimize queries, accelerating the time to realized value.

Challenges

• Provide the near-real-time operational information-such as number of active subscribers, daily revenue, promotion data, and more-that managers need to make informed and agile decisions that drive the company's continued growth in the region

• Create a data infrastructure that can scale and deliver processing power required to support the rapidly growing communications provider and its more than 11 million subscribers

• Enable the shared services IT department to consistently meet SLA requirements set by internal clients

Solutions

- Worked with Oracle Advanced Customer Support Services to implement Oracle Exadata Database Machine X-2 Half Rack, with zero downtime

- Consolidated critical operational data for the company's operations in 16 Caribbean markets into a single database and gained the scalability and processing power required to support the company's three-year growth plan

- Gained the ability to run queries 5 to 15 times faster than in the legacy environment

- Reduced storage requirements by almost 40%, using Oracle Hybrid Columnar Compression

- Enabled the Digicel IT team to deliver communications services KPI reports to senior level management by 8 a.m. each day-eliminating a two-day lag in data, improving decision-making, and meeting the group's SLA requirements

- Provided executives with the ability to make faster decisions about critical promotional programs, as they can now see timely information about subscriber numbers and service minutes

- Cut power consumption as well as consolidated two servers—one for data warehousing and one for reporting—onto a single platform, reducing IT complexity and streamlining systems management

- Laid the groundwork to expand the Oracle Exadata Database Machine environment to support other critical business applications, which will, ultimately, improve customer service

- Leveraged Oracle Advanced Customer Support Services' expertise to tune the new environment and optimize queries, accelerating time to value

Why Oracle

"We considered several database performance solutions—including Oracle Exadata, Teradata, and IBM Netezza," said Pascal Assaad, IT director, Digicel Jamaica. "Oracle Exadata Database Machine quickly emerged as the best choice for our organization. It is powerful and cost effective. In addition, we have an unlimited licensing agreement with Oracle, which made the pricing structure even more attractive. Just as important, with existing Oracle solutions already in place, we had the skill set we needed to maintain the new environment."

Implementation Process

"At the onset of the project, we performed a proof of concept—in which we tested our own queries—and saw significant improvement, including the ability to run queries up to 15 times faster," Assaad said. "We then completed the full implementation in just three months working with Oracle Advanced Customer Support Services to conduct critical tuning. In particular, Oracle Advanced Customer Support Services was crucial in helping us optimize our queries, which was key to the project's success."

Enkitec Improves Performance, Scalability, and Management of Hosted IT Services Environment

Enkitec is an IT consulting firm—and Oracle Partner—serving businesses primarily in the Southwestern United States. It provides complex database services, business intelligence, and data warehousing, customer application development, and managed IT services, with a strong presence in the utilities, energy, healthcare, and oil and gas sectors. During the past two years the company has established a reputation for its leading expertise on the Oracle Exadata platform.

Challenges

• Ensure an IT infrastructure that is high performing and highly scalable to support Enkitec's hosted IT services customers, including transaction-intense businesses, such as utilities and oil and gas companies

• Streamline and optimize management of Enkitec's IT environment for the hosted IT customers to enable highly reliable and cost-effective service

• Meet the needs of customers who want to efficiently consolidate databases from many servers to a single-server environment for better efficiency and easier management

Solutions

• Deployed Oracle Exadata Database Machine as an integral component of Enkitec's hosted IT services environment, offering clients enhanced performance, scalability, and maintainability over legacy platforms

• Consolidated up to 20 servers on a single Oracle Exadata Database Machine, resulting in a reduced server footprint, lower management costs, and decreased cooling, ventilation, and power requirements

• Consolidated two full racks of hardware in the company's hosted IT services environment to a single Oracle Exadata Database Machine, saving data center floor space

• Avoided US$100,000 in power and cooling retrofits with the deployment of Oracle Exadata Database Machine, compared to the installation of equivalent hardware systems

• Implemented Oracle Exadata Database Machine seamlessly and efficiently, with zero unplanned outages or hardware failures since deployment

"Oracle's Exadata platform gives us the performance, reliability, and security our client's demand. It delivers these results cheaper than lower performing alternatives."
P Wade Nicolas, President, Enkitec

E-Plus Mobilfunk GmbH & Co. KG Centralizes Data Warehouse to Prepare for Increase in Data Volume

"Our goal is to ensure the stability and performance of our data warehouse for the next two to three years. With Exadata Database Machine, we can now handle the rapidly increasing quantities of data typical for mobile phone network providers, without having to carry out additional software optimization projects."
Andreas Heinrich, Department Manager ERP & BI Technology, E-Plus Mobilfunk GmbH & Co. KG

E-Plus Mobilfunk GmbH & Co. KG (E-Plus Group), a leader in the German telecommunications market, has successfully transitioned itself over the last few years from a mobile phone network provider to a multibrand enterprise. With its own brands and strong partnerships, the company's broad product portfolio is tailored to meet the needs of various mobile network customer segments. E-Plus Group services more than 22.1 million customers and is experiencing continued growth.

Due to its impressive growth, E-Plus' existing data warehouse infrastructure had reached its capacity. The data warehouse's performance was below par with low satisfaction among its 500 users. In addition, as a result of the architecture's complexity, administrative effort was very high. It was also not possible to guarantee service during unexpected disasters or to guarantee operating hours that met the service level agreement (SLA).

To prepare for increased data volume from the proliferation of data-hungry smart phones and applications, as well as to address performance concerns, E-Plus Group centralized its disparate hardware environment into a central platform using Oracle Exadata Database Machine x2-2 HC Full Rack. With the implementation, E-Plus compressed data volume by 55% to prepare for future data growth. In addition, the company reduced month-end closing time by 25% to 80%. To address availability concerns, E-Plus leveraged Oracle Database 11g Release 2, Enterprise Edition with Real Application Clusters to implement a cost-effective fail-over environment that is deployable and productive for reporting within 24 hours of a disaster striking.

Challenges

• Acquire performance and stability within a data warehouse infrastructure that contains five servers holding 35.5 terabytes (TB) of data

• Reduce time required to generate monthly reports regarding participant analysis, telephone evaluation, or preparation of the customer mining center

• Establish an efficient, high-performing daily reporting system that covers SIM card registration and customer contract cancellations to recognize market changes in real-time

• Ensure data warehouse availability by upgrading from existing server hardware and storage area network, as well as establish SLAs for operating hours

• Upgrade hardware to accommodate an expected data increase of 5 to 10 TB in 2012

• Optimize software to ensure that important reporting processes function properly in the future

Solutions

- Implemented a central infrastructure based on Oracle Exadata Database Machine x2-2 HC Full Rack running on Oracle Linux to centralize the data warehouse and eliminate hardware bottlenecks

- Optimized performance and stability in daily operations and month-end closing processes

- Reduced month-end closing time by 25% to 80% according to task, providing call participant analysis reports in less than 12 hours, compared to the previous 48 hours required

- Improved daily reporting performance

- Leveraged Real Application Clusters 11g Release 2 to implement a fail-over environment—and a second environment used for test and preproduction—that is deployable and ready to produce reports within 24 hours of a disaster striking and that can guarantee SLA operating hours

- Reduced administrative effort considerably by centralizing the hardware infrastructure

- Used Oracle Exadata compression to reduce data volume by 55%, which prepares E-Plus for more data due to the increase in the use of smart phones and expansion of the mobile internet

Oracle Customer:

FANCL Corporation
Yokohama, Kanagawa Prefecture, Japan
www.fancl.co.jp

Industry:
Consumer Goods

Annual Revenue:
US$1 to US$5 Billion

Employees:
721

Oracle Products & Services:

• Oracle Exadata Database Machine
• Oracle Business Intelligence
   Enterprise Edition
• Siebel Marketing
• Oracle Consulting

FANCL Corporation Gains 360-Degree View of Customers across Multiple Sales Channels, More than Doubles Data Warehouse Processing Speeds

"Since we deal in large quantities of customer and sales data, we evaluated high-performance applications based on factors, such as the price-to-performance ratio. Our first impression of Oracle Exadata Database Machine was how fast it was. We intuitively felt it was taking less than half the time to analyze the same quantities of data as before."
Masaki Ikemori, Corporate Systems Group, Information Systems Division, Administration Headquarters, FANCL Corporation

FANCL Corporation began operations in 1980 as a mail-order business selling preservative-free cosmetics, a field in which it was regarded as a pioneer. Since then, the company has expanded its product range to include skincare, health supplements, and nutritional products, such as green tea powder, kale powder, and brown rice powder. As its product range expanded, FANCL added two more sales channels—in addition to mail order—and its online shop. The company also sells its products in retailer stores, such as supermarkets and drug stores.

In 2010, FANCL began looking for ways to strengthen profitability and protect its market share in the face of changing business conditions. The company implemented Oracle Exadata Database Machine X2-2, Oracle Business Intelligence Enterprise Edition, and Siebel Marketing. It has reduced the number of reports by three-quarters and increased the number of users performing marketing analysis to around 300-half the company's total workforce.

Customer Differentiation Needed

In recent years, the number of companies offering health supplements, nutritional products, and preservative-free skincare and cosmetics has increased, resulting in fierce competition. According to Masaki Ikemori, corporate systems group, information systems division, administration headquarters, FANCL Corporation, the company needed a system that enabled visibility of customer details.

"Customers were not differentiated into specific groups, and it dawned on us that we were not offering an appropriate response to each individual customer," he said. "We could only see how many customers we had, not what type of customers they were. For instance, we could send out a news magazine to tens of thousands of our customers, but the only key performance indicators we determined were the number of customers who read the magazine or who made purchases within a specific time frame. We couldn't see the attributes of the customers, such as who they were and what was important to them.

"We realized we needed a customer-based approach, whereby each customer is treated as an individual and approached in a personalized manner, along with a system that made such an approach possible."

Greater Analysis Capabilities Required

FANCL Corporation also wanted to expand its customer and sales analysis capabilities.

28

"Our previous analysis system was not user-friendly," said Takuto Watanabe, corporate systems group, information systems division, administration headquarters, FANCL Corporation. "To analyze data, such as the number of a particular lipstick sold, staff needed to be knowledgeable, not only about data infrastructure, such as where customer and product data is stored and how to access it, but also which analytical tool among several would be the most appropriate for a particular type of analysis. As the system was so complicated, only a few people could use it."

Another issue was that the analysis system was divided up by sales channel with one analysis system for each channel, which made it impossible to see if a customer purchased from mail order only, or if they also shopped online and/or in-store.

According to Rio Endo, corporate systems group, information systems division, administration headquarters, FANCL Corporation, "There were cases where marketing campaigns aimed at mail order channels contributed to in-store sales, such as customers who purchased a three-month supply of a supplement online but their next three-months' supply in-store, but we had no way of measuring the correlation. Mail order campaigns were measured simply by the results seen from mail-order sales. We needed a system that would enable us to carry out a comprehensive analysis of what influences a particular campaign could have on customers' buying behaviors by channel, such as whether customers were buying a health supplement online that was being promoted through a mail order campaign."

Finally, the analysis system also suffered from performance issues. "A single analysis, such as a demographic query regarding age or location, would usually take between 30 and 60 minutes," said Ikemori. "Analysis involving large quantities of data, such as the extraction of specific demographic targets with a particular combination of gender, age, location, and purchasing traits, would often take up to a week, including manual preparations."

To resolve these issues, FANCL Corporation reformed its information systems to create an environment that allowed for the rapid analysis of large quantities of data and would enable people not well versed in IT to carry out advanced analytical procedures. To make this possible, the company required a data warehouse where information on customers and their purchases could be stored, a machine to process the vast quantities of data stored in this data warehouse at high speed, and the construction of a plan-do-check-act (PDCA) cycle related to marketing campaigns.

FANCL Corporation selected Oracle Exadata Database Machine X2-2 to serve as the platform for the data warehouse; Oracle Business Intelligence Enterprise Edition to conduct analysis; and Siebel Marketing, to evaluate the results of marketing campaigns. The company started implementing these solutions in June 2010 and went live in May 2011.

Easy-to-Use Business Analysis System Used by Half the Company

Ensuring the usability of the business analysis system was critical to the reformation project.

"Once marketing staff and other front-line users were able to analyze product sales by customer and sales channel, they could set up hypotheses and test them as rapidly as possible, deepening their insight into the business," said Watanabe. "In addition, by sharing this knowledge across the organization, we could improve efficiency."

In the past, the Information Systems Division had to produce a wide range of reports for users in the sales and marketing departments. With Oracle Business Intelligence Enterprise Edition, users can now create ad hoc reports themselves, lifting the burden on the Information Systems Division by reducing the need to generate similar reports for different users and divisions. This also makes it possible to compile and analyze reports immediately if there is an issue or business opportunity in a particular product sector.

In addition, the company has reduced the number of reports by three-quarters—from 500 to 120—creating a standard set of reports and sharing information across the entire organization, which saves time and resources.

The ease of use of the Oracle system has led to an increase in the number of users undertaking analysis. "In the past, around 20 to 30 people in the marketing department were analyzing data, but because the Oracle system is so user-friendly, it is now being used by around 300 people, or approximately half of all employees," said Watanabe.

360-Degree View of Customers

FANCL Corporation often runs marketing campaigns where gifts or discounts are offered to customers who reach a certain number of points. These points are collected under a customer loyalty program, and also allocated to customers who spend a certain amount of money within a certain period.

However, it was difficult to tell with precision whether these campaigns were effective. The company wanted to see whether it was meeting key performance indicators for all its campaigns but couldn't tell which campaign was generating mail order response rates or walk-in customers by just using the results from the loyalty program.

"One of the reasons we could not measure the results of marketing campaigns was because the standards of evaluation differed according to the sales channel and the marketer in charge," explained Endo. "We would measure the success of a retail campaign by the number of customers visiting a store, but measure a mail order campaign by the number of responses we received. However hard we tried, it just wasn't possible to evaluate return on investment by using the same standards to analyze and compare the results of various campaigns."

Siebel Marketing enabled FANCL Corporation to resolve these issues. The system stores the same information for different marketing campaigns, such as response rates, expected ROI metrics, and how much that campaign contributed to revenue. The results of campaigns can then be analyzed by combining and cross-analyzing this information with transaction data, such as product order figures.

"We wanted to look at what campaigns had been adopted for specific products in the past and what sort of response we had from customers," said Endo. "By visualizing this information for each customer, we can develop marketing campaigns that are better targeted to specific customers. Siebel Marketing enabled us to achieve this goal by providing a 360-degree view of customers, from what products they purchased, to which channels they used, and how much they spent."

Siebel Marketing has also allowed FANCL Corporation to measure and evaluate marketing campaign results across multiple sales channels, using standard evaluation criteria. This has enabled the company to complete more marketing PDCA cycles and gain a better insight into how to make the next campaign more successful.

"By looking at customers across different sales channels, we can see which campaigns are proving to be effective," said Endo. "By doing this repeatedly, we can select those marketing tactics that deliver the best results. This is the PDCA cycle we've now set in motion."

The analysis system has already become indispensable for various departments. The company has linked the Oracle system to its customer relationship management and efforts are being made to improve the quality of marketing activities. According to Endo, "We didn't have clear criteria to measure marketing campaigns in the past. The new system has allowed us to establish clear standards for accurately evaluating individual campaigns."

Having created a platform for visualization, FANCL Corporation intends to embark on projects involving other business systems, such as supporting storefront activities. By bringing about further evolution in IT environments, the company hopes to enhance its competitiveness yet further.

Oracle Exadata Database Machine Enables Faster Analysis

When analyzing marketing activities and campaign results, sales order data over the past few years had to be collated with customer data. However, the master data on customers and sales transactions was as much as one terabyte. The previous system had difficulty extracting the relevant information quickly and efficiently, so that a simple query on how many customers had purchased a cleansing oil advertised in a marketing campaign, for example, could take up to an hour.

Oracle Exadata Database Machine significantly improved the performance of the data warehouse. According to Ikemori, it now takes less than half the time to process the same amount of data.

Challenges

- Implement a user-friendly business analysis system that would provide staff with a 360-degree view of customers, including the sales channels they used

- Provide staff with more detailed information about each customer, so they could be treated as individuals and approached in a personalized manner

- Measure the effectiveness of marketing campaigns, such as product promotions or special offers, in depth, across customers, products, and sales channels

- Ensure the platform supporting the data warehouse could process large amounts of customer and sales data, and support a high number of queries and concurrent users

- Enable users to create ad hoc reports to reduce the administrative load on the Information Systems Division

Solutions

- Developed marketing campaigns that are better targeted to specific customers by gaining a 360-degree view of customers, from what products they purchased, to which channels they used, and how much they spent

- Reduced the number of reports by three-quarters—from 500 to 120—by creating a standard set of reports and accelerating information sharing across the organization

- Eliminated the need to generate the same report for different users in different departments

- Increased the number of users undertaking marketing analysis from 20 to 30, to around 300-half the company's total workforce

- More than doubled data warehouse processing speeds by increasing the efficiency of data extraction from the 1TB data warehouse

- Cut the time required to process simple queries by more than half

- Allowed users to create their own reports, lifting the burden on the Information Systems Division and making it possible to compile reports immediately if there is an issue or business opportunity in a particular product sector

- Acquired new knowledge about the business by ensuring users can analyze product sales by customer and sales channel, such as whether they bought cosmetics via mail order and/or a health supplement from the online store

- Enhanced the company's ability to measure return on investment on various campaigns and rotate the marketing PDCA cycle, by standardizing the evaluation criteria across all sales channels

- Ensured a smooth implementation by engaging Oracle Consulting to provide consulting services and high-quality training materials

Why Oracle

FANCL Corporation selected Oracle Exadata Database Machine after comparing several products. "Since we deal in large quantities of customer and sales data, we evaluated high-performance applications, based on factors such as the price-to-performance ratio," said Ikemori. "Our first impression of Oracle Exadata Database Machine was how fast it was. We intuitively felt it was taking less than half the time to analyze the same quantities of data as before."

Oracle Business Intelligence Enterprise Edition was chosen for its comprehensive analysis and report-producing functions. "Oracle Business Intelligence Enterprise Edition has outstanding operating features, making it easy to create reports," said Watanabe.

Finally, the company selected Siebel Marketing as the software supported the optimization of marketing activities. "What particularly impressed us when we assessed Siebel Marketing was that we could use the system without having to interrupt our thought processes," said Ikemori. "Various types of customer information could be retrieved and verified from lots of different viewpoints, and we particularly liked that it offered a 360-degree view of the customer."

Implementation Process

FANCL Corporation started implementing Oracle Exadata Database Machine X2-2, Oracle Business Intelligence Enterprise Edition, and Siebel Marketing in June 2010 and went live in May 2011.

During the implementation process, Oracle provided consulting and training services to ensure FANCL Corporation experienced a smooth transition to the Oracle platform. "This was a project in which coordination with other systems was essential, and Oracle was active in helping us solve any integration issues," said Ikemori.

Watanabe recalled that Oracle provided thorough support when the system was introduced to ensure users would be comfortable and able to use it: "We created our own training manual on the basis of materials provided by Oracle and incorporated our own terminology. It was a high-quality manual that enabled us to provide efficient training."

During the preparation phase before the system was up and running, 70 or so key people from each division of FANCL Corporation were trained in its use and subsequently played a central role in helping people in their divisions become familiar with the system. Each person received around 10 hours of training.

"Because the system is so easy to use, its introduction went ahead extremely smoothly," said Watanabe. "We received almost no questions from users about the system's basic functions."

"Oracle Exadata Database Machine made our operations run much faster and enabled us to save four hours per day for our highly qualified banking experts. Once again, we are one step ahead in Turkey's highly competitive credit card market." **Alaattin Sabuncu**, Department Manager, Card Payment Systems Analytics, Finansbank A.S.

Finansbank A.S. Boosts System Performance for Its 600,000 Monthly Report Queries

Finansbank A.S., established in 1987, is a leading Turkish financial institution. Its accolades include the European Call Centre Awards (ECCA), the Best in Class Banking Web Site award from Interactive Media Awards (IMA), and a reputation as the Turkish bank with the largest network in foreign countries.

Challenges

• Enhance data warehouse performance for 600,000 monthly financial reporting queries and reduce the average reporting time by at least 30%

• Enable the company to run 600 extract-transform-load (ETL) jobs daily, concurrently with reporting queries and without compromising the performance of the data warehouse

• Facilitate the daily backup of 18 terabytes of financial data instead of limiting backups to weekends

• Reduce time to refresh the data warehouse and manage storage demand for data from a dozen sources—such as a credit card system—while overall volume almost doubles every two years

Solutions

• Used the advanced indexing and data compression tools of Oracle Exadata Database Machine to scale down the size of the data warehouse from 18 terabytes to 9.5 terabytes

• Reduced the average refresh time of the data warehouse from 341 minutes to 250 minutes, enabling users much faster access to the latest data from the company's core banking and credit card systems as well as a dozen other data sources

• Enabled the bank's employees to run 600,000 financial reports per month without any constraints, with the average reporting time dropping by 45%, from 31 seconds to 17 seconds

• Provided the bank with the capacity to run all ETL jobs without interfering with ad-hoc reporting queries, thereby stabilizing system performance and enhancing the user experience

• Implemented daily backups and significantly mitigated the risk of losing a whole week's financial data, analyses, and reports

• Relieved users of Monday morning waiting periods for backups to be completed before they could start work

Garanti Bank Achieves Extreme Data Warehouse Performance

"To achieve the ambitious goal of becoming the most profitable bank in Turkey, we use Oracle Exadata Database Machine, the best product available in the market today. Oracle Exadata Database Machine's real benefit is that it enables us to make the right decisions at the right time to drive profitability."
Tufan Alatan, Chief Technical Officer, Garanti Bank

Garanti Bank, founded 63 years ago, is Turkey's second largest private bank, holding US$78 billion in assets. Dogus Holding in Turkey and Banco Bilbao Vizcaya Argentaria (BBVA) in Spain are equal partners in the bank.

Garanti is an integrated financial services company with its nine subsidiaries that serve the corporate, private, commercial, midsize enterprise, retail, and investment banking markets. It provides payment systems, pension, leasing, factoring, brokerage, and asset management in addition to standard banking services. Garanti serves customers through a strong, extensive distribution network of 880 branches, nearly 3,000 ATMs, an award-winning call center, and mobile and online banking facilities built on a cutting-edge IT infrastructure.

To support its branch network and maintain its leadership position, Garanti Bank requires centralized operations management, superior data warehousing, reliable management reporting systems, and effective alternative delivery channels. It enhances its operational efficiency and profitability by continuously investing in alternative delivery channels, such as internet banking, mobile banking, and Garanti Paramatik, the bank's ATM network. Most recently, Garanti Bank added Oracle Exadata Database Machine to improve data warehouse queries and support its goal of becoming the most profitable bank in Turkey. With Oracle Exadata, the bank can run faster reports, which gives users visibility into key metrics, including metrics for profitability and risk management.

Challenges

• Achieve high performance in data warehouse queries to support the bank's ambitious plans of becoming the most profitable bank in Turkey

• Enable accurate and timely reporting on data-intensive queries, such as for managing risk and profitability, vital to a growing financial services company and necessary to comply with increasingly rigorous regulatory reporting requirements

• Eliminate long-running data warehouse queries on mainframe computers due to low central processing unit power, especially on critical days, such as at the beginning and end of the month, tax payment days, and Mother's Day

• Provide the bank's 800 data warehouse end users with a better user experience and give them more time for analysis

• Improve backup strategy by enabling daily backups and reducing time required to complete them

• Avoid user complaints about the duration of report queries that originate from shortcomings in system power due to missing and suboptimal resources for data warehouse workloads

Solutions

- Deployed the preconfigured and ready-to-deploy Oracle Exadata Database Machine with Oracle Linux to consolidate data warehouse applications onto a common platform, increasing data warehouse performance substantially and reducing performance-related customer complaints to an insignificant number

- Transferred 2.5 terabytes of data daily from mainframe systems through 1,300 scheduled file transfer protocol loads and Oracle external table features, resulting in nearly 8 billion daily inserts. Used the full-rack Oracle Exadata Database Machine to convert more than 2,500 reports extremely quickly and easily—in merely 20 days—enabling 800 end users to run their reports at any time

- Moved from a first version full-rack Oracle Exadata Database Machine to a half-rack Oracle Exadata Database Machine X2-2 with high-performance SAS drives with a 600 gigabyte capacity to reduce data storage requirements with hybrid columnar compression from 17 terabytes to 5 terabytes, database server nodes from eight to four, and storage server cells from 14 to 7, improving performance by a factor of three while saving on floor space and energy consumption

- Used Oracle Exadata's smart scans and smart flash cache features to reduce the amount of data sent to servers and to break random input/output bottlenecks, achieving a 10-fold performance improvement in data warehouse queries

- Enabled employees to run reports in a few minutes instead of up to eight hours, freeing them to spend more time on subsequent processes, such as generating the same report with modified key parameters. Took advantage of time gained through faster query processing to more thoroughly test data, resulting in more reliable and accurate reports

- Enabled the bank to make data-intensive queries that it could not attempt before—for reports on things such as the management of profitability, customers, risks, products, and strategic performance—giving managers the information and time needed to make appropriate decisions, even on critical days. Optimized data backup with full instead of incremental backups, completing seven-terabyte backups in only three hours on Oracle Exadata Database Machine X2-2

Why Oracle

Garanti Bank did not consider other manufacturers, but compared Oracle Exadata Database Machine with the deployment of Oracle Unix boxes that included a storage area network. Oracle Exadata's predictable extreme performance-coupled with out-of-the-box configuration that offers the fastest time to value, lowest risk, and unlimited scale to match Garanti Bank's ambitious growth plans-clinched the decision.

Implementation Process

In three months, Garanti Bank moved from Oracle Exadata Database Machine Version 1 to Oracle Exadata Database Machine X2-2, including conversion of 2,500 reports.

GfK Group Retail and Technology Ensures Successful Growth with Exadata Consolidation

GfK Group Retail and Technology's retail sales tracking solution offers powerful insights into the consumer goods market with data from the world's largest retail network, reporting what's selling where, at what rate. GfK is one of the world's largest research companies, with 11,000 GfK experts working to discover new insights about the way people live, think, and shop in over 100 markets, every day. GfK is constantly innovating to use the latest technologies and the smartest methodologies to give its clients the clearest understanding of the most important people in the world: their customers.

Challenges

• Enable customers to access reports, such as worldwide key data for high technology consumer goods, directly from the data warehouse using an efficient and scalable hardware infrastructure

• Ensure satisfaction for 3,000 users, 50% of whom were customers who had been displeased with the previous environment's performance

• Shorten report cycles from monthly to weekly, without a decline in performance

• Maintain high storage and performance requirements for new projects, such as reports on communications services provided, including a mobile internet usage report

• Replace existing data warehouse infrastructure, which did not meet performance requirements, specifically in the storage sector

• Select a solution to address all needs without increasing the total cost of ownership

Solutions

• Ensured business intelligence self-service efficiency for customers for the next two years and efficient expansion thereafter ,based on a highly scalable, reliable, and stable data infrastructure

• Tripled performance by using Oracle Exadata Database Machine while maintaining low total cost of ownership

• Consolidated 50 distributed data marts into one Oracle Exadata system, thereby improving performance and reducing total cost of ownership

• Accelerated generation of global reports

• Implemented reporting for GfK's mobile internet service in its mobile internet usage report successfully, despite extremely large data requirements

• Tripled infrastructure performance while maintaining a low total cost of ownership

"The performance demands of our customers exceeded the capabilities of our legacy hardware environment. Oracle Exadata Database Machine has allowed us to manage our growth and handle additional projects."
Dr. Jens Albrecht, Head of Service Delivery, GfK Retail and Technology

Hong Kong Housing Authority Improves Ad Hoc Query Response Time by up to 97%

The Hong Kong Housing Authority (HA) is a statutory body established in April 1973. HA develops and implements a public housing program that seeks to achieve the Hong Kong Special Administrative Region Government's policy objective of meeting the housing needs of people who cannot afford private rental housing. HA manages over 700,000 residential units, which house approximately 30% of Hong Kong's population.

Challenges

• Improve the performance of the corporate information system, which collects data from 14 other systems, including the estate management system, and consolidates it in a data warehouse for summary reporting and ad hoc querying

• Increase the speed at which ad hoc requests are processed, which, in some cases, could take days to complete

Solutions

• Migrated the Corporate Information System to Oracle Exadata Database Machine running Oracle Database 11g with Oracle Real Application Clusters

• Improved response times for ad hoc queries such as revenue collection (by estate and collection amount) by 80%; and arrears and revenue trend analysis by 97%

• Achieved average query response times of four to five seconds, ensuring users no longer had to wait minutes or hours for information on the type and location of available housing

• Cut day-end batch processing time by eight hours, from 13.5 to 5.5 hours

• Reduced month-end batch processing time, ensuring senior managers can review developments in public housing trends at the start of each month

"We were looking for a holistic solution capable of delivering quick, dramatic improvement. The results after the implementation of the Oracle data warehouse solution were very impressive. In addition, the solution will also enable us to upgrade smoothly to the new release of Oracle Database, adding an extra dimension to the existing performance benefits."
Raymond Chu, Head, IT, Hong Kong Housing Authority

Hotwire, Inc. Enhances Ability to Compete in Online Travel with High-Performance Data Warehouse

Hotwire is a leading discount travel site that works with major travel providers to help them fill seats, hotel rooms, and rental cars that would otherwise go unsold. Travel-value hunters have come to rely on Hotwire for deep discounts on highly respected travel brands. The Hotwire Group also includes Car Rentals.com and Travel-Ticker.com.

Challenges

• Provide high-performance environment to support advanced analytics, a key competitive advantage for Hotwire

• Drive data-intensive site features, marketing programs, and data mining to ensure travel industry competitiveness

• Deploy a data warehouse solution that will scale to support increasing growth in data volume, data warehouse users, and complexity of business intelligence demands

Solutions

• Deployed Oracle Exadata Database Machine to improve data warehouse performance and to scale for growing business needs

• Migrated 10 terabyte data warehouse onto Oracle Exadata with Oracle Linux in just six months

• Improved reliability and scalability of system at a low cost

• Cut extract, transform, load (ETL) processing time in half

• Improved query response time by an order of magnitude

• Deployed Resource Manager to enable around-the-clock access to warehouse, even during resource-intensive ETL periods

• Enabled analyses that hadn't been possible on previous system because of data volumes or system resource constraints

• Improved accuracy of models with larger sample sizes

• Provided a platform for analytic innovation, helping Hotwire deliver compelling, personalized travel deals to customers

• Simplified the data warehouse environment, eliminating the need to bring in new expertise by going with a familiar Oracle platform

• Established a solid foundation for future growth to support business needs, including two sister Web sites, Travel-Ticker.com and CarRentals.com

"Oracle Exadata Database Machine allows us to support increasingly complex analytic work on rapidly increasing data volumes. By removing system performance constraints, it encourages more innovative data use and gives us a significant advantage in the highly competitive discount travel industry."
Kolin Ohi, Business Intelligence Architect, Hotwire, Inc.

> "Oracle Exadata Database Machine is a cost efficient, high performance, and scalable system that has provided us with an optimal data warehouse infrastructure, not only for the next three years but for the long term."
> **Holger Haun**, Managing Director, IDS GmbH – Analysis and Reporting

IDS GmbH – Analysis and Reporting Services
– Optimizes Central Data Warehouse System for Allianz

IDS GmbH – Analysis and Reporting Services is a subsidiary of Allianz SE and specializes in providing operative investment controlling services for the capital investments of the Allianz Group and third-party clients. Allianz's investment controlling services apply both to investments made by its insurance companies and asset management division. For this purpose, IDS operates and maintains a financial database for Allianz.

Challenges

• Eliminate storage bottlenecks caused by performance and risk analyses of the company's finance and insurance portfolio, as well as finance-specific reporting for the Allianz Group

• Provide a solution able to handle the number of source systems—including stock market prices, share price indices, and inventory data—which grew from 200 to 250 since the implementation of a data warehouse

• Perform overnight batch jobs in required time frames to provide up-to-date data for analysis

• Ensure support for an active user base—which had doubled since the original data warehouse deployment

• Provide capacity to reliably and efficiently handle ad hoc queries and generate financial and risk analysis reports several times daily rather than monthly—with no performance issues

Solutions

• Worked with Information Systems Engineering GmbH to perform a smooth migration of the disk-based Oracle Data Warehouse to Oracle Exadata Database Machine X2-2 without coding or design modification—eliminating programming costs

• Migrated all financial data—approximately 12 terabytes(TB)—in one day, to support continued data growth

• Ensured high performance data consolidation from 250 source systems—including stock market prices and share price indices, as well as inventory data from more than 7,000 portfolios with more than 250,000 different active investments—within the defined timeframe for each

• Optimized performance by a factor of four by deploying the system out-of-the-box—without any tuning or customization

• Achieved efficient access for 1,500 active financial users

• Tripled performance and storage capacity—from 50 TB to 150 TB—without increasing total cost of ownership

Immonet GmbH Uses New Data Warehouse to Consolidate Real Estate Data, Enable Real-Time Information Access, and Improve Decision-Making

"Oracle Exadata Database Machine is the most highly performing solution on the market. Oracle is the only company that offers a one-stop shop-approach for data warehousing, as it can deliver everything, from hardware and databases, to business intelligence solutions and implementation. This is a clear advantage for Oracle, and we are elated with the results of our data warehouse project."
Christian Maar, Chief Executive Officer, Immonet GmbH

Immonet is one of Germany's leading real estate Web sites. Each month, more than 2.6 million users visit its online portal, which includes 1.14 million real estate listings (source: comScore Media Metrix's ranking for "Total Unique Visitors," July2011). The company's growth initiative, which began at the end of 2010, resulted in an exponential increase in the data handled by its portal. As a result, Immonet needed the ability to be the first to react to market changes.

To meet this challenge, Immonet worked with Oracle Platinum Partner Information Systems Engineering GmbH (ISE) to implement, in less than six months, Oracle Business Intelligence Suite Enterprise Edition Plus On Demand, running on Oracle Exadata Database Machine X2-2.

With the implementation, Immonet established a single repository for storing and processing real estate data, one capable of handling a 350% increase in data while maintaining optimal system performance. In addition, Immonet unified its key performance indicators (KPIs) to enhance financial reporting for more efficient and sound decision-making.

Challenges

• Ensure that Immonet's IT infrastructure is capable of supporting significant growth in business and real estate listing data while maintaining optimal performance requirements

• Centralize and consolidate real estate and financial data for efficiency

• Unify KPIs for business areas—such as the number of contracts, visits, page impressions, unique users, churn rate, customer life cycle, sales staff efficiency, contract value, and conversion rates—to create real-time reports that assist executive decision-making

• Replace ad hoc budget controls using Excel and SQL with data warehouse-based, centralized, automated, and accelerated budgetary control

• Improve agility for capitalizing on real estate market changes and new trends, made difficult with heterogeneous systems and a lack of transparency

• Create accurate forecasting scenarios that enable the company to prepare for further market reactions

• Prepare Immonet for future growth, meeting a 100% growth target in 2011

Solutions

- Established a single repository for Immonet's real estate data, such as properties for sale or rent, using Oracle Exadata Database Machine X2-2

- Used Oracle Exadata Database Machine X2-2 to connect with nine relevant source systems—including Oracle Database, customer relationship management systems, and Google Analytics—to effectively manage a data volume that had grown by 350%

- Reduced IT energy costs by 90% and lowered total cost of ownership for the portal by 75%, due to the consolidated IT environment

- Gained the ability to access real estate data as much as 100 times faster, enabling the organization to evaluate the data within minutes instead of weeks

- Leveraged Oracle Business Intelligence Suite Enterprise Edition Plus On Demand to acquire the reliable and consistent information that management needs to make more informed decisions, including data on customer lifecycle value, customer segmentation, sales resources, budgetary controls, and budget allocation for online and offline marketing

- Standardized business information to acquire consistent KPIs for real estate operations, such as customer lifecycle value, churn rate, competition, real estate listings, and agent market shares

- Improved ability to quickly respond to changes in a dynamic market environment by leveraging real-time financial data, real estate data that reflects current business performance, and expanded reporting capabilities

- Enabled easily access Oracle Business Intelligence Suite Enterprise Edition Plus On Demand through a Web interface to decrease time spent on data analysis and research and increase employee satisfaction

- Improved generating online offerings, such as regional average market price per real estate object and regional customer demand analysis for real estate agents, by leveraging Oracle Exadata Database Machine's optimized online transaction processing features

- Expanded customer segmentation capabilities, which helped to increase sales efficiency

- Improved analysis of search engine marketing to optimize investment in key words that deliver the best results

- Worked with Oracle Partner ISE and Oracle Consulting to seamlessly implement the data warehouse environment

Partner

ISE delivered and implemented Immonet's complete data warehouse solution, based on Exadata hardware. It established the data warehouse infrastructure, developed and implemented the backup recovery system, setup the database and business intelligence server, developed and fine-tuned the business intelligence application, and conducted workshops for end-users and administrators before final project handover to the client.

Information Systems Engineering GmbH
Enables Customers to Achieve Extreme Processing

Information Systems Engineering GmbH (ISE) provides IT consulting and implementation. ISE works with customers to optimize their business processes with a complete service portfolio that ranges from analysis and consulting to IT planning, application development, performance tuning of Oracle Database environments, system administration, and IT infrastructure implementation.

Challenges

• Enable ISE's enterprise clients, which include e-commerce platform providers, logistics companies, and consumer goods manufacturers, to enable extreme performance for both data warehousing and online transaction processing (OLTP) applications

• Support efforts to reduce IT costs through consolidation, manage more data on multiple compression tiers, improve application performance, and make better business decisions in real time

Solutions

• Built first test center in Germany that enabled current and potential customers and independent software vendors to test Oracle Exadata Database Machine live with their own data to assess the benefits it can deliver for their organizations

• Enabled an e-commerce platform provider to load data 35 times faster and achieve an OLTP benchmark that was five times faster than its legacy environment consisting of a four-node Oracle Real Application Clusters configuration

• Enabled a pet food manufacturer to increase query speed by 200% in a test environment using one terabyte of data

• Enabled a logistics company to achieve data loading that was 40 times faster and reporting that was 5 times faster than the company's existing environment

"Our new test facility enables organizations to experience firsthand the extreme processing that they can achieve with Oracle Exadata Database Machine. Most are amazed at how they can achieve reporting that is 20 to 50 times faster with the Oracle solution."
Herbert Rossgoderer, Chief Executive Officer, Information Systems Engineering GmbH

KyivStar, JSC Reduces Storage Volumes to 15% of Its Legacy Environment and Increases System Productivity by 500% with High-Performance IT Infrastructure

"Our mission is to make life better for our customers by providing the highest quality communication services. To achieve this goal, we need a fully reliable and scalable IT platform that provides unparalleled performance. That's why Oracle Exadata Database Machine is so important for us. We choose Oracle as a strategic partner, and the performance gains we achieved have influenced our service quality significantly."
Andrei Peshiy, Head of IT Department, KyivStar, JSC

KyivStar, JSC is Ukraine's foremost mobile communications and mobile internet provider, making the company one of the most visible Ukrainian brands. KyivStar's wireless network operates using the global system for mobile (GSM) communication standard and provides coverage accessible to approximately 99% of the Ukrainian population. In October 2010, KyivStar merged with Beeline-Ukraine, a leading provider of landline communications and communication solutions for business clients to create the largest private communications company in the country, serving 25 million subscribers.

KyivStar deployed Oracle Exadata Database Machine to help it effectively serve its more than 25 million subscribers and make its systems fault-tolerant. The company's IT infrastructure adds 6 billion records daily, totaling 60 gigabytes of data, including call data records (CDRs), so this is no easy task. Oracle Exadata helped the company achieve record-breaking data processing results. It increased financial and analytical calculation performance by 300% to 500%, and provided KyivStar with a foundation to retain the leadership spot in the Ukrainian telecommunications market.

Challenges

• Enhance processing power to efficiently serve the company's more than 25 million communications services subscribers in an environment in which it adds 6 billion records totaling 60 gigabytes of data each day to its databases

• Make KyivStar's systems fault-tolerant to ensure on-demand customer service

• Improve analytical calculation performance, as well as financial reporting, to quickly provide management with insight into the company's financial position

• Ensure that the company correctly calculates mobile and landline telephony taxes

• Facilitate the detection of data losses, due to such things as erroneous system operations or fraud, for periodical financial reporting required by online services

Solutions

• Deployed Oracle Exadata Database Machine to achieve record-breaking data processing results, increasing financial and analytical calculation performance by 300% to 500%, and providing KyivStar with the foundation to remain the leader in the Ukrainian telecommunications market

- Reduced storage volume to merely 15% of its legacy environment—from 444 terabytes to 70 terabytes—resulting in significant savings in energy consumption and data center floor space

- Enabled the company to effectively monitor revenues and margins, apply taxes correctly and quickly, and detect data losses due to errors or fraud by consolidating all key subsystems, such as financial reporting services or online services for subscribers—all within a year of deploying Oracle Exadata Database Machine

- Optimized the company's risk assessment processes, retrieving data samples five times faster than before, and executing risk analyses two to three times faster

- Deployed Oracle Active Data Guard 11g to improve system reliability by allocating physical space in databases, freeing IT resources for report generation and analytical tasks, such as analysis of the company's 25 million subscribers by services, zones, and call types

- Gained the ability to analyze and gain insight into key performance indicators—such as customer acquisition and churn, channel performance, average revenue per subscriber, and network performance—twice as fast for more timely and informed decision-making

- Made systems fault-tolerant by adding a new half-rack Exadata Database Machine X2-2 with small computer system interface (SAS) disks connected serially for the company's second data processing center

- Revised purchase plans for disc arrays, as no other solution provides the performance of Oracle Exadata Database Machine

"Oracle Exadata has helped us consolidate 15 years of historical data onto a reliable data warehousing solution that enables us to scale for future growth. The solution allows us to guarantee high performance and will play a vital role as we expand globally."
Jonathan Levine, Chief Operating Officer, LinkShare Corporation

LinkShare Corporation Manages Large Volumes of Historical Data with Flexible Data Warehouse Solution

LinkShare Corporation provides Fortune 500 businesses with a wide range of online marketing services, including search engine marketing, lead generation and affiliate marketing. LinkShare has significantly enhanced the performance and availability of its reporting and analysis services for hundreds of thousands of advertisers and publishers in its network.

Challenges

• Enable the company to easily manage huge volumes of historical e-commerce data in a consolidated database that can scale for future growth

• Provide ability to meet the needs of the company's advertisers and publishers as it continues to expand globally, and as online advertising and e-commerce continue to grow

• Deploy flexible reporting and analysis tools, including sophisticated dashboard functionality for business users

Solutions

• Worked with Oracle Partner Pythian to plan, deploy, and manage Oracle Exadata, using Oracle Database and Oracle Database with Real Application Clusters to deliver better value to LinkShare Corporation

• Improved processing efficiency with the ability to control space and power demands in the company's data warehouse, reducing data center floor space and power requirements by 400%

• Achieved an eight-fold increase in database query speed while reducing servers and storage by eight-fold

• Leveraged employees' existing Oracle transactional environment experience to streamline database and systems management teams—improving operational efficiency

• Used Oracle Enterprise Manager to quickly identify trouble spots, troublesome queries, and ways to keep the transactional databases running smoothly

• Cut in half the average response time for customer queries

• Provided advertisers and publishers direct access to data through an application built on top of Oracle Business Intelligence Suite Enterprise Edition, enabling them to assess trends and analyze historical data

• Enabled advertisers and publishers to analyze the performance of their campaigns in near real-time

Procter & Gamble Completes Point-of-Sale Data Queries up to 30 Times Faster, Reduces IT Costs, and Improves Insight with Engineered Data Warehouse Solution

"With Oracle Exadata, we have a single machine-combining hardware and software-that forms the foundation for our business intelligence environment. This simplifies our IT landscape significantly, helps us reduce costs, and gives us a single partner for managing our end-to-end environment."
Jim Fortner, Vice President of IT Development and Operations, P&G

Procter and Gamble (P&G) touches the lives of approximately 4.4 billion people in 180 countries with its extensive consumer-brand portfolio, which encompasses personal care, household cleaning, laundry detergent, and prescription drug products. The company's leading brands include Pampers, Tide, Ariel, Always, Whisper, Pantene, Mach3, Bounty, and Dawn.

Challenges

• To foster innovation and effectively meet changing market demands, the P&G Global Business Services (GBS) organization relies on insight from terabytes of point-of-sale data collected from retailers around the globe

• As data volume and business intelligence requirements grew, the company began to reassess its legacy data warehouse environment

• The infrastructure, which included multiple Oracle and nonOracle database environments, was costly and inefficient, restricted business agility, and resulted in siloed customer data that prevented optimal visibility and analysis

• Point-of-sale data queries could take hours and sometimes would fail to process

• GBS looked for a way to improve the performance and cost-effectiveness of its data warehouse environment and wanted to expand its analytical and brand decision-making capabilities. Consolidating point-of-sale data into a single data warehouse platform was fundamental to these objectives

• "We had essentially two challenges in the data warehouse space. We wanted to cut costs and improve performance when analyzing massive amounts of data," said Corrado Azzarita, director, IT development and operations, P&G

Solutions

• After considering several options, GBS selected Oracle Exadata Database Machine as the foundation for its new data warehouse infrastructure, initially deploying V2 machines and later expanding with X2-2 and X2-8 machines to fully convert multiple data warehouse landscapes to Exadata hardware

• The solution provides a complete, optimized package of software, servers, and storage that deploys rapidly and streamlines IT management

• With the implementation, the company consolidated customer point-of-sale data into one repository, enhancing control over information assets and extending visibility

- Expanded analytical capabilities are enabling P&G to enhance its business agility and scalability to support continued innovation and growth. Today, the company can respond more quickly to emerging trends and needs

- Using Oracle Exadata, GBS can complete some queries up to 30 times faster

- Prior to the implementation, one periodic end-user query required upwards of 20 hours to complete, sometimes failing to complete the cycle entirely

- With Oracle Exadata, the same query takes three minutes to complete

- In addition, the company streamlined operations and improved stability by consolidating information into a single repository

- "With Oracle Exadata, we can conduct analysis and respond to the data much quicker than ever before. The end-to-end support model is a second benefit," said Jim Fortner, vice president of IT development and operations, P&G

- "You have hardware, software, and support all wrapped up from a single vendor. Cost is the third major benefit. It's simply easier and more cost-effective to own and manage. From a performance, cost, and support perspective, Oracle Exadata Database Machine is creating big value for P&G."

Why Oracle

"We chose Oracle Exadata because we wanted an out-of-the-box, end-to-end solution from one vendor that dramatically improved our data warehouse performance, while simplifying our support structure and reducing costs. Oracle provides a breakthrough business model for P&G. We're getting a total solution in a box," Fortner said.

"From a performance standpoint, we can get, out of the box, with Oracle Exadata a much better performing application than we can by investing time, money, and resources in tuning the application on our legacy platform. From a price standpoint, getting a preconfigured, integrated, out-of-the-box solution from Oracle dramatically simplifies the amount of time and money we have to invest in building and maintaining our data warehousing platform," said Brian Beckman, data warehouse platform manager, P&G.

"Oracle is one of P&G's strategic partners," he continued. "We're counting on Oracle to drive innovations like Exadata into P&G to help us digitize our business and enable better analysis of consumer behavior so we can touch and improve more lives more completely."

Robi Axiata Limited, A Fast-growing Mobile Telecom Leverages Oracle Exadata to Accelerate Customer Insights and Control Costs; Achieves Payback in One Year

"We have witnessed excellent results with Oracle Exadata Database Machine. It has helped us to simplify our IT infrastructure and reduce operation cost. The Oracle Exadata Base Machine has enabled the mobile operator to increase data mining and analytical efficiency to provide better services to Robi customers."
AK Monzur Morshed, Chief Technical Officer of Robi

About Robi Axiata Limited

Axiata is one of the largest Asian telecommunication companies focused on high growth/low penetration emerging markets. Axiata has controlling interests in mobile operators in Malaysia, Indonesia, Sri Lanka, Bangladesh and Cambodia with significant strategic stakes in India, Singapore and Iran. Formed in 1997, Robi Axiata Limited, a joint venture of Axiata Group Berhad, Malaysia, and NTT DOCOMO INC. in Japan, is a dynamic and leading countrywide GSM service provider in Bangladesh with 15.2 million customers.

Executive Summary

Since its debut in 1992, the Axiata Group has made good on its motto: "Advancing Asia." The pioneering Malaysia-based mobile telecommunications company has advanced to the point that it now has 168 million individual and business customers in 10 countries, achieving its fast growth by investing in emerging, low-penetration markets previously overlooked or underserved by other operators. In 1997, it entered Bangladesh, where its subsidiary Robi Axiata Limited (Robi) now serves around 15.2 million customers.

Although technology innovation is integral to the parent company's global strategy, Robi had a specific need for it in Bangladesh, where attracting and retaining customers primarily depend on product and service differentiation rather than price. To execute that strategy, Robi built a business intelligence infrastructure to help analyze customer behavior, target the most profitable customers and respond rapidly to market shifts.

The company's existing infrastructure,[1] however, lacked the capacity to keep up with Robi's massive and growing data-processing demands, including analyzing more than 100 million call detail records (CDRs) per day. Robi needed a fast, reliable, and scalable business analytics platform that wouldn't burden the company with high operating costs.

To achieve the speed, dependability and savings it was looking for, Robi turned to Oracle Exadata Database Machine, a computing platform that uses innovations in smart storage to dramatically boost performance and manage more data. After the Exadata rollout—a smooth process that took just one week—Robi reported significant system performance increases, including exponentially faster data loading and query speeds, and lower system utilization.

In its assessment, Mainstay Partners calculated a range of business benefits from the move to an integrated Exadata-based platform. These included IT savings in the form of avoided hardware and software costs, and significant storage infrastructure savings. Moreover, the faster analytics is eliminating reporting delays, boosting business user productivity, and enabling the company to gain rapid and reliable insights into customer preferences and profitability.

[1] **Robi's legacy data warehouse infrastructure included three low-end HP servers, Oracle 9i Database, in-house ETL tools, Business Objects for OLAP, and other in-house applications.**

Key Benefits:

- 60% ROI, and payback within the first year
- Total savings of $2.1 million over three years
- $1.3 million savings to business users through increased productivity
- 7–10x better compression
- 5 percent increase in profitable customer base; 10% boost in customer loyalty
- 5–50x faster query reports
- 15% decrease in utilization

According to Mainstay Partners' assessment, Robi's investment in Oracle's products and services will achieve a 60% return on investment and yield total benefits of US$2.1M (BDT155.9 million) over three years. Furthermore, the investment will pay for itself in less than one year.

Background

Robi Axiata Limited, a joint venture of Malaysia's Axiata Group Berhad and Japan's NTT Docomo Inc., introduced the Aktel brand into the Bangladeshi market in 1997 under the name Telekom Malaysia International (Bangladesh). Axiata was one of the first GSM mobile telecommunications companies to enter the country, and was rewarded by capturing a significant portion of the market. "Our aim has always been to create distinct services with local flavor to remain close to the hearts of our customers," said Michael Kuehner, Robi's Managing Director and CEO.

But as the eighth-most populous country in the world and with a Next Eleven (N-11) economies designation from Goldman Sachs, Bangladesh became a magnet for mobile telecom companies. Competition intensified; prices for phones and service stabilized at low rates; and service, products, and innovation became the only way to attract and retain customers. Campaigns—and data on how they were working—became more frequent and important. However, increased campaign demands began to strain Robi's underlying data warehousing and business intelligence system, underscoring its weak processing capabilities and lack of storage space. Robi also noticed that its two biggest competitors both had extensive processing capacity for their commercial activities.

The need to improve its campaigns and compete within these new and technologically more sophisticated parameters prompted Robi to re-examine its entire IT infrastructure, which was essentially added onto and layered over its original 1997 grid. "A cutting-edge technological system had become a necessity for Robi to compete effectively in the market," Kuehner said.

Robi wanted a system that would address a range of issues, including inadequate data processing capabilities and storage space. The new system needed to support ongoing data analysis of subscribers' call patterns and usage trends, carry out detailed, segmented customer-cohort analysis, and generate effective and comprehensive post-marketing campaign evaluation reports.

The Oracle Exadata Solution

Oracle Exadata Database Machine represents a breakthrough in information technology, using an innovative software stack and unique architecture built on industry-standard hardware. The system combines servers, storage, networking, and software in a fully integrated platform that is hugely scalable, highly secure, fully redundant, and less costly to operate. As Robi IT executives observed, the result is significantly faster performance for data warehousing applications.

Robi installed an Exadata Database Machine X2-2 Half Rack in May, 2010, consolidating its data warehouse onto one integrated platform. Robi also deployed Oracle Data Mining on its Exadata platform to improve marketing campaigns and gain deeper insights into its customer base. Robi manages the entire stack using Oracle Enterprise Manager.

Because the core system components were built from an integrated Oracle technology stack, Exadata was fast and easy to deploy. Hardware installation took one day; software took another day; and the database and warehouse framework, configured to support Robi's existing data warehouse structure, took three days. Within one week, Robi had the new system up and running, including migrating all the legacy data. "The migration was remarkably easy, said Rana Shohel, vice president, Robi. "Going with Oracle saved us time in not having to do extensive rewiring of applications into a different environment."

Operational And Strategic Benefits

Directly after moving to Oracle Exadata, Robi began to see an array of operational and financial benefits, ranging from million-dollar productivity gains among its business clients to a marked rise in customer satisfaction. From a strategic perspective, Exadata has given the company the platform it needs to compete more effectively, support growth, and boost customer loyalty—while at the same time containing IT overhead costs.

Figure 1: 5–10X Faster Reports
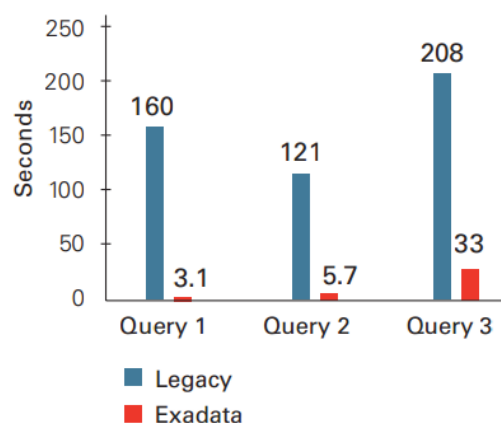
Significantly Higher System Performance

As a direct result of the performance enhancements from Exadata, Robi can now run reports significantly faster—typically 5–10 times faster, but in some cases as much as 50 times faster than in the previous environment. "We saw first-hand the power of conducting non-index searches and what that could mean for product development and for our customers, and how it could potentially transform our business," said Shohel.

How Exadata Maximizes Performance

• **Exadata Smart Scan.** The smart storage software in Exadata offloads data-intensive query processing from Oracle Database 11g servers to Exadata's storage layer for parallel data processing. Because there's less data moving through the higher bandwidth connections, performance improves significantly as well as concurrency for simple and complex data warehousing queries.

• **Exadata Smart Flash Cache.** With more than 5 terabytes of flash memory per full rack, Oracle Exadata intelligently caches "hot" data and assigns the rest to disk storage, giving organizations the speed of flash with the cost-effectiveness of disk storage. Exadata Smart Flash Cache can process up to 1.5 million random I/O operations per second and scan up to 50 GB of data per second to deliver ultra-high performance for OLTP applications.

The move to Exadata also enabled Robi to avoid reporting delays that it was experiencing when system utilization approached 100% during peak hours. Today, Robi's utilization rates are running at about 85%, affording the company enough headroom to maintain superior performance. Robi also saw an immediate and substantial drop in data warehouse loading times—from one hour on the legacy system to six minutes on Oracle Exadata, as shown in Figure 3.
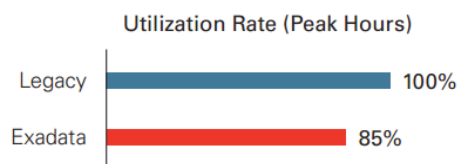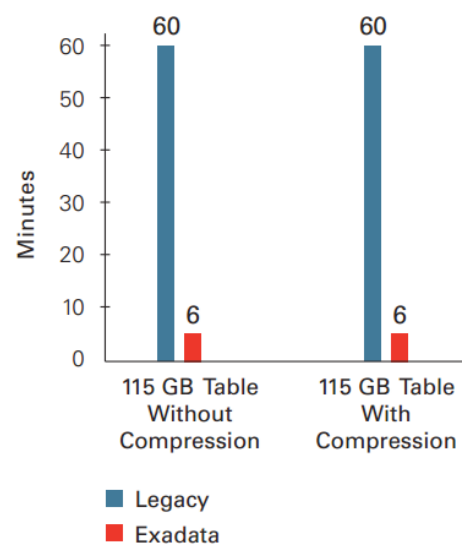
Figure 2: 15% Reduction Utilization Rate

Figure 3: Data Loading Time by Minutes

US$1.3M Productivity Savings for Business Users

The boost in system performance is leading to significant increases in business user productivity. With Robi's business analysts (about 50) running about 6,000 searches per day, the speedier Exadata platform means users spend substantially less time validating and re-running reports and data. The improvement is expected to save an estimated 3 hours per user per day, translating into savings of more than US$1.3M over three years. The company will benefit by giving business users more time to spend on value generating activities.

End-User Deliverables Supported by Exadata	
• Business Analytics	• Data for Strategic Analysis
• Decision Support Analytics	• Financial Reporting
• Strategic and Business Decision Support Analytics	• Revenue-Stream Data
• Campaign Management	• Analytics for Technical and Operational Support
• CRM Analytics (Customer Satisfaction, Complaints, Customer Care Service)	• Different Statistics regarding Technical Systems

Deployment Cost Savings

Leveraging Exadata's pre-integrated infrastructure and dedicated vendor support, Robi saved significantly on deployment time and costs. Robi estimates the Oracle Exadata deployment required about 90% fewer hours to implement compared to a typical data warehousing solution. The integrated system's overall simplicity, ease of adoption, and streamlined network architecture also contributed to the economical deployment. As shown in Figure 4, Robi estimates it saved US$95K (BDT7.1 million) on implementation costs alone.

Figure 4: Streamlined Exadata Deployment Yields Savings

	Deployment Hours	IT Resource Time Cost to Deploy
Typical Comparable Solution Deployment	320	$180,800
Oracle Exadata Deployment	40	$13,600
Estimated IT Deployment Savings	280	$95,200

Lower System Ownership Costs

By consolidating its data warehouse and analytics operations on a single integrated Exadata system, Robi will garner significant savings in the form of avoided hardware outlays and lower software licensing costs, the assessment showed. "All the hardware and software components are engineered to work together, be managed together and supported together, resulting in lower total cost of ownership and lower ongoing costs," Shohel observed.

According to the assessment, Robi will avoid an estimate $250K in hardware costs by consolidating multiple systems onto Exadata, and will save approximately $250K on lower software and licensing costs.

Figure 5: Handling More Data with Lower Utilization

eBIS at a Glance	
Old	**Current** **(now supported by Exadata)**
• ~100m CDRs/day	• 300m+ CDRs/day
• 7.5m customers	• 15m+ customers
• 20 data sources	• 30+ data sources
• 15 BO licenses	• 50 BO licenses
• 5 TB of storage	• 40 TB of storage
• 100% system utilization (peak hours) causing huge delays in reports generation	• 500 marketing campaigns per quarter
• 10–12 marketing campaigns per quarter	• Comprehensive analysis based on SIM, time and location
• In-house simple data extraction and data mining tools	• 40 TB of storage
• Limited analysis and data retention	• Longer data retention

US$200K Storage Cost Avoidance

Robi will also benefit from using Exadata's compression capabilities to cost-effectively scale out system capacity when needed and extend the life of its storage infrastructure. Robi's IT administrators observed that most Oracle Exadata tables can be maintained at 2X compression levels with no loss of performance, and that less frequently accessed information can be stored at 7X to 10X compression without impacting performance. Extended storage capacity will mean that Robi can avoid near-term purchases of additional storage equipment – a benefit that will save the company an estimated US$200K over three years.

Improved Customer Insights

At the end of the day, the performance advantage provided by Exadata is about getting business insights into the hands of decision makers in a more timely fashion. Today, business decision makers at Robi are accessing customer data and running more complex market analytics faster than ever before. The result is accelerated response to market shifts, a more complete view of the customer (through a profitability matrix), and better support for marketing campaigns and business initiatives.

Benefits Summary

According to Mainstay's projections, Robi's investment in the new Oracle Exadata platform is expected to generate total business and IT benefits of approximately $2.1M over three years, as shown in Figure 6. The largest portion of the benefits will come from ongoing business user productivity increases, with additional benefits coming from avoided hardware and software cost avoidance and system deployment savings. Robi is expected to breakeven on its investment in less than one year and is on track to earn a 60% ROI over three years.

Figure 6: Benefits by Category—Three-Year View
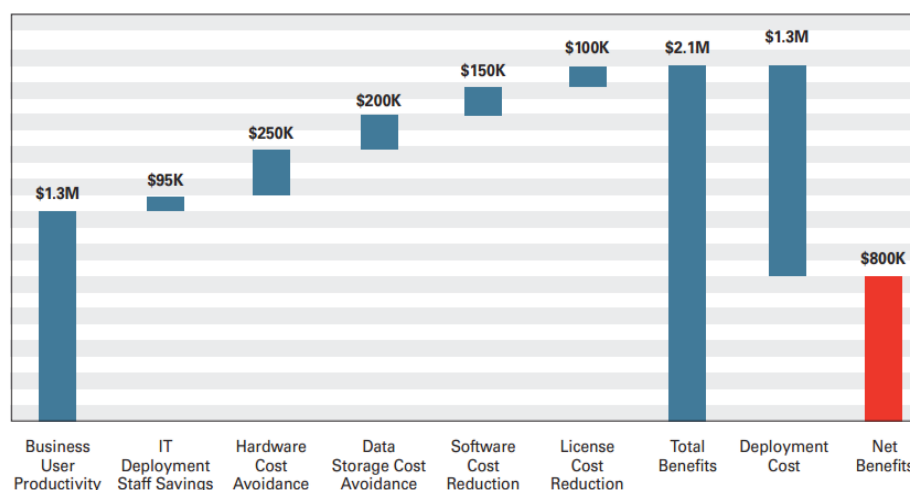
SK Telecom Strengthens Real-time Service Analysis and Enhances Customer Satisfaction

"We use Oracle Exadata Database Machine as the high performance database platform to bring together data from our systems for roaming and usage enquiries. Both systems had become more elaborate due to the increased complexity of data analysis and verification. Presently, Oracle Exadata Database Machine processes on average 40 billion transactions each day with no strain on the hardware components."
Jin-hyung Lee, Manager, Network Engineering Department, SK Telecom

SK Telecom is Korea's largest mobile communications service provider, specializing in data-driven applications and advanced multimedia services delivered to cell phones, personal digital assistants, and MP3 players. It provides music and streaming video services such as movies, video clips, animation, games, sports, and television programs, as well as real-time financial information (such as stock trades, investments, and insurance policies).

Since its foundation in 1984, SK Telecom has maintained its commitment to customer service. In 2009, the company was ranked first in the national customer satisfaction index (NCSI), the Korea customer satisfaction index (KCSI), and the Korean standard service quality index (KS-SQI). SK Telecom was also voted most innovative company of the year by Wall Street Journal Asia.

SK Telecom leads in customer satisfaction by being innovative. The company's aim is to improve satisfaction by providing detailed and accurate usage information in real-time, which would help users obtain the information they want without having to go through complicated call center procedures.

Providing a Better Customer Experience

SK Telecom prides itself on being an innovative communications company that introduces new products and services ahead of a changing market. Due to the increasing demand for more wireless mobile data from smart phone customers, SK Telecom became the first mobile communications operator in Korea to introduce rate plans with unlimited data usage. This led to a large increase in data volumes and, as a result, the company's data analysis and verification processes became more complex.

To address these issues, SK Telecom developed a range of support systems, including a data billing analysis system in October 2009, the first system to benefit from increased performance through the use of Oracle Exadata Database Machine. The company migrated to Oracle Exadata Database Machine V2 in December 2010. Due to rapid increases in database size, in May 2011 SK Telecom added Oracle Exadata Database Machine X2-2, incorporating Exadata Storage Server Software, enabling the company to store 1 petabyte (PB) of raw data. A second system was developed to offer more detailed categorization of usage data, making available that data in real-time.

SK Telecom also implemented a third system: a roaming data inquiry system based on the prediction that customers would increasingly demand access to more detailed usage information. The system would also support the increase in roaming data traffic due to the use of services such as e-banking and e-mail. All three systems benefit from improved performance on Oracle Exadata Database Machine V2 and Oracle Exadata Database Machine X2-2.

Achieved 10:1 (10x) Data Compression Rate

"In comparison to custom-built equipment with similar capabilities, Oracle Exadata Database Machine has overwhelmingly superior performance, with average data processing rates 8 to 20 times greater than other SK Telecom in-house systems."

Jin-hyung Lee, Manager, Network Engineering Department, SK Telecom

Today SK Telecom runs 70 billing collection systems on Oracle Exadata Database Machine V2 and Oracle Exadata Database Machine X2-2. The systems process, on average, 40 billion transactions each day, equivalent to 10 terabytes (TB) of raw data.

SK Telecom compresses raw user data before it is loaded into Oracle Database 11g. "We use the Oracle Exadata Hybrid Columnar Compression technology to compress around 10TB of raw data each day, reducing the data size to 1TB, achieving a 10:1 (10x) compression rate," said Jin-hyung Lee, manager, network engineering department, SK Telecom. "This means we need fewer storage resources."

Oracle Exadata can support 560 simultaneous users per hour, with data processing rates between 8 to 20 times greater than other SK Telecom in-house systems. It is also two to three times faster when it comes to real-time extract, transform, and load processes, as well as daily batching and fact generation.

Strengthening Responsiveness by Enhancing Service Analysis

In 2009, SK Telecom deployed Oracle Exadata Database Machine to run a data billing analysis system, which checks for any billing inconsistencies before invoices are sent to customers. This led to a10-fold improvement in data warehouse querying performance and enhanced billing accuracy, which uncovered millions of dollars of unbilled revenue. This delivered a very quick return on investment (ROI).

With the introduction of the data billing verification system in 2009, SK Telecom also gained the ability to provide proactive services, which reduced the cost of labor assigned to answering customer billing inquiries and increased customer satisfaction.

In 2010, SK Telecom implemented Oracle Exadata Database Machine V2. In the same year, the company also introduced usage data and roaming data inquiry systems, further enhancing proactive services as these systems allow customers to search for their roaming data usage information.

In response to a rapidly growing database, in May 2011SK Telecom implemented Oracle Exadata Database Machine X2-2, incorporating Exadata Storage Server Software, enabling the company to store 1PB of raw data.

As the Oracle Exadata Database Machine platform collects and processes data in real-time, SK Telecom can now develop a data traffic prediction system. This system can systematically prepare for the increase in data traffic caused by the rise in the use of mobile internet services, both in Korea and abroad.

As demand for more data throughput increases and customer expectations grow, SK Telecom aims to expand areas of analysis used for planning and predicting services. The company is also seeking to improve the volume of data throughput and accuracy, and it plans to utilize new solutions and optional functions offered by Oracle, such as database compression and partitioning, to enhance the performance of existing systems.

Easy Data Integration and Analysis

SK Telecom implemented Oracle Data Integrator to ensure data from its various systems can be easily integrated into the Oracle Exadata Database Machine. Oracle Data Integrator provides extremely fast data integration capabilities, while ensuring maximum availability of the Oracle Exadata Database Machine.

The company also uses Oracle Business Intelligence Enterprise Edition to analyze billing data, customer usage and roaming information, and trends in mobile internet usage. This ensures SK Telecom is fully aware of any changes in customer usage and preferences, as well as industry developments, helping the company develop strategies to grow its business.

Challenges

- Implement a system that provides detailed, accurate information about customers' roaming data usage
- Ensure high availability and powerful performance to support billions of transactions a day
- Improve the efficiency of customer support staff by giving them the information they need to answer queries promptly

Solutions

- Improved service by implementing systems that allow customers to search for detailed data usage and roaming information, which is made available in real-time
- Achieved average data processing rates 8 to 20 times greater than other SK Telecom in-house systems
- Delivered performance that was two to three times higher for real-time extract, transform, and load processes, and daily batch and fact generation
- Established an environment for processing, on average, 40 billion transactions per day
- Accomplished a ten-fold improvement in data warehouse querying performance and enhanced billing accuracy
- Attained a 10:1 (10x) data compression rate
- Stored up to 1 PB of raw data
- Prepared for an increase in customer usage by implementing a data traffic prediction system

- Gained a large capacity, packaged system that offers high performance, stability, and availability

- Ensured data from its various systems can be easily integrated into the Oracle Exadata Database Machine, by deploying Oracle Data Integrator

- Strengthened strategy planning through regular analysis of billing, customer usage and roaming information, and trends in mobile internet usage

Why Oracle

Oracle Exadata Database Machine was chosen because test results showed it could support and exceed the performance service level agreements required for all new systems designed to enhance customer satisfaction. The data usage and data roaming systems have been deployed on Oracle Exadata Database Machine in a large multi terabyte data warehouse. Oracle Exadata Database Machine runs on Oracle Linux and offers SK Telecom the stability and flexibility to expand according to data usage, and optimized data warehouse performance.

SK Telecom was the first company in the Asia-Pacific region to implement Oracle Exadata Database Machine. The company selected Oracle to underpin its integrated billing analysis system because of its previous experience with Oracle products and services. Oracle Exadata Database Machine's performance was confirmed when the extraction of voice-of-customer data was shortened from between one and three days to real-time, while maintaining accuracy.

Implementation Process

SK Telecom first implemented Oracle Exadata Database Machine in 2009, going live in October of that year. The migration to Oracle Exadata Database Machine V2 started in July 2010. The company went live in December 2010. In May 2011, SK Telecom implemented Oracle Exadata Database Machine X2-2, going live in October 2011. The company utilized the Oracle Unbreakable Linux support program to ensure the availability of its database infrastructure.

SK Telecom is the largest mobile communications service provider in Korea, specializing in data-driven applications and advanced multimedia services delivered to cell phones, personal digital assistants, and MP3 players.

SoftBank Mobile Corporation Improves
Database Query Performance by up to Eight Times

"Oracle Exadata Database Machine has enabled SoftBank Mobile to create a data warehouse with up to eight times the processing capacity of our previous data warehouse while reducing our overall database running costs by 50%."
Keiichiro Shimizu, Senior General Manager, Planning Management Department, Information Systems Division, SoftBank Mobile Corporation

Established in 1986, SoftBank Mobile Corporation is a leading mobile telecommunications service provider based in Tokyo, Japan. It offers a range of mobile services that run on Wideband Code Division Multiple Access (W-CDMA) and Universal Mobile Telecommunications System (UMTS) 3G networks.

Driven by the popularity of smart phones, SoftBank Mobile has achieved the highest growth in Japan's mobile phone market over the past two years, attracting more than 200,000 subscribers per month.

This increase in subscribers from a previous average of 50,000 per month strained the company's data warehouse.

"We quickly realized that with this expected increase, we would run out of storage capacity by the end of March 2010," said Keiichiro Shimizu, senior general manager, planning management department, information systems division, SoftBank Mobile Corp. "Performance problems started to occur; it was taking us 25 hours to analyze the data log each day."

Database Performance Increased Up to Eight Times

In January 2009, SoftBank Mobile conducted an Oracle Exadata Database Machine proof-of-concept test with a data volume based on an expected future increase in transactions.

During this test, the company's data warehouse performance improved by up to eight times.

As a result, SoftBank Mobile determined it was able to replace 36 Teradata racks with just three Oracle Exadata racks.

The new data warehouse, running on Oracle Exadata, is connected to the customer care and billing system, which runs on Oracle Database. It can store up to 150TB of data, an increase in capacity of 150% on the previous Teradata solution.

Faster Performance at a Lower Cost

The intelligent storage software in every Oracle Exadata Database Machine enables the company to offload processing from its database server to the storage servers. This provides significant database performance improvements by reducing database server CPU consumption while eliminating network bottlenecks.

For example, it now takes only seven hours to analyze call records and customer logs each day, compared to 25 hours previously.

This enables SoftBank Mobile to serve customers faster based on common call details records and customer logs, which has strengthened the company's marketing power.

Key Benefits:

- Replaced 36 Teradata data racks with three Oracle Exadata racks
- Increased storage capacity for data warehouses to 150TB, an increase of 150% on the previous capacity
- Improved database query performance by up to eight times
- Reduced database running costs by 50% and operational costs by more than half
- Analyzed call detail records and customer logs from each day in seven hours rather than 25 hours

Operational Costs Reduced

SoftBank Mobile's operational costs have been significantly reduced since the introduction of Oracle Exadata Database Machine.

"Oracle Exadata Database Machine has enabled us to create a data warehouse with up to eight times the processing capacity of our previous data warehouse, while reducing our overall database running costs by 50%," Shimizu said.

The introduction of Oracle Exadata Database Machine has also helped increase staff skills by eliminating proprietary technology and utilizing over 100 Oracle master engineers.

"It's also much easier to get access to engineers that have the relevant experience working with this system, and our operational costs are less than half what they were previously," said Shimizu.

Why Oracle?

SoftBank Mobile initially considered updating its existing data warehouse but decided it would be too costly. The company then compared five solutions before selecting Oracle Exadata Database Machine.

According to Yuji Watanabe, deputy manager, operations department, business base management department, information systems division, SoftBank Mobile Corp, Oracle Exadata Database Machine is an open and high performing system.

"The technology is also based on Oracle Database, a simple architecture that we understand, so we knew we would succeed implementing the system," he said.

Masaki Matsuoka, project manager, information systems division, business base management department, project promotion department, SoftBank Mobile Corp, travelled to the United States in March 2009 to observe the system at one of Oracle's test centers.

"The system processed a data volume exceeding one trillion items within a few seconds," said Matsuoka.

Implementation Process

The implementation took just three months after system analysis and base design phase, and was completed in May 2010. The Oracle Development and Oracle field teams fully supported this project.

SoftBank Mobile Corporation is a leading mobile telecommunications service provider based in Tokyo, Japan. It offers a range of mobile services that run on WCDMA and UMTS 3G networks.

Targetbase Improves Performance Dramatically, Speeds Time to Market and Lowers Total Cost of Ownership for Clients

Targetbase is a data-driven marketing agency that delivers customer engagement through database, digital, and direct marketing expertise. It uses data-driven insight to create powerful brand communications that combine the right messages and tactics through the best channels with optimal timing. The results are strong creative services that drive customer engagements and deliver motivated individuals, ready to take action.

Challenges

• Boost processing power significantly to support the real-time and evolving mixed processing capabilities and complexities required to deliver sophisticated marketing services for Targetbase customers

• Increase throughput to get clients to market in a timely manner with the right message to the right audience at the right time

• Ensure ability to maintain bidirectional dialogue with consumers in all digital channels

• Gain ability to quickly interpret raw consumer data and enable actionable insight

Solutions

• Deployed Oracle Data Guard to ensure client data is secure and recoverable in the event of a system outage

• Allowed Targetbase to provide more services to its clients by improving throughput

• Deployed Oracle Exadata Database Machine to improve data processing performance and lower storage costs

• Achieved up to a 30-fold improvement in the performance of ad hoc database queries

• Accelerated updates and refreshes to client key performance indicators by nine-fold

• Decreased the time required for analytical queries from hours to seconds in many cases for faster and more in-depth analysis of client marketing initiatives

• Reduced data storage costs by up to 30% in many cases, using Oracle Exadata Hybrid Columnar Compression

• Integrated analytical modeling capabilities with client Web sites, point of sale systems, and enterprise resource planning systems to ensure real-time marketing information

"We've always been an Oracle shop, so migration was relatively easy. Going Oracle to Oracle saved us time in not having to rewire apps into a different environment. And the performance improvements have been dramatic and game changing for our business."
Ed Forman, Chief Technology Officer, Targetbase

TUI Nederland N.V. Improves Service and Online Sales with Data Warehousing Solution

TUI Nederland N.V. was formed in 1995 by a merger of the nation's two leading tourism companies at the time, Arke and Holland International, and is now one of the leading travel agencies in The Netherlands. TUI Nederland includes approximately 220 travel agencies.

Challenges

- Improve database performance to meet the challenge of providing real time information on travel opportunities despite ever-changing travel pricing, taxes, and availability details

- Improve online transaction processing (OLTP) performance to optimize online sales, by improving customer experience on the company's Web sites

Solutions

- Deployed Oracle Exadata to improve database performance significantly in terms of speed and scalability

- Upgraded to a high-performance data warehouse that enables online customers and agencies to see the most up-to-date and accurate travel details such as pricing, taxes, and availability

- Enhanced customer experience by using Oracle Exadata to improve data quality and speed up processing time, enabling TUI Nederland's Web sites to provide customers with up-to date availability information for each specific travel option before the booking process begins

- Optimized online sales with the OLTP functionality by providing faster transaction processes, resulting in more online conversion and higher sales

- Accelerated information processing, enabling TUI Nederland to process changes in price and availability in a few hours, a process that previously took up to several days to complete

"TUI Nederland selected Oracle Exadata because it is the only solution that meets our database requirements—including online transaction processing. The performance and scalability of Oracle Exadata enables our travel agents to find answers to complex questions quickly, leading to greater efficiency, improved service levels, and ultimately a better market proposition."
Eli Lysen, Senior Manager ICT, TUI Nederland N.V.

Turkcell Accelerates Reporting Tenfold, Saves on Storage and Energy Costs with Consolidated Oracle Exadata Platform

"It was a never-ending race to match the company's requirements for business performance and capacity. After the test migration, users were so happy that they did not let us go back. With Oracle Exadata Database Machine, we have outperformed expectations and prepared Turkcell for future growth."
Metin Yilmaz, IT Manager, Turkcell

About Turkcell

Turkcell is the leading communications and technology company in Turkey with 33.1 million subscribers and a market share of approximately 54% as of March 31, 2011 (Source: Our estimations, operators' and Authority's announcements). Turkcell is a leading regional player, with market leadership in five of the nine countries in which it operates with its approximately 60.4 million subscribers as of March 31, 2011.

Turkcell reported a TRY2.1 billion (US$1.3 billion) net revenue with total assets of TRY15.2 billion (US$9.8 billion) as of March 31, 2011. Turkcell covers approximately 83% of the Turkish population through its 3G and 99% through its 2G technology supported network. It has become one of the first among the global operators to have implemented HSDPA+ and achieved a 42.2 Mbps speed using the HSPA multi-carrier solution.

Turkcell has been listed on the NYSE and the ISE since July 2000, and is the only NYSE-listed company in Turkey. 51.00% of Turkcell's share capital is held by Turkcell Holding, 0.05% by Cukurova Holding,13.07% by Sonera Holding and 1.19% by others, while the remaining 34.69% is free float.

Executive Summary

Turkcell is Turkey's leading mobile communications and technology company and ranks third in Europe and 16th in the world by number of subscribers. Each day, Turkcell's networks process about 1.5 billion call records, which form the basis for critical business reports used by teams in finance, marketing and other parts of the company. The amount of data managed by the company is huge — over 500 TB and growing — and Turkcell wanted to make sure that the heavy volume wouldn't slow down the delivery of critical business reports.

Turkcell found a solution in Oracle Exadata Database Machine, a new computing platform that takes advantage of innovations in smart storage to radically boost system speed and lower cost. After making the move to Oracle Exadata, Turkcell boosted reporting speeds tenfold, eliminating long waits for users while also providing data compression capabilities that cut the size of its data repository by a factor of eight. The Exadata migration required no changes to system interfaces and allowed Turkcell to consolidate hardware and create a highly scalable framework to handle future growth.

Mainstay Partners estimates that Turkcell's investment in Oracle Exadata will break even within 30 months and achieve an ROI of at least 25% over three years, with total benefits expected to reach into the millions of US dollars over three years.

Turkcell should realize additional savings from a range of other improvements, including more efficient disk space utilization, higher business user productivity, and faster system deployments.

Key Benefits:

- Achieved 25% ROI over three years
- Estimated $2M in total benefits
- Accelerated report run time by 10x, eliminating long wait times for business intelligence
- Enabled significant infrastructure consolidation, reducing hardware footprint by 90%
- Leaner hardware environment reduced energy costs
- Improved capacity and scalability to handle future business data and business growth
- Increased data throughput performance, reducing backup time by 3x
- Achieve up to 10x data compression, reducing overall data volume 8x

[1] These countries are: Ukraine, Belarus, Turkish Republic of Northern Cyprus, Germany and in Kazakhstan, Azerbaijan, Moldova, Georgia through Fintur. Subscriber figures are as of March 31, 2011

Background

In addition to Turkey, Turkcell operates in nine countries and has approximately 60.4 million subscribers.[1] The Istanbul-based company was the first — and remains the only — Turkish company listed on the New York Stock Exchange. In 2010, Turkcell Group reported revenue of US$6.0 billion.

Each day, Turkcell's communications network generates about 1.5 billion call detail records (CDRs), the computer records containing details of every phone call that passes through the network. The CDRs, along with other business information, adds up to a total of about 600 TB of data, which Turkcell holds in more than 500 databases across the company.

Eager to mine these data for customer and business intelligence, Turkcell built a high capacity data warehouse that extracts 600 to 1,000 GB of data from more than 20 source databases. Marketers, financial analysts and other business users rely on the data warehouse to run more than 50,000 reports every month, helping Turkcell manage its finances, analyze customer trends, and evaluate marketing campaigns.

But with the volume of data surging in recent years, Turkcell was looking at opportunities to boost the performance of the data warehouse and keep reporting operations running efficiently. Moreover, Turkcell was looking for ways to rein in its sprawling hardware footprint, which had been growing to accommodate the company's expanding data processing and storage needs. "Data storage requirements have been doubling every year," said Metin Yilmaz, IT manager at Turkcell. "It was a never-ending race to match the business' performance and capacity needs."

The Oracle Exadata Solution

All of these challenges prompted Turkcell to launch a comprehensive initiative in 2009 aimed at simplifying and consolidating its data warehouse infrastructure and meet rising service-delivery expectations. The implementation of Oracle Exadata Database Machine was an essential part of the project, combining servers, storage, networking, and software in an integrated platform that is massively scalable, secure, and redundant. Turkcell also replaced its application server environment, subsequently loading data into the Exadata Database Machine.

Installed and fully tested in less than four months, the Oracle Exadata platform featured an upgrade to Oracle Database 11g and a new clustered server architecture running Oracle RAC (Real Application Clusters) software and Oracle Linux operating system. Because Turkcell could implement the Exadata environment without changing existing extract, transform, load (ETL) and reporting software or application interfaces, it could plan and manage the project as a simple migration. Alternative methods of boosting performance by rewriting source code would have required a two- to three–year project, IT managers said.

Operational And Strategic Benefits

Turkcell saw immediate benefits from the move to Oracle Exadata, with improvements ranging from faster reporting to streamlined system management to reduced business risk. "With the Oracle Exadata Database Machine, we have outperformed our users' expectations and we are prepared for future growth," said Yilmaz. Exadata-driven cost and productivity savings are expected to reach into the millions of US dollars over three years.

Consolidated Infrastructure Speeds Deployment

In the migration to Oracle Exadata, Turkcell replaced 10 data-storage cabinets and a Sun M9000 server with a single full-rack high performance Exadata Database Machine, as shown in Figure 1. The consolidated hardware footprint and Exadata's simple implementation requirements helped minimize Turkcell's resource commitment.

IT managers noted that a comparable system implementation would have required at least five dedicated IT resources (including OS, storage and database administrators) and at least 45 days longer to complete.

"Our main objective was to combine the data warehouse domain databases in a single rack Oracle Exadata Database Machine environment," said Yilmaz, the IT manager. "One platform, one version, one vendor. Time wise, this was a tremendous savings." The shortened deployment timeline helped Turkcell avoid substantial labor costs.

Figure 1: 90% Reduction in Server and Storage Hardware
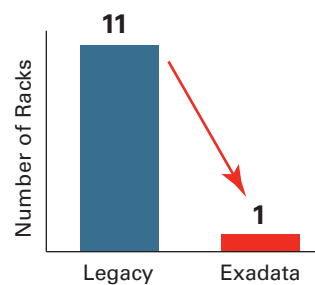
IT Administrative Efficiencies

Database administrators noted that running Oracle Exadata generated significant IT management efficiencies, in large part because of the simplicity of the one-box Oracle solution. "Oracle Exadata requires very minimal storage and OS administrative work," a Turkcell database administrator said. "We're only involved during patching and installation activities." Additional time savings came from significant reductions in performance-tuning requirements and simplified vendor support now that Turkcell has consolidated most of its computing infrastructure on Oracle.

Currently, Turkcell's IT group employs four system administrators to oversee the Exadata platform in addition to other responsibilities. The company estimates that it has improved administrative efficiency by about 20% during an average week, which is expected to generate additional savings.

10x Boost in Reporting Efficiency

Exadata drove significant increases in reporting speed — a critical improvement for hundreds of business users who run more than 50,000 reports each month to help track market trends, analyze finances, and refine business strategies.[2] In the previous environment, it took about 30 minutes to generate a typical report and as much as four hours or more for more complex analyses. Today, reports are running almost 10 times faster and about 90% of all reports take less than five minutes to run.[3]

"End users can easily get the results they need when they arrive at work. There's no waiting for hours anymore," said Yilmaz, adding that business managers and analysts can now focus on productive activities such as generating new business. "This gives us a real advantage because Turkcell is in a highly competitive environment and we can't afford waiting hours to get answers to questions."

Turkcell estimates that more efficient reporting is saving users about one hour per week, translating into significant annual productivity benefits. Moreover, the IT department has reduced business risk by moving to a reporting platform that can handle the increase in reporting that is expected in the next few years.

Figure 2: 10x Reduction in Average Report Run Time*
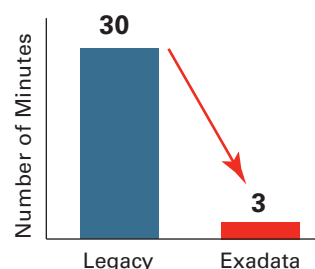
*NOTE: This decrease was measured even as report volumes doubled over the last nine months and data queries tripled.

[2] Turkcell estimates that it has about 300 active users of reporting services (50% in Marketing, 30% in Finance, and 20% in IT) and about 3,000 distinct reports.

[3] Turkcell reported that some reports run more than 400 times faster. Reports taking longer than four hours to run, which numbered about 87 in the legacy environment, have been virtually eliminated.

Data Compression Yields Savings, Scalability

As Turkcell's mobile communications business continues to expand, data volume is expected to grow to 500 TB within a few years, up from 250 TB today. Managing and storing such a huge amount of data is a major challenge for IT, and managers stressed the importance of compression technologies to save disk space and speed backups.

**Figure 3: 8x Data Compression**
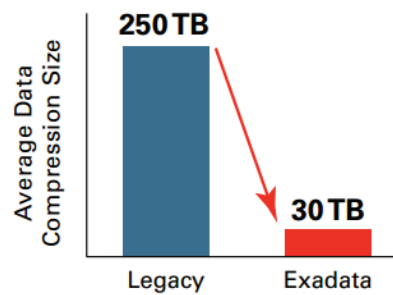
The data compression features of Oracle Database 10g helped address the issue to an extent, shrinking data volume from 250 TB to about 100 TB. But with Oracle Exadata's hybrid columnar compression technology, Turkcell achieved exponentially greater space savings, cutting total data size to about 30 TB, an eightfold reduction. As a result, Turkcell expects to benefit from lower costs associated with data storage hardware requirements.

Cost-Effective System Scaling

Turkcell will rely on Exadata's space-saving capabilities to cost-effectively manage its exploding data processing and storage requirements, which managers say is almost doubling every year. Oracle RAC clustered database technology will also help Turkcell keep pace with the growth by enabling IT to economically scale out the system. "Going from one to multiple racks will be easy now," one IT administrator noted.

The company is continuing with plans to simplify its database architecture and has launched a project that will consolidate six new databases on the new Exadata platform. Ultimately, IT managers say they want to reduce the total number of production database by two-thirds and keep a tight rein on building new ones.

Figure 4: 3x GB Per Second Performance Improvement
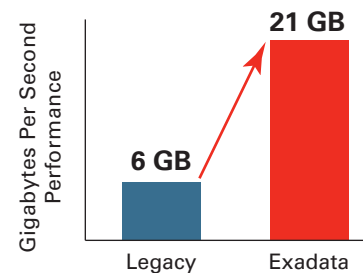
Faster System Performance and Backups

Among other critical enhancements, the move to Oracle Exadata — with its Smart Scan capabilities and faster throughput — boosted system speed fourfold and led to a range of efficiency gains. Before Exadata, administrators struggled with slow throughput, which, when combined with less data compression, extended backup sessions to as long as 40 hours. Today, administrators working with smaller databases and faster throughput can perform backups in just 10 hours with Exadata. Data-transfer speeds rose from 6GB per second to 21GB per second simply by moving to Exadata; no additional changes to the system were required. Furthermore, faster backups and lower data volumes (due to higher data compression) mean that Turkcell needs fewer backup tapes to handle each backup session.

Figure 5: 6x Faster Data Backups
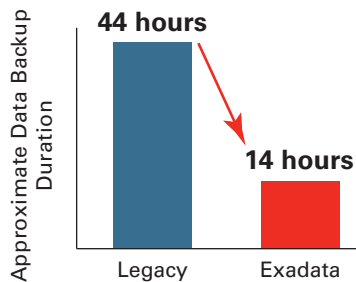
Figure 5: 6x Faster Data Backups
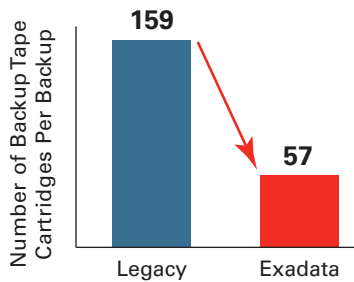
Lighter Hardware Footprint Cuts Energy Costs By 80%

Turkcell captured additional savings in the form of lower energy costs as it retired its sprawling hardware infrastructure in favor of a consolidated Exadata platform. "The old environment was a big problem for us in terms of electricity usage, and it was only going to get worse," a senior IT administrator said. "Exadata came to our rescue and allowed us to replace 11 cabinets with just one Exadata cabinet. By making this transition we're saving space and cutting energy usage in the data center, and getting a 10x performance improvement as well."

As shown in Table 1, the Exadata and consolidation initiative shrank the company's floor space needs by 90% and helped Turkcell achieve an 80% reduction in energy consumption. Turkcell is on track to significantly cut energy costs over the coming years.
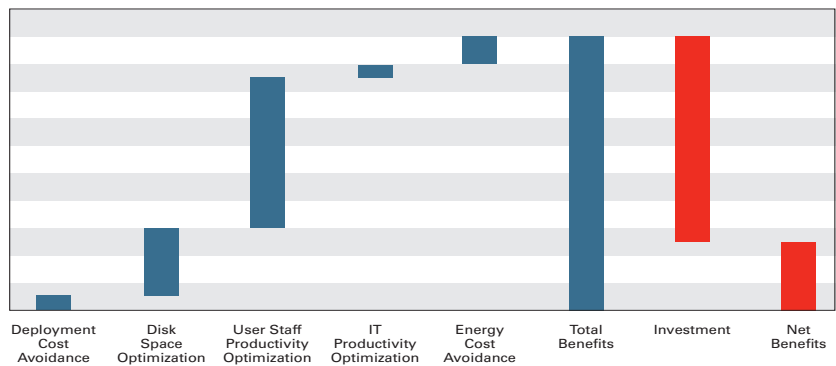
Table 1: Summary of Floor Space and Energy Savings

	Old System (11 rack)	Duplication of Legacy System (20 rack)	Current Exadata Environment
Floor Space (m²)	33	60	3
Energy Consumption (kw)	50	90	10
monthly Cost (of base)	100%	180%	20%

Estimated $2 Million In Total Benefits

Mainstay Partners estimates that Turkcell's investment in Oracle Exadata will achieve a 25% ROI over three years and break even within 30 months. Turkcell should realize additional savings from a range of other improvements, including more efficient disk space utilization, higher business user productivity, and faster system deployments.

Figure 4: 3x GB Per Second Performance Improvement

"Oracle Exadata Database Machine enables us to improve and accelerate data processing within our IT environment, specifically our business intelligence solution. We can now quickly provide our executives with the data they need to make strategic business decisions regarding Unicoop Firenze's 120 stores."
Filippo Cecchi, ICT Manager, Unicoop Firenze

Unicoop Firenze Upgrades Hardware, Accelerating Distribution Chain Data Processing to Enhance Executive Decision-Making

Unicoop Firenze is the largest cooperative company in Italy, with more than 1 million members. The company manages a sales network of 120 stores in Tuscany and Rome, operating under the Coop and Doc brands. Unicoop Firenze's mission is to provide its members and consumers with high quality goods and services at the best market price by promoting its cooperative values of mutuality, solidarity, and socio-economic development.

To enhance real-time decision-making, company executives wanted to ensure that they had timely and accessible cash flow and sales data from Unicoop Firenze's stores. The organization looked to Oracle and Oracle Partner Bridge Consulting Srl for a solution.

By deploying Oracle Exadata Database Machine, Unicoop has significantly reduced the time it takes executives to pull financial data from its 120 stores and compile reports, enabling faster and more informed decisions. In addition, the new environment enables Unicoop Firenze to increase the number of simultaneous jobs it runs during night-batch processing, from 5 to 30, while reducing overall IT costs.

Challenges

• Improve the scalability and performance of the company's business intelligence environment to effectively support managing its network of cooperative retail stores

• Reduce time to process business intelligence data, such as sales and cash flow, from Unicoop Firenze's 120 stores to aid company executives in making time-sensitive business decisions and improving operations

• Reduce IT costs by consolidating and managing data on multiple compression tiers

• Enhance system scalability to handle an influx of new services and applications

Solutions

• Deployed Oracle Exadata Database Machine and reduced the time it takes to process data, such as sales and cash flow, coming from 120 stores—a process that previously took all night, slowing business processes.

• Enabled company financial officers to compile reports seven times faster by processing concurrent operations, data charging, and queries during the night-batch process

• Optimized night data scheduling sequences, which enabled Unicoop Firenze to run 30 simultaneous jobs compared to just 5 concurrent jobs in the legacy environment-reducing costs and gaining the ability to complete batch jobs faster

• Accelerated the user interactivity function and eliminated the previous waiting break

• Increased system scalability, the number of applications it runs, and the number of services offered

• Worked with Oracle Partner Bridge Consulting Srl to implement Oracle Exadata Database Machine, due to its success with conducting comparative tests and the solution's cost-effective performance, specifically for business intelligence environments

Yamazaki Baking Co., Ltd Processes Sales Data 30 Times Faster, Improves Factory and Business Operations

"Building our own data warehousing machine with a different architecture would have required a large-scale remodeling of our IT infrastructure. However, with Oracle Exadata Database Machine, we made the transition quickly, easily, and cost effectively, which helped us achieve dramatic improvements in database performance."
Makoto Fukumoto, Assistant General Manager, Information Systems Department, Yamazaki Baking Co., Ltd

Founded in 1948, Yamazaki Baking makes bread, sweet buns, Japanese and Western confectionery goods, prepared rice, side dishes, biscuits, rice crackers, jams, and desserts. These products are sold through supermarkets and convenience stores, as well as the company's own network of outlets and bakeries, which sell food products made onsite and offsite. The company's 20 nationwide factories produce around 4,500 food items a day. These items are delivered from each factory to about 100,000 stores, with deliveries scheduled up to three times daily.

The company's aim is to ensure timely production and delivery of food products to consumers. To guarantee efficient production and deliveries to its wide distribution channel, Yamazaki Baking relies heavily on the use of data analytics to complete daily business operations reports.

However, as its data volumes increased, it took progressively longer to generate these reports, creating inefficiencies in day-today business and limiting the ability to undertake ad hoc analyses. Complicated searches had to be aborted when systems timed out, which frustrated sales and other staff.

To resolve these issues, Yamazaki Baking engaged Oracle Partner Sumisho Computer Systems Corporation to deploy Oracle Exadata Database Machine. For the first time, the company can generate three years' worth of sales results in five minutes, 30 times faster than in the past.

"Building our own data warehousing machine with a different architecture would have required a large-scale remodeling of our IT infrastructure," said Makoto Fukumoto, assistant general manager, information systems department, Yamazaki Baking.

"However, with Oracle Database Machine, we made the transition quickly, easily, and cost-effectively, which helped us achieve dramatic improvements in database performance."

Faster Query Response Times

Yamazaki completes 3.5 million transactions per day, which are aggregated and analyzed from different perspectives, such as by product, store, and delivery.

"Without a proper understanding of daily production, next-day shipments, and the percentage of new products among the shipments, we can't run effective factory operations," said Fukumoto. "Furthermore, managers at the head office need to know the production status of all our factories and require up-to date data for trend analyses."

Key Benefits:

- Enabled three years' worth of sales results to be generated in five minutes, 30 times faster than in the past
- Guaranteed responses in a few seconds, instead of long delays due to system time-outs
- Provided up-to-date production and distribution data to factory staff to help them improve operational efficiency at 20 factories
- Gained a high-performing solution that does not require regular tuning or daily maintenance
- Accommodated future growth, as the Oracle solution has capacity to expand

Legacy System Background

In 2000, Yamazaki Baking introduced a UNIX-based system to extract, collect, and analyze different types of sales data. This reduced the time required for data aggregation from two days to two to three hours.

In 2003, the company adjusted the system to provide store sales data. However, an increase in the number of users affected system performance, so the company moved from UNIX to a 32-bit version of the Microsoft Windows operating system in 2005.

Access to analytical information is based on an employee's job title and description. For example, sales staff may want to analyze sales trends following a promotional campaign, while business managers may want to undertake a year-on-year comparison of sales. Due to the variation in analysis needs, it was too costly to create data marts to comply with each request.

Instead, the company created static reports for each product, business area, and sales type. For queries outside this range, users could create ad hoc reports, Some staff members even wrote their own SQL code to conduct complicated searches.

For users to successfully carry out ad hoc analysis, a fast data retrieval time was necessary.

"However, as the number of users reached more than 2,000 and the amount of data increased, it became harder to tune the database for faster performance," said Kazuya Ueda, manager of the system development group in the information systems department at Yamazaki Baking. "Sometimes the system timed out if we conducted a complex query.

If we wanted to improve the performance of the Oracle9i Database, we would have to add memory, but with a 32-bit version of Windows, we were limited to 4GB of memory."

Performance Improved by 30 Times

In 2010, Yamazaki Baking upgraded to Oracle Exadata Database Machine to overcome these issues.

Oracle Exadata Database Machine is a complete, highly tuned database environment that does not require any additional tuning to speed up search functions. Because the data throughput rates are so fast, the company had the option to remove indexes, reducing the need for index management and gaining back valuable storage space. This also reduced expensive storage costs.

"Oracle Exadata does not need complex tuning, reducing the need for daily operational management," said Masahito Yamaji, systems engineer in Yamazaki Baking's system development group, information systems department.

High-speed processing is now possible without the need to split tables. In the past, Yamazaki Baking manually aggregated the previous month's sales data from extracted tables.

Oracle Exadata Database Machine ensures necessary data is in one table, which enables three years' worth of sales results to be generated in a single query. This was unheard of in the company's old hardware environment. The operation can now be completed in five minutes, 30 times faster than in the past a 3,000% improvement in performance.

Database Queries Returned within Seconds

Feedback from business users in the sales department has been positive. Database queries are returned in just a few seconds, allowing these users to excel at their jobs. Moreover, they are now able to ask questions against even larger data sets, providing better insight into new trend analysis.

Prior to implementing Oracle Exadata Database Machine, queries often timed out at the end of the month, when the system was processing large data loads. This meant users were unable to make calculated business decisions based on factual data.

"We now need to tell more users about Oracle Exadata Database Machine so they too can benefit from the smart scans of Exadata software and increase performance," said Fumio Matsuyama, systems engineer, system development group, information systems department, Yamazaki Baking.

Why Oracle?

Yamazaki Baking initially looked at building its own data warehousing machine. However, the company realized that it would have to make large-scale changes to its existing IT infrastructure to accommodate this solution. There were also issues with the solution itself, its pricing, and the fact that it did not integrate with the existing client tools.

Oracle Exadata Database Machine proved to be a better, faster solution. "It uses the same architecture as Oracle Database, and was easier and more cost-effective to implement," said Fukumoto. "It was ready in days, instead of the months that it would have taken to build our own version."

Fukumoto said he was surprised that such a small unit could deliver such high performance. "We chose a half rack and the portion we actually use is only half of it, so it is small enough to fit in one quarter of the rack space. There is plenty of capacity left so we have the option to use it as a test and development environment, and expand it to other groups within Yamazaki Bakery."

Implementation Process

Yamazaki Baking engaged Sumisho Computer Systems Corporation (SCS) to implement the Oracle solution. SCS is an Oracle Partner known in Japan for the expertise of its engineers.

Yamazaki Baking makes bread, sweet buns, Japanese and Western confectionery, prepared rice, side dishes, biscuits, rice crackers, jams, desserts, and prepared foods. The company's products are available at more than 100,000 outlets across Japan.

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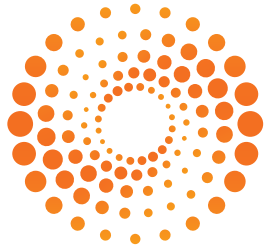
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