

# **INFORMATION FOR SUCCESS**

Customers Achieve Extreme Performance at Lowest Cost  
with Oracle Exadata Database Machine  
September 2011

**Hardware and Software, Engineered to Work Together**

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Enterprise data is growing exponentially, and with this growth comes larger databases and more business users seeking faster response times to increasingly complex queries. Yet organizations are still being asked to lower their IT costs. So how do you prioritize IT investments to ensure support for growing volumes of data and still meet your business users' evolving requirements—such as competing more effectively, reducing IT costs, meeting compliance requirements, or anticipating changing market conditions?

Oracle Exadata changes the game by offering extreme performance for all your data warehousing, online transaction processing (OLTP), and mixed workloads, making it the ideal platform for consolidation onto private clouds. Oracle Exadata is a preoptimized, preconfigured hardware and software solution that is massively scalable, secure, and fully redundant. Its unique architecture and innovative storage software lowers total cost of ownership, increases performance by 10x or more, and reduces the risk of downtime.

This reference booklet contains a sampling of real business results that organizations in a variety of industries worldwide have achieved by implementing Oracle Exadata. In these testimonials you'll learn how customers have used Oracle Exadata to reduce IT costs through consolidation, manage more data on multiple compression tiers, improve the performance of all applications, and make 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 achieve your business and IT objectives.

Sincerely,

Jeb Dasteel

Senior Vice President and Chief Customer Officer

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# Exadata Replaces Teradata

**36 Teradata Racks**

**3 Exadata Racks**



**10x** Energy  
Consumed

**8x Faster**

**At Teradata's Largest Asian Customer**

**ORACLE®**

**Save The Planet, Dump Your Teradata**

For more information visit [oracle.com/savetheplanet](http://oracle.com/savetheplanet)

**Oracle Customer:****11st**

Seoul, Republic of Korea

www.11st.co.kr

**Industry:**

Retail

**Annual Revenue:**

US\$1 to US\$5 Billion

**Employees:**

600

**Oracle Products & Services:**

- Oracle Exadata Database Machine

“The ability to react quickly to daily changes in the fast-moving e-commerce market is critical to success. Oracle Exadata Database Machine offers fast transaction processing times and data compression features that enable us to analyze customer transactions in a timely manner and take action if we spot any emerging sales trends.”

**JangWon Park**, Manager, 11st

## 11st Cuts Task Deployment Time from Eight to Nine Hours to Two Hours, Reduces Storage Use by 500%

In 2008, Korea’s largest mobile communications service provider SK Telecom launched 11st, an online shopping site. 11st has grown significantly in the past three years, becoming the first company to earn revenue of US\$2.6 billion in the shortest time in the history of the e-commerce industry in South Korea.

### Challenges

- Implement a data processing platform that could support a rise in the number of online shoppers, by increasing data throughput and transaction processing speeds
- Complete sales reports on the previous day’s best-selling product categories and top customers in a short amount of time to ensure the data warehouse is fully operational before the start of business hours
- Enable easy analysis of large volumes of data, such as customers’ shopping habits and bestselling products, over a long-term period

### Solutions

- Implemented Oracle Exadata Database Machine X2-2 HC Quarter Rack to take advantage of faster processing times and data compression features
- Shortened the time taken to complete tasks, such as the previous day’s sales reports, from eight to nine hours in the past, to two hours
- Processed 100 million shopping transactions in a day, as Oracle’s compression and partitioning features and data transfer specifications enhance data processing speeds
- Enabled fast reporting and analysis of six-month-old transactions, by partitioning data into daily, weekly, and monthly segments and applying different compression methods
- Improved performance at low cost and with minimal man hours as the existing database system did not need to be changed
- Reduced storage needs by 400% to 500% (from 20TB. to 25TB to 5TB) by compressing customer and transaction data
- Optimized resource allocation among the many concurrent database sessions with Oracle Database Resource Manager

**Oracle Customer:****Allegro Group**

Poznan, Poland

www.allegro.pl

**Industry:**

Retail

**Employees:**

1,500

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Oracle Partitioning
- Oracle Business Intelligence Enterprise Edition

**Oracle Partner:****ISE GMBH Germany**

## 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

“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

**Oracle Customer:****Arrow ECS Sp. z o.o.**

Krakow, Poland  
www.arrowecs.pl

**Industry:**

Professional Services

**Employees:**

87

**Oracle Products & Services:**

- Oracle Exadata Database Machine

“In our Exadata Competency Center, customers can experience and calculate Oracle Exadata’s potential business impact. We can prove a database environment consolidation powered by Oracle Exadata may become the basis for enhancing competitive advantage, delivering a 15- to 20-fold increase in performance and reducing IT costs.”

**Tomasz Iwanciw**, Product Development Director, Arrow ECS Sp. z o.o.

## Arrow ECS Sp. z o.o. Deploys Hardware Environment to Minimize Customer Technology Adoption Risk

Arrow ECS Sp. z.o.o. is an Oracle, value-added distributor (VAD)—providing support for Oracle partners and customers in the areas of knowledge transfer, marketing, and sales support. Arrow ECS in Poland is part of a global organization awarded as the top Oracle VAD in 2010. Together with Oracle Poland, Arrow ECS has built an Exadata competency center, which enables it to verify Exadata performance, working as a platform beneath a customer’s environments.

**Challenges**

- Enable Oracle customers—from all industries—to experience optimal performance in online transaction processing and warehousing environments
- Provide best-in-class infrastructure for database consolidation and cost efficiency optimization
- Enable Central European Oracle partners—including independent software vendors (ISVs) and integrators—to verify optimal performance for new Oracle Exadata solutions
- Help Central European ISVs test and certify their applications on Exadata-based environments

**Solutions**

- Constructed an Exadata Competency Center in Krakow, Poland, which is equipped with an Oracle Exadata and Oracle Exadata Database Machine X2-2 environment
- Enabled partners and customers to test Exadata live with their own data and workloads
- Offered one-day Exadata demonstration shows in the Exadata competency center and on customers’ sites
- Worked with Oracle presales team to deliver professional proof of concept services
- Demonstrated to four customers in the IT and banking sectors an unprecedented 15-to 20-fold increase in their systems’ performance
- Identified business application bottlenecks by accelerating input and output speeds to a level where other application performance issues are easily recognizable

**Oracle Customer:****AT Internet**

Paris, France

www.atinternet.com

**Industry:**

Media and Entertainment

**Employees:**

160

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- My Oracle Support

**Oracle Partner:****Cheops Technology**

www.cheops.fr

## AT Internet Improves Performance and Scalability While Consolidating IT Infrastructure

AT Internet, which developed the XiTi™ audience measurement solution, is a leading provider of Web site analysis tools and services in the French market. Its clients include more than half of the French CAC 40 companies, including Bouygues Telecom, Price minister, Areva, Total, and Carrefour.

**Challenges**

- Gain a competitive edge for AT Internet, a rapidly growing company specializing in online intelligence services
- Offer all clients—from e-commerce Web sites to media and mobile communications providers—the performance levels required to manage and analyze compartmentalized Web data in real time, for purposes such as audience measurement and assessment of purchasing flows
- Support and manage its clients' Web sites, which receive several billion page views per month

**Solutions**

- Used Oracle Exadata Database Machine to create a data warehouse in one month to handle 3.5 terabytes of data linked to the “Data Explorer” compartmental analysis service that AT Internet delivers to its 400 clients as a software-as-a-service offering
- Worked with Cheops Technology to quickly deploy the solution and develop the data warehouse
- Responded on average 30 times faster on requests above one terabyte of data and up to 150 times faster to other types of requests
- Reduced the gross volume of data to one-tenth of its previous size by using Oracle Exadata's hybrid columnar compression mode, and slashed the cost of storing data by a factor of four, when compared to the previous datacenter architecture
- Used Oracle Exadata Storage Servers to make significant gains in responsiveness and scalability, enabling the new system to manage twice the annual data volume as the legacy system
- Produced compartmental analyses on huge volumes of data in just a few minutes, instead of several hours
- Gained the ability to analyze data on visits to client Web sites over longer chronological ranges, analyzing several-month periods rather than just several-day periods, to provide clients with improved insight into Web site usage

“Thanks to Oracle Exadata Database Machine, we are able to provide our clients with compartmental analyses of the large volumes of data related to their Web sites in just a few minutes. We have a responsive architecture that allows us to evolve rapidly to deal with massive growth in Web data.”

**Sébastien Carriot**, Technical Director, AT Internet

**Oracle Customer:**

**Australian Finance Group Ltd.**

Perth, Australia

www.afgonline.com.au

**Industry:**

Financial Services

**Annual Revenue:**

US\$292.9 million

**Employees:**

190

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Siebel Customer Relationship Management
- Oracle Business Intelligence Enterprise Edition
- Oracle Advanced Customer Services

## 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

**Oracle Customer:****Avea İletişim Hizmetleri A.Ş.**

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 İletişim Hizmetleri A.Ş.

## Avea İletişim Hizmetleri A.Ş. Optimizes Database Compression, Reporting, and Campaign Analysis

Avea İletişim Hizmetleri A.Ş., 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

**Oracle Customer:****Banca Transilvania**

Cluj-Napoca, Romania

www.bancatransilvania.ro

**Industry:**

Financial Services

**Annual Revenue:**

US\$400.61 million

**Employees:**

More than 5,000

**Oracle Products & Services:**

- Oracle Exadata Database Machine

“The new Oracle Exadata Database Machine enables us to access business data 30 times faster. This translates into faster decision making than our competition, more accurate segmentation of our database, and the ability to focus our attention on new business lines all of which improve service to our 1.3 million customers.”

**Leontin Toderici**, Chief Operations Officer, Banca Transilvania

## Banca Transilvania Accesses Information up to 30 Times Faster, Increasing Competitive Advantage

Banca Transilvania is a leader in the Romanian financial industry and the country's first banking institution to be listed on the Bucharest Stock Exchange. The bank, which has 500 branches, offers retail and business banking services as well as a specialized division dedicated to medical staff. It ranks among the top five recognized brands in the Romanian banking-insurance sector.

**Challenges**

- Expand the bank's business reporting capabilities, enabling greater analysis of consumer behavior to drive new business
- Ensure the scalability to store an increasing volume of data about banking customers and transactions
- Provide a high level of data security to ensure the privacy of customer financial information
- Generate timely and comprehensive reports for management and third parties to enable more accurate decisions
- Gain greater agility to quickly introduce new services and lines of business, strengthening the company's competitive edge

**Solutions**

- Deployed Oracle Database Machine Half Rack to improve data warehousing and online transaction processing, which is essential to factoring interest rates and processing loans
- Improved response time by 20% to 30%, accelerating access to vital business information for bank employees and management
- Doubled the number of reports that bank specialists can leverage for insight, such as consumer behavior and the degree of penetration of certain bank products
- Reduced maintenance costs by 15% to 30%, translating into a considerable savings in the bank's IT budget
- Reduced energy costs by more than 30%, while solving the technical problem of storing large volumes of data and processing it rapidly
- Enabled bank specialists to make decisions faster than their competitors, especially in the area of calculating interest rates
- Enabled bank employees to rapidly develop new products and business lines, delivering a competitive advantage

**Oracle Customer:****BNP Paribas**

Paris, France

www.bnpparibas.com

**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

**Oracle Customer:****Bokwang Family mart Co., Ltd**

Seoul, Republic of Korea

www.Familymart.co.kr

**Industry:**

Retail

**Annual Revenue:**

US\$1.7 billion

**Employees:**

1,058

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## Bokwang Family mart Co., Ltd Processes 900,000 Order Transactions in Less Than 10 Minutes

"I believe Oracle Exadata is the best choice for high volume data processing. We can now process up to 900,000 order transactions in less than 10 minutes. Faster data processing has brought great efficiencies to our business."

**Im Young-seok**, Team Manager, Systems Planning Team, Information System Department, Bokwang Family mart

Bokwang Family mart is South Korea's leading convenience store chain, with 5,000 outlets across the country. The company is aiming to increase the number of outlets to 8,000 by 2015 to ensure customers have easy access to fresh food, groceries, and other items. Bokwang Family mart also has a strong corporate social responsibility ethic. The company uses environmentally friendly packaging for its lunch boxes, sandwiches, hamburgers, and hot dogs; and in March 2010 opened its first 'Green Store', built using sustainable materials. The company also works with local communities to publicize local cultural events.

Bokwang Family mart had an ageing ordering system that struggled to efficiently process stock orders as the number of retail stores increased. It was taking up to 50 minutes to process daily stock orders, about five times longer than the company would have liked. The lengthy order processing time affected deliveries, which meant stores did not always receive stock on time.

In April 2010, Bokwang Family mart implemented the Oracle Exadata Database Machine. The result was a dramatic improved order processing times, so that the company can now process up to 900,000 orders in seven to eight minutes. The order filtering task can be completed in 30 seconds, compared to 15 minutes previously. Retail stores are now receiving the right amount of stock on time for seamless trading.

### Slow Order Processing Impacts Deliveries and Sales

For the retail industry, the efficient operation of point-of-sale and stock ordering systems is highly important. These systems must be able to process hundreds of thousands of transactions a day. Any system issues that affect the speed at which orders are processed will have flow-on effects on delivery and distribution times. If stores do not receive stock on time, they will miss out on sales and risk losing customers.

Bokwang Family mart stores order stock throughout the day. Orders are processed daily and sent to a logistics center, which then organizes three deliveries a day, based on location and transportation schedules.

As the number of stores and product ranges increased, Bokwang Family mart found that its ageing ordering system was not processing orders as quickly as it should. It could take up to 50 minutes to process daily stock orders, when ideally the task should be completed in less than 10 minutes. The lengthy order processing time affected delivery schedules, which meant stores did not have stock to sell and began losing out on sales. Logistics costs were also increasing.

Bokwang Family mart had deployed enterprise-class servers and in-memory database systems to address system performance issues, but these solutions did not result in any noticeable improvements in processing speed. After learning about Oracle Exadata at an Oracle seminar, the company decided to deploy the solution to run its ordering system.

**Key Benefits:**

- Processed up to 900,000 orders in less than 10 minutes, compared to 50 minutes previously
- Completed order filtering and product code checking in 30 seconds, compared to 15 minutes, previously
- Analyzed 16 months worth of order, product, and revenue data in 30 seconds, from five minutes previously
- Achieved on-time delivery, ensuring stock is available in stores for sale
- Ensured adhering to high quality standards for fresh food delivery
- Freed IT staff to focus on fixing system errors

**Order Processing and Filtering Times Cut**

Oracle Exadata has significantly improved performance since it went live in April 2010.

For example, the ordering system can now process up to 900,000 orders in seven to eight minutes, about three minutes faster than the mandated 10 minutes and significantly faster than the 50 minutes required before Oracle Exadata was implemented.

Orders are also filtered much faster. This task involves collating orders from stores, checking the validity of product codes, confirming the validity of transaction dates, and checking stock availability. Under the old system, this took 15 minutes, but after implementing Oracle Exadata, it is now completed in 30 seconds. The time taken to aggregate and send orders to the logistics center was greatly reduced, giving staff extra time to double check their orders.

“Oracle Exadata has greatly exceeded our expectations,” said Im Young-seok, team manager, systems planning team, information system division, Bokwang Family mart. “We have not encountered a single problem, and our staff is highly satisfied.”

**Analysis Time Cut from Five Minutes to 30 Seconds**

Oracle Exadata’s clustering capabilities ensure high availability and fast data processing. Bokwang Family mart found the solution so powerful that it uses it for data analysis, as well as online transaction processing.

Together with Oracle Exadata, the point-of-sale ordering system can now analyze up to 16 months worth of order, product, and revenue data in 30 seconds, compared to five minutes in the past.

**Delivery Times Improved**

Faster order processing times have enabled Bokwang Family mart to set more efficient delivery schedules with the logistics center and consumer product manufacturers. By realizing on-time deliveries, the company can provide customers with the products they want, when they want it.

In addition, Bokwang Family mart can also ensure high quality standards for fresh food products such as lunch boxes that need to be delivered quickly to ensure they do not spoil.

**More Time for Error Fixing**

With order processing times cut, IT staff has more time to maintain systems and address issues. In the past, if an error occurred during order processing, staff did not have time to check the cause of the error, as they were more concerned about getting orders processed. Now, staff has the time to determine the root cause of system errors and ensure they do not recur.

### **Streamlined Infrastructure Reduces Costs**

Bokwang Family mart has reduced IT costs by streamlining its IT infrastructure. In the past, the company's ordering and analysis systems were run on eight servers, but now both systems can be run on a single Oracle Exadata Database Machine Quarter Rack and six Web servers. The two storage systems previously attached to the ordering and analysis systems have been integrated into the Oracle Exadata Storage Server, further reducing hardware costs.

Bokwang Family mart expects the Oracle Exadata infrastructure to maintain its current level of performance for the next five years without the need to purchase additional hardware. The company is confident the platform will be able to support its planned expansion to 8,000 stores by 2015. It will consider extending Oracle Exadata to other applications in the future.

### **Why Oracle?**

Performance and reliability are the two most important features in an ordering system. Bokwang Family mart was initially hesitant about implementing Oracle Exadata, as there were no local references to vouch for the software's performance. However, a series of tests over three months convinced Bokwang Family mart that Oracle Exadata would deliver the performance, reliability, and high availability it was looking for. The company was also impressed with Oracle's extensive technical support.

### **Implementation Process**

Bokwang Family mart took three months to migrate data, tune the Oracle Database, and set parameters for tables and queries. This ensured the system would perform optimally when it went live in April 2010.

*Bokwang Family mart is South Korea's leading convenience store chain, with 5,000 outlets across the country.*

**Oracle Customer:****China Mobile Group Liaoning Co., Ltd (Liaoning Mobile)**

Shenyang, Liaoning Province, China  
www.chinamobile.com

**Industry:**

Communications

**Annual Revenue:**

US\$1 to US\$5 Billion

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## China Mobile Group Liaoning Co., Ltd (Liaoning Mobile) Achieves a More than Six-Fold Improvement in System Performance with Database Cloud

China Mobile Group Liaoning Co., Ltd (Liaoning Mobile) is the largest mobile communications provider in Liaoning Province, serving 27 million customers and generating annual revenue of US\$2.3 billion. The company has 14 branch offices and 56 county offices in the province, and it is responsible for communications network construction, maintenance, and service. Liaoning Mobile is a subsidiary of China Mobile Group, China's leading mobile communications provider.

Due to rapid growth in its mobile communications business, Liaoning Mobile's business operations systems (BOSS), which is the interface between the digital network control system and the administrative gateways of access network providers for both analog broadcast and digital broadcast services, were struggling to process data such as subscription fees and customer information in real time, and to support an increasing number of users. The company had to find a more efficient way to manage and use the database resources needed to run the BOSS systems, which vary significantly during busy and idle periods. It also had to address a number of integration issues between databases, servers, and storage systems.

To meet the needs of its complex, rapidly growing business, Liaoning Mobile implemented Exadata Database Machine X2-2 to build a database cloud architecture that improved performance and system resource utilization and cut deployment time for new applications.

After implementing Oracle Exadata Database Machine, Liaoning Mobile achieved a more than six-fold improvement in the performance of the BOSS systems, which enabled more transactions to be processed. Staff satisfaction and productivity increased, as the improved system response speeds reduced wait times for processing queries and transactions.

The Oracle solution also resulted in an 8- to 14-fold improvement in the data compression ratio, which reduced data storage capacity. If more capacity is needed, Liaoning Mobile can simply expand the Oracle Exadata Database Machine cabinet or the storage cell. This is a more flexible and cost-effective option than buying new servers. The company has also eliminated the need to make continuous adjustments to databases, servers, and storage systems as data volumes increase. This made database expansion easier, as system query performance is not affected by capacity.

**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 Premium Support

**Oracle Partner:****Hunkler GmbH & Co. KG**

www.hunkler.de

## Dialog Semiconductor plc Improves Corporate Database Solutions Using Exadata

“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 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.

With its unique focus and expertise in system power management, Dialog brings decades of experience to the rapid development of integrated circuits for power management, audio, display processing and motor control. Dialog’s processor companion chips are essential for enhancing the performance of hand-held products and the consumers’ multimedia experience. With world-class manufacturing partners, Dialog operates a fabless business model and has its headquarters near Stuttgart, with a global sales, research and development, and marketing organization.

As the company grew, the IT platform that stored the manufacturing data used for quality assurance was reaching its limits. Dialog Semiconductor needed a new solution that would be scalable, innovative, and support the company’s high performance requirements.

The company looked to Oracle and its Oracle Exadata Database Machine and accompanying solutions, based on Sun hardware and Oracle Database 11g Release 2. The new environment is delivering increased performance, as well as enormous technical and economic advantages.

### Success on All Fronts

Only two months after the introduction of Oracle Exadata Database Machine, the semiconductor specialist opted for this innovative product, which it hoped would simplify its system administration by reducing the number of configuration steps required. The new system—with its scalability and optimally coordinated system components—significantly accelerates data aggregation tasks.

“We can now complete jobs that used to take two-and-a-half hours in just 15 to 20 minutes,” said Kariem Yehia, head of IT at Dialog Semiconductor. “With Oracle Exadata Database Machine, we can complete jobs concerning data upload, such as the postprocessing of chip measurement results for a significant batch, 10 times faster. Instead of 60 minutes, this task now takes only several minutes.”

While the previous solution had been designed as a single instance database and was, therefore, not highly available, the new architecture has complete redundancy within the cluster. This approach ensures the desired high level of availability. Users see no difference in performance when individual components, such as hard disks, power supplies, or even entire servers, fail.

### Built in Scalability

The new environment has been designed to scale with the company’s high growth rate over the next two to three years.

**Key Benefits:**

- Reduced time required for computer-intensive processes by 90%
- Gained the ability to upload data 10 times faster
- Ensure high availability

Previously, a database administrator required, on average, one hour per day to maintain the legacy solution. With the new integrated environment built on Oracle Exadata Database Machine, the required management time is significantly lower.

Due to the higher capacity of the new system, Dialog Semiconductor also can now add applications, such as business intelligence platforms to the system that would have required an additional hardware before. Additionally, it will be able to implement far more complex algorithms, such as data mining, in future. “This clearly constitutes a competitive advantage for us,” Yehia said.

**Why Oracle**

Dialog Semiconductor’s decision to go with Oracle was based on the good experience it already had with the company. Dialog Semiconductor had previously consolidated most of its applications on Oracle Database 11g. The company favored the option of receiving all services from one source, according to Yehia.

The choice of Oracle Exadata aligns with Dialog Semiconductor’s creed of placing its bets on innovation, irrespective of whether it is using its own product range or the assets that contribute to the production of such solutions.

**Why Hunkler GmbH & Co. KG?**

Hunkler GmbH & Co. KG, a trusted partner to Dialog Semiconductor, was a logical choice when the time came to procure the new IT environment. Hunkler has been an Oracle partner in Germany for nearly 30 years, so it has decades of experience with Oracle solutions. As a specialist in Oracle licensing and project consulting, the company provides its customers with comprehensive support in planning, structuring, and operating high-performance database infrastructures.

**Implementation Process**

Before purchasing the Oracle Exadata environment, representatives of Dialog Semiconductor were able to clarify all open questions in a comprehensive technical discussion with Sun Microsystems and the Oracle team.

The implementation process proceeded smoothly, with the project completed three months. “We carried out comprehensive tests in advance and migrated to the new system on an application-by application basis,” Yehia said. “When it turned out that a production-related hardware fault was adversely affecting the performance, the Oracle project manager—as Dialog Semiconductor’s direct contact person—competently coordinated the steps required to eliminate the fault, so that we were able to adhere the deadline for the migration. Thus, our decision to use a single support contact proved to be correct.”

**Oracle Customer:****e-Dialog**

Burlington, MA  
www.e-dialog.com

**Industry:**

Professional Services

**Employees:**

400

**Oracle Products & Services:**

- Oracle GoldenGate
- Oracle Exadata Database Machine
- Oracle Enterprise Manager  
Grid Control

“Oracle Exadata Database Machine gives us the performance and scalability that we need to provide increasingly sophisticated analytics to our customers. Oracle GoldenGate was essential to a successful migration—enabling us to transition without impact for customers.”

**Tarang Patel**, Director, Database Administration and Operations, e-Dialog

## e-Dialog Ensures Business Continuity with Virtually No System Downtime During Infrastructure Migration

e-Dialog, part of GSI Commerce Inc., provides integrated digital marketing solutions to businesses worldwide. Its technology and services give marketers direct access to timely customer insight that drives targeted consumer dialogs. e-Dialog helps marketers transform conversations into conversions.

**Challenges**

- Support 50% year-over-year increase in message volume
- Ensure extreme performance of its multichannel marketing and campaign analytics services as message volume increases
- Ensure absolute business continuity when migrating to a new data infrastructure

**Solutions**

- Selected Oracle Exadata Database Machine as the foundation for a new data infrastructure
- Demonstrated the cost effectiveness of migrating to Oracle Exadata by eliminating the need for additional storage, processing, and clustering software
- Improved processing performance and scalability to enable increasingly sophisticated marketing services and analytics for its clients
- Used Oracle GoldenGate to migrate more than 12 terabytes of data from the heterogeneous legacy environment to Oracle Exadata without impact, ensuring business continuity
- Completed the migration in phases over six months using Oracle GoldenGate's bidirectional replication capabilities that allowed e-Dialog to run the legacy system along with Exadata concurrently
- Streamlined monitoring and management of Oracle Exadata with Oracle Enterprise Manager Grid Control Exadata Monitoring plug-in bundle

**Oracle Customer:****Enkitec**

Irving, TX

www.enkitec.com

**Industry:**

High Technology

**Employees:**

More than 50

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## 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-intensive 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

**Oracle Customer:****Finansbank A.S.**

Istanbul, Turkey

[www.finansbank.com.tr](http://www.finansbank.com.tr)**Industry:**

Financial Services

**Annual Revenue:**

US\$1.73 billion

**Employees:**

11,000

**Oracle Products & Services:**

- Oracle Exadata Database Machine

**Oracle Partner:****IBTECH**[www.ibtech.com.tr/index-eng.html](http://www.ibtech.com.tr/index-eng.html)

“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

**Oracle Customer:****FORS Development Center LTD**

Moscow, Russia

www.fors.ru

**Industry:**

Professional Services

**Annual Revenue:**

US\$100 to US\$500 Million

**Employees:**

300

**Oracle Products & Services:**

- Oracle Exadata Database Machine

“In our Moscow-based ExaStack Studio, we provide an end-to-end range of services—including testing, processing, and migrating applications and databases—to demonstrate to our customers and to Oracle’s partner community the extraordinary efficiency and unbeatable advantages of Oracle Exadata Database Machine.”

**Andrey Tambovsky**, Head of Oracle Exadata Department, FORS Development Center LLC

## FORS Development Center LTD Builds Exadata Test Center to Demonstrate Robust Processing Capability

Established in 1991, FORS Development Center LTD (FORS) is a top player in the Russian information technology market and one of the leading Oracle partners in Europe, the Middle East, and Africa. FORS develops and implements comprehensive Oracle-based IT systems, provides consulting services in modeling technical and business processes, markets Oracle products, and offers certified Oracle training.

**Challenges**

- Enable the Oracle partner community in Russia to optimize the performance of each application type—such as Oracle’s, custom, and independent software vendors’ (ISV) applications
- Assist partners in obtaining certification for ISV applications on Oracle Exadata Database Machine
- Enable FORS’ enterprise clients to conduct performance testing on their data warehousing, mixed workload consolidation, and online transaction processing (OLTP) applications

**Solutions**

- Established the first test center in Russia to demonstrate Oracle Exadata Database Machine’s capabilities for database consolidation, OLTP, and data warehousing by offloading query processing and implementing standardized reporting
- Enabled Oracle partners, as well as present and potential customers, to take part in a live experience that demonstrates the processing capabilities of Oracle Exadata Database Machine—including proof of concept to measure runtime and performance improvements—and certify ISV applications on Oracle Exadata Database Machine
- Provided organizations with the opportunity to discover their optimization potential in advance, such as achieving reporting times 5 to 10 times faster and realizing significant cost reductions by consolidating IT and data management on multiple compression tiers, modernizing data centers, and enabling cloud computing
- Compressed data volumes handled by a communications services provider from 5 terabytes to 500 gigabytes to enable faster information processing and release disk space for other applications or purposes
- Increased query speed approximately 300 times for an industrial manufacturer while accelerating reporting response rates by a factor of 12

**Oracle Customer:****HISCOM Co., Ltd**

Tokyo, Japan

www.hiscom.co.jp

**Industry:**

Professional Services

**Employees:**

70

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## HISCOM Co., Ltd Improves Data Processing Speed by 3,000%, Cuts Batch Processing Time

“Oracle Exadata offers the performance and reliability needed for high-speed and high-volume online transaction processing. We have improved data processing speed by 3,000% and shortened batch processing time by 97%.”

**Atsumasa Shimizu**, CEO, HISCOM Co., Ltd

Founded in 2003, HISCOM Co., Ltd is the systems integration business of the Hokuriku Coca-Cola Bottling Co., Ltd. HISCOM was established to provide IT services to Hokuriku Coca-Cola Bottling and external clients. These services include planning, design, research and development, and the sale of information systems. The company also runs shared services and call centers.

Hokuriku Coca-Cola Bottling was running a large number of systems, an Oracle Database and a Teradata data warehouse to process and analyze sales and order data from Coca-Cola retailers and vending machines. The amount of data could reach more than 5 million records a month. As the volume of data increased, it started taking longer to store, extract, process, and load it into the data warehouse. Queries and batch processing slowed down, hampering the ability of staff to work efficiently.

To address these issues, Hokuriku Coca-Cola Bottling engaged HISCOM to implement Oracle Exadata. The storage software enabled Hokuriku Coca-Cola Bottling to improve data processing speed by more than 3,000%, which shortened batch processing time by 97% and enabled complex search queries to be completed in five seconds, compared to three minutes in the past. Hokuriku Coca-Cola Bottling also eliminated data warehouse licensing costs.

### Processing Growing Data Volumes

In 2005, HISCOM developed an infrastructure based on Oracle Database, Oracle Real Application Clusters, and a Teradata data warehouse to enable Hokuriku Coca-Cola Bottling to process and analyze large volumes of business information. This included order data and itemized sales information from Coca-Cola retailers and almost 6,000 Coca-Cola vending machines.

The data was stored in the Oracle database, then extracted, processed, and loaded into the Teradata data warehouse for analysis.

With data volumes reaching up to 5.35 million records a month, it was taking longer to process data. For example, it took more than ten minutes to return a complex search result, and increasing data volumes caused a risk of incomplete batch processing.

The heterogeneous database and data warehouse environment was also becoming difficult to manage. System specialists were needed to maximize the performance of every component; if there were any changes in the business, various systems had to be configured to enable analysis to take place.

According to HISCOM CEO Atsumasa Shimizu, greater processing power and flexibility was needed. “To analyze growing amounts of data, we needed a high-speed processing solution for our data warehouse,” he said. “We also needed a more adaptable solution to help improve internal control.”

HISCOM also wanted to make stored data available to senior managers and the planning division in real time. Introducing this capability would also see an increase in the number of users.

**Key Benefits:**

- Improved data processing speed by more than 3,000%
- Shortened batch processing time from 50 minutes to 80 seconds
- Enabled complex search queries to be completed in five seconds, compared to three minutes previously
- Eliminated data warehouse licensing costs
- Provided sales representatives with accurate, up-to-date data that can be used to engage existing and potential customers
- Gave technicians the skills to help clients migrate to Oracle Exadata

**Faster Data and Batch Processing**

In 2009, HISCOM implemented Oracle Exadata, after a proof-of concept revealed that the software improved data processing speed by 3,000%, compared to using a separate database and data warehouse to complete the same function.

After the solution was deployed, Hokuriku Coca-Cola Bottling experienced significant improvements in data processing speed. Faster data 'reading' has speeded up batch processing time from 50 minutes to 80 seconds, meaning order, logistics, sales, and financial reports can be provided to managers much faster. Complex search queries are now completed in five seconds, compared to three minutes previously.

**Licensing Costs Eliminated**

There is also no need to extract, process, or load data from the Oracle database to the Teradata data warehouse as these processes are integrated into Oracle Exadata. This has enabled Hokuriku Coca-Cola Bottling to eliminate Teradata licensing fees. Moreover, it can extend processing power by simply adding disks or processing units. This ensures the required performance can be obtained with minimal investment.

**Faster Analysis**

The Oracle Exadata environment ensures all new data is included in business intelligence analysis. This has improved the timeliness of data and enabled Hokuriku Coca-Cola Bottling sales representatives to engage existing and potential customers with accurate information.

"This could not have been achieved if we had continued to operate our database and data warehouse as separate systems," said Takeyuki Watanabe, director, system division, HISCOM.

**Oracle Skills to Assist in Client Projects**

The Oracle Exadata implementation at Hokuriku Coca-Cola Bottling provided HISCOM technicians with a good understanding of the product and how to make a smooth transition from Teradata. According to Katsumi Takayori, sales vice manager, HISCOM, the company will use this knowledge to build its systems integration business.

"We will take advantage of the skills gained on the Hokuriku Coca-Cola Bottling project to assist clients planning to implement Oracle Exadata," he said. "We hope to build a closer partnership with Oracle to maximize the performance of the Oracle solution in our clients' sites."

**Why Oracle?**

Hokuriku Coca-Cola Bottling was running its Oracle database and Teradata data warehouse on two servers. This was one of the reasons why performance was slow, as the hardware was struggling to run two data-intensive applications.

HISCOM had embarked on a server consolidation program on behalf of Hokuriku Coca-Cola Bottling in 2007 to reduce the number of physical servers, as well as cut server licensing and maintenance costs. The company implemented virtualization software to consolidate servers but found it too challenging to move the database and data warehouse to a virtual server.

Oracle Exadata was a possible solution to this problem, as the software could function as both a database and a data warehouse. It also offered powerful data processing capabilities and the high reliability needed for online transaction processing.

HISCOM undertook a proof-of-concept to validate the performance of Oracle Exadata, using actual data and several SQL searches. The result—data was processed 30 times faster—was “far better than we expected”, according to Watanabe, and convinced HISCOM to implement Oracle Exadata.

*Founded in 2003, HISCOM Co., Ltd is the systems integration business of the Hokuriku Coca-Cola Bottling Co., Ltd. HISCOM was established to provide IT services to Hokuriku Coca-Cola Bottling and external clients.*

**Oracle Customer:****Hong Kong Housing Authority**

Hong Kong

www.housingauthority.gov.hk

**Industry:**

Public Sector

**Employees:**

More than 8,000

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## 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

**Oracle Customer:****Hotwire, Inc.**

San Francisco, CA

www.hotwire.com

**Industry:**

Travel and Transportation

**Employees:**

250

**Oracle Products & Services:**

- Oracle Exadata Database Machine

“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.

## 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 CarRentals.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 Customer:****IDS GmbH – Analysis and Reporting Services**

Munich, Germany

www.investmentdataservices.com

**Industry:**

Financial Services

**Employees:**

200

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Oracle Customer Support

**Oracle Partner:****Information Systems Engineering GmbH**

www.ise-informatik.de

“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

**Oracle Customer:****Indústria de Produtos Alimentícios Piraquê S.A.**

Rio de Janeiro, Brazil  
www.piraque.com.br

**Industry:**

Consumer Goods

**Employees:**

4,000

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Oracle Application Server  
Enterprise Edition
- Sun Ray Software
- Sun Ray 3 Plus Client
- Sun Ray 3i
- Oracle Solaris

**Oracle Partner:****MarkWay**

www.markway.com.br

“With Oracle Exadata we have solved our physical and digital storage space problems for the next ten years. In addition, we have achieved an 80% to 90% improvement in the performance of our IT environment, and this has triggered improved processes in areas such as logistics and accounting.”

**Clébio Freitas Lopes**, IT Manager, Indústria de Produtos Alimentícios Piraquê S.A.

## Indústria de Produtos Alimentícios Piraquê S.A. Improves System Performance by 80% to 90%

Indústria de Produtos Alimentícios Piraquê S.A. (Piraquê Food Products Industry) is one of the largest producers of pastas, cookies, and margarines in Brazil. Its products, sold directly in the southeast region and through distributors in other parts of Brazil, are exported to Japan, Europe, and Africa. Founded in 1950, Piraquê is a 100% Brazilian family-owned company, still run by its founder, Celso Colombo.

**Challenges**

- Achieve IT infrastructure scalability to enable sales growth up to 12% per year without impacting the monthly production of 7,500 tons of pastas, cookies, and margarines
- Acquire a data storage architecture to support the company’s growth for at least the next five years
- Accelerate the processing of 4,000 daily orders to avoid product delivery delays

**Solutions**

- Worked with Oracle Partner MarkWay to install an Oracle Exadata Database Machine and Oracle Exadata Storage Server architecture, providing Piraquê with high performance and scalability to absorb a projected sales growth of 10% to 12% per year
- Solved the company’s physical and digital data storage space problem—which pushed the servers to their limits—with Oracle Exadata, providing an environment with the capacity for Piraquê’s data storage and IT system needs for the next ten years
- Achieved a 100% on-time delivery rate in the state of Rio de Janeiro, where more than 85% of Piraquê’s customers are concentrated and where all orders need next-day delivery
- Attained immediate responses for critical processes—such as reducing the time required for annual sales consolidation and costing from approximately 90 minutes to less than 6 minutes
- Expedited data processing by 80% to 90% and consequently accelerated all processes triggered by the digital information, such as logistics, accounting, and executive decision-making
- Maintained uniformity in the company’s IT environment, since the architecture, database, operating system, the company’s ERP system (using Oracle Forms and Oracle Reports), and development tools are all Oracle products

**Oracle Customer:****Information Systems Engineering GmbH**

Gräfenberg, Germany  
www.ise-informatik.de

**Industry:**

Professional Services

**Employees:**

60

**Oracle Products & Services:**

- Oracle Exadata Database Machine

# 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

**Oracle Customer:****LinkShare Corporation**

New York, NY  
www.linkshare.com

**Industry:**

High Technology

**Employees:**

132

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Oracle Enterprise Manager
- Oracle Business Intelligence Suite Enterprise Edition

**Oracle Partner:****Pythian**

www.pythian.com

“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

**Oracle Customer:****Merck & Co.**

Whitehouse Station, NJ  
www.Familymart.co.kr

**Industry:**

Retail

**Annual Revenue:**

US\$27.4 billion (2009)

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Oracle GoldenGate

**Oracle Partner:**

CambridgeSoft

## Oracle Exadata Achieves Fivefold Performance Increase for Critical Product Research Platform by Merck & Co.

“We really knocked it out of the park. The chemistry group, which is one of the biggest users of E-lab notebook, is very happy with what we delivered.”

Merck & Co.

Merck is a global research-driven pharmaceutical company. Merck discovers, develops, manufactures and markets a broad range of innovative products to improve human and animal health, directly and through its joint ventures.

### Executive Summary

A modern version of the traditional laboratory notebook, the electronic laboratory notebook, or ELN, is becoming a critical asset in the pharmaceutical industry, giving scientists new power to collaborate and share experimental data with colleagues from various research divisions. Merck & Co. embraced the CambridgeSoft ELN technology as an early adopter in 2002, and the application was quickly accepted by Merck’s global research teams. As a result, the volume of ELN-documented experiments and number of users exploded. Today, with over 4,000 users, the Merck ELN is one of, if not the largest deployed ELN system in the pharmaceutical industry worldwide.

With the rapid growth of users and data volume, Merck and CambridgeSoft worked diligently to keep pace with the expansion and simultaneously maintain performance. As a result, changes were made to the application itself as well as to the infrastructure.

Merck’s planning made it clear that rapid user growth was expected to continue and correspondingly, the size of the database would also continue growing very rapidly. This growth was expected to outpace the application of conventional approaches to maintain acceptable performance. In addition to CambridgeSoft’s engineering enhancements and traditional infrastructure changes, Merck decided to explore non-traditional options to provide a long-term solution.

Merck 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 cost performance. The company rolled out the Exadata solution in late 2010, using Oracle GoldenGate data-synching technology to make the switch in a single weekend, as opposed to taking weeks for migration using conventional software. Essentially, there was no business downtime.

Following the move, ELN performance surged, with Merck conservatively estimating a fivefold increase in query response speed as well as substantially faster user login and navigation performance, even as the company simultaneously expanded the user base by 30%. Other improvements have included lower system resource utilization, optimized storage space, and workload consolidation.

All told, Merck is expected to realize benefits totaling an estimated \$8 million from its Oracle Exadata investment.

**Key Benefits:**

- 159% ROI over 3 years
- Increased speed of ELN searches by 5 times
- Total benefits of \$8M over 3 years
- Reduced memory utilization by 40%, reducing the need for further immediate investment
- Reduced CPU utilization to 10%, providing significant capacity for growth
- Doubled the size of the user base without impact to performance
- Increased scientist efficiency

Beyond the direct infrastructure and productivity savings, the exponential jump in ELN performance enabled by Exadata is empowering scientists to quickly access experimental data and collaborate more effectively with other research teams—a benefit that holds tremendous potential in terms of future product development, innovation, and revenue.

With the increase in system responsiveness, Merck's confidence in the system's scalability improved, as did the user experience. Scientists now have a tool that keeps up with their way of doing business.

**Background**

One of the world's largest pharmaceutical companies, Merck & Co. discovers, develops, manufactures and markets a broad range of innovative products to improve human and animal health, directly and through its joint ventures. New Jersey-based Merck operates in 140 countries<sup>1</sup> and in 2009 significantly expanded its market share with the acquisition of Schering-Plough, the maker of Claritin, Coppertone, and many other brands.

At the heart of Merck's operations are the thousands of researchers and scientists who invent, develop and test new products in a network of laboratories that span a wide geography. Collaboration is essential to the success of these research teams: scientists are more productive when they can quickly access the experimental results and techniques of their colleagues. Indeed, increasing collaboration is a major reason why pharmaceutical companies have adopted electronic laboratory notebooks, or ELNs—a secure, highly searchable form of the traditional paper-based lab notebooks.

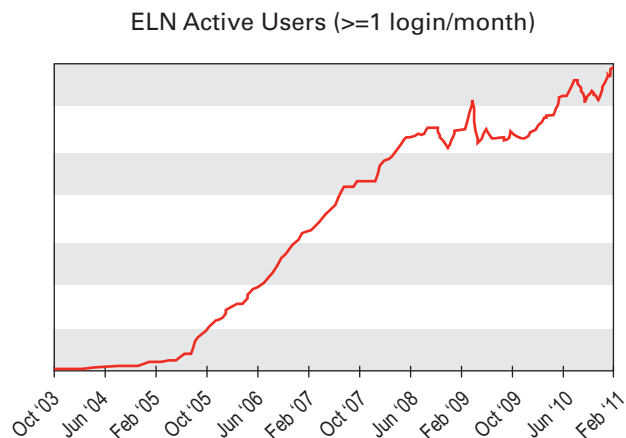
Merck made the move to online lab notebooks in 2002 when it rolled out CambridgeSoft E-Notebook, a leading ELN solution. Today, ELN is a strategic asset for the company and the primary means for capturing the intellectual property created by Merck's scientists. Scientists document the discoveries and conclusions of their experiments in the online notebooks and then search the database for information to help them plan the next phase of their experiments.

For example, a chemist working on a promising new drug compound will search the ELN database to learn if anyone else had made a similar or related compound—and then use that information to plan the next stages of his experiment. Searching collective information on experiments enables Merck scientists to be more productive and leads to greater innovation.

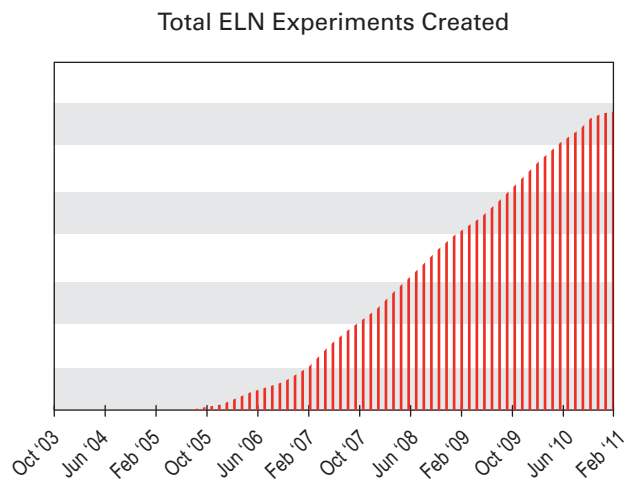
The growing use of ELN, however, began to put strains on system capacity and performance. Between 2003 and 2010, the user base doubled and the size of Merck's ELN database grew to more than 4 terabytes.

<sup>1</sup> From Merck corporate Website

**Figure 1: Active Users of Merck’s ELN Application**



**Figure 2: Number of Experiments Documented in ELN Application**



With system usage and database size soaring, information searches began to slow. “As more and more people plugged into the ELN platform, more and more people wanted to use it,” said Merck. “That meant that the platform’s performance got progressively worse over time as we struggled to keep up with infrastructure enhancements. CambridgeSoft also worked with us to streamline the search process, which yielded tangible improvements.”

Still, slowing performance hurt researchers’ productivity, since scientists were hindered from taking full advantage of the system to assist with research.

Merck’s initial attempts at fixing the problem with conventional methods — including adding hardware and memory and upgrading CPUs — met with limited success as the expanding user base, experiments and searches continued to outpace efforts to upgrade system hardware.

Consequently, in 2010, Merck resolved to permanently solve its ELN performance issues by embracing the next generation of database and storage technologies.

### **The Oracle Exadata Solution**

Oracle Exadata emerged as the logical alternative to conventional database technologies, offering significantly faster performance for both data warehousing and online transaction processing (OLTP) applications, including electronic lab notebooks. Oracle Exadata combines servers, storage, networking, and software in an integrated platform that is massively scalable, secure, and redundant.

Following a successful pilot, which included CambridgeSoft's participation in the Exadata optimization, Merck deployed Oracle Exadata in late 2010 as the standard platform for its ELN solution. Because the switch to Exadata represented a major system change involving both new hardware and new Oracle software, Merck was anticipating more than a week of downtime for the migration. But Merck minimized downtime to a single weekend by deploying Oracle GoldenGate to keep the old and new environments synchronized during the transition.

"We were literally able to flip the switch to launch the new platform," said Merck. "Scientists left Friday afternoon and returned Monday morning to a new system that was up and running with all the old data. There was no negative impact to the scientists." Moreover, Merck wasn't required to make any changes to the ELN application itself to run on Oracle Exadata.

### **Operational And Strategic Benefits**

In the months following the switch to Oracle Exadata, Merck has seen a host of operational and financial benefits ranging from dramatically faster system performance to millions of dollars in avoided solution-replacement costs. From a strategic perspective, the move to Exadata enables Merck's scientists to more fully utilize the ELN platform, boosting their research capabilities and potentially speeding product innovations.

### **Fivefold Performance Increase**

With Oracle Exadata, Merck improved ELN search speeds by at least four-to-five times, easily meeting the IT group's service level agreement (SLA) target of 30 seconds for most searches. Timeouts were eliminated. "Overall, we realized about a 5x improvement in performance, even with complex searches," said Merck.

As shown in Table 1, the move to Exadata led to enhancements across a range of ELN performance measures — from faster user logins and navigation, to speedier text and structured-data searches. Merck's IT team calls the fivefold speed boost a conservative estimate because many of the queries in the legacy environment were terminated before returning results. Other estimates place the performance boost at nearly 10 times (in a controlled environment).

**Table 1: Performance Increase Achieved by Merck with Oracle Exadata**

	Before: Average time (in seconds)	After: Average time (in seconds)	Average Performance Improvement
Text Search (27 Steps)	99.8	23.2	4.3x
Structured Search (43 Steps)	74.2	14.0	5.3x
Structured Search Combined with Text Search (15 Steps)	232.8	40.0	5.8x

“We really knocked it out of the park,” said Merck. “Our chemistry group, which is one of the biggest users of E-lab notebook, is very happy with what we delivered.” Merck attributes the faster search performance to two technology advancements found in the new Oracle platform: Exadata Smart Scan, which filters out data that is not relevant to a query, and Exadata Smart Flash Cache, which improves performance for OLTP applications.

#### Lower Utilization Rate

The database efficiency improvements driven by Exadata — which offloads a large portion of data processing to the storage layer — has had a positive impact on system utilization rates at Merck: Memory utilization is now running around at 50–60% of capacity and CPU utilization at around 10–15% — a significant reduction in both cases.

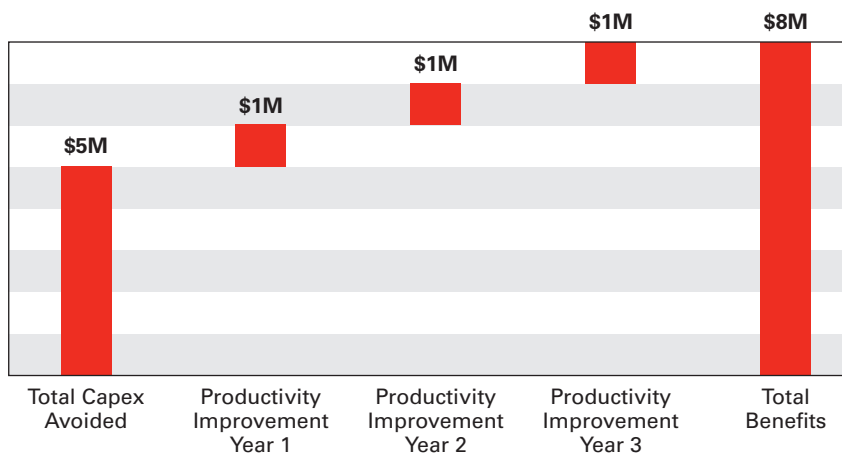
#### More Productive Scientific Research

The move to Exadata means scientists are more likely to probe every promising idea. “Combined with the CambridgeSoft ELN, Oracle Exadata allows scientists to execute more sophisticated searches and get faster access to information they previously weren’t able to easily access.” said Merck. This also means that there are no concerns about adding thousands more users to the CambridgeSoft E-Notebook platform as is currently planned.

#### Estimated \$8 Million In Total Benefits

Figure 3 illustrates the total benefits of Merck’s Oracle Exadata investment over three years. Additional savings will come from writing off Merck’s legacy database servers and storage equipment, and from productivity improvements related to faster searches and research collaboration.

Figure 3: Benefits by Category – Three-Year View



**Conclusion**

Facing an increasingly globalized and competitive marketplace, pharmaceutical companies are being pressured to develop and launch products faster than ever before. That new reality has put a premium on laboratory research efficiency and productivity. More than ever, companies are seeking ways to accelerate the experimental process, collaborate more efficiently, and make rapid decisions regarding research projects.

One way that Merck has responded to the challenge is by deploying Oracle Exadata to transform the data-processing backbone of its ELN application. As a result, Merck scientists are finding and sharing research information five times faster on average, and they are now accessing valuable experimental data that was previously inaccessible.

The business potential unleashed by Merck’s ultra-fast ELN is enormous. Today, scientists are significantly more productive and connected to the research of their colleagues across the company, which is strengthening collaboration and building the foundation for rapid, market-beating innovations.

**Oracle Customer:****Nagase & Co., Ltd**

Tokyo, Japan

www.nagase.co.jp

**Industry:**

Chemicals

**Annual Revenue:**

US\$6.4 billion

**Employees:**

994

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## Nagase & Co., Ltd Cuts Batch Processing Time by One-Third, Improves Regulatory Compliance

“Oracle Exadata Database Machine offers extreme performance processing capabilities, translating to faster response times over our previous Teradata solution, and it’s more affordable. The performance improvements supply our marketing team with consolidated management, and the compliance team has, for the first time, near real-time access to critical information around chemical trading.” **Mitsuaki Ito**, General Manager and Executive Officer, Business Administrative Office–IT Administrative Office, Nagase & Co., Ltd

Founded as a dyestuff wholesale store in Kyoto in 1832, Nagase & Co., Ltd is now a diversified business, importing and exporting chemicals, plastics, electronic materials, cosmetics, and health foods. Headquartered in Tokyo, the company has offices in Europe, North and Central America, the Middle East, and North East and South East Asia.

As a global business, Nagase requires sales and other business information availability in real time. The company had an enterprise data warehouse for querying and batch processing, but found the performance unsatisfactory. For example, overnight batch processing sometimes ran into the next business day, which affected the company’s ability to do business.

Nagase discovered it was cost prohibitive to upgrade its existing Teradata data warehouse. The company was looking for better cost performance in a solution that could be deployed in days once it arrived in the data center. After implementing Oracle Exadata Database Machine, Nagase enjoyed faster query responses and batch processing, and easier, risk-free maintenance. The ability to retrieve information quickly from large stores of data also ensured compliance with international chemical trading regulations.

### More Powerful Performance Needed

Nagase’s global operations benefits greatly from having access to real-time information. “Our aim is to anticipate our customers’ needs as early as possible and ensure we have the products on hand to fulfill their requests,” said Mitsuaki Ito, general manager and executive officer of the Business Administrative Office, Nagase.

“Providing our staff, from senior managers to warehouse workers, with real-time sales and business information is essential if we are to take advantage of business opportunities.”

Nagase was using a six-year-old Teradata data warehouse that struggled to complete large batch processing jobs and respond quickly to staff queries.

“Month-end batch processing jobs in particular took a long time,” said Kenji Yoshizawa, general manager, System 2 Division, Business Administrative Office, Nagase. “Sometimes we couldn’t finish batch processing until the morning of the next business day, which made it difficult for our staff to do their work. Our supply chain planning was inefficient as we did not know exactly what products we should be shipping to our customers”

According to Ito, scalability was also important. “Over 40% of our sales come from outside Japan,” he said. “Our head office and overseas offices require access to the same real-time data. As our business grows overseas, we want to know our enterprise data warehouse can also scale.”

**Key Benefits:**

- Gained a powerful, scalable data processing system with 10 times the capacity of the legacy solution at a lower cost
- Enabled senior officials to receive a query response in three to five seconds
- Provided sales representatives with responses to queries in under 10 seconds
- Cut batch processing time by one-third
- Gained the capability to store 10 years' worth of data and retrieve the relevant information in 20 to 30 minutes
- Eased the IT maintenance task by adopting a widely-used technology platform

**Faster Query Response Times and Batch Processing**

After witnessing the performance of Oracle Exadata Database Machine at an Oracle event, Nagase undertook a proof-of concept. The results were impressive enough to convince the company to implement Oracle. For example, the search time for the real-time query test was cut from six minutes to 2.5 seconds, while batch processing time for large data queries reduced from 30 minutes to 13.4 seconds. "Speeding up processing times even as our data volumes grow is always a goal for the Information Systems Division," said Ito.

"Senior officials need a response within three to five seconds, while sales representatives don't want to wait any longer than 10 seconds," said Ito. "Oracle Exadata Database Machine enabled us to meet these requirements easily."

He added that batch processing times for monthly reports have also been cut by one-third.

**Regulatory Compliance Strengthened**

Japan has tightened already strict regulations governing the trade of chemicals in and outside the country.

With toxic substance and environmental control under high scrutiny in recent times, Nagase is confident it can comply with such new regulations. The Oracle Exadata Database Machine has no problem housing 10 years' worth of data and extracting the required information in 20 to 30 minutes, depending on the parameters.

"We now have a solution that ensures we can meet the strict data retention and retrieval requirements," said Ito.

**Easier, Risk-free Maintenance**

The biggest benefit for the Information System Division is the improvement in efficiency between the database and storage servers.

"Funding technical experts who could maintain our previous Teradata platform was costly," said Ito. "It is much more cost effective with Oracle Exadata Database Machine, as we can leverage our existing Oracle skill sets and save costs by eliminating our stovepipe Teradata system. Furthermore, there were not many technicians available who had the knowledge and experience to manage non Oracle information systems. It was quite a risk for the business.

"We can run mixed workloads with both our critical business and information systems running on Oracle Exadata Database Machine," said Yoshizawa. "Because we have used Oracle Database for more than 15 years, we know how Oracle products work. Our ability to maintain our information infrastructure has been significantly improved."

### Global Standardization Required

Nagase plans to standardize on Oracle Exadata Database Machine globally, to leverage the processing power necessary to consolidate its subsidiary operations. Currently, each country operates by its own rules. Standardizing on a common platform and processes would solve operation and governance issues. This will enable the company to strengthen the management of its global operations.

### Why Oracle?

Nagase initially considered upgrading its Teradata data warehouse. However, the company found the upgrade too expensive. Moreover, if it wanted to increase capacity, the cost would be even higher. A new solution was needed.

Oracle was selected after a number of Nagase executives attended an Oracle Exadata summit in February 2009.

According to Ryosuke Sasaki, leader of the Corporate Planning Office, IT Planning Team, at Nagase: "I was very impressed by the extreme performance and fast implementation time of Oracle Exadata Database Machine. I thought we could certainly use a solution like that."

Osamu Oda, systems engineer, IT Management Section, Systems and Logistics Management Division, Business Administrative Office, Nagase, also agreed. "I thought a data warehouse needed a special server to perform properly, but Oracle Exadata Database Machine completely changed my mind."

Another reason for selecting Oracle was the competitive price. "Even though the Oracle Exadata Database Machine half-rack offered 10 times more capacity than our previous Teradata solution, it was more competitively priced than upgrading our legacy platform," said Ito.

He added that Oracle's credentials as a "stable and reliable world class company that is the global market leader in data warehousing" gave Nagase confidence that the Oracle solution could handle the company's commercially-sensitive management information.

### Implementation Process

After using Oracle database solutions for 15 years, Nagase has confidence and deep experience in implementing Oracle solutions. The Nagase IT team was able to quickly deploy Oracle Exadata Database Machine, a job they completed in December 2009.

*Nagase & Co., Ltd is a diversified business importing and exporting chemicals, plastics, electronic materials, cosmetics, and health foods.*

**Oracle Customer:****PHH Corporation**

Mount Laurel, NJ

www.phh.com

**Industry:**

Financial Services

**Oracle Products & Services:**

- Oracle Exalogic Elastic Cloud
- Oracle Exalogic Elastic Cloud Software
- Oracle Exadata Database Machine

## PHH Corporation Improves Business Agility, Lowers Overall IT Costs

PHH Corporation is a leading provider of mortgage solutions and automotive fleet management services through its two subsidiaries, PHH Mortgage and PHH Arval. It offers end-to-end mortgage solutions to customers, including financial institutions, credit unions, real estate companies, and government agencies. In addition, it manages nearly 570,000 vehicles for corporate and government clients across North America.

**Challenges**

- PHH Corporation needed to implement a flexible technology framework to provide greater agility in a rapidly evolving market, as well as an improved means to capitalize on new business opportunities

**Solutions**

- The Oracle solution facilitates these goals and lowers overall IT costs
- Oracle technology and resources are critical to the success of our common technology platform

“We chose Oracle Exalogic Elastic Cloud X2-2 Half Rack and Oracle Exadata Database Machine X2-2 HC Half Rack to help standardize our IT infrastructure, centrally manage our systems, free up resources, and maintain tighter control over unstructured data and storage growth.”

**Jeff Bell**, Chief Information Officer, PHH Corporation

**Oracle Customer:****Polk**

Southfield, MI  
www.polk.com

**Industry:**

Automotive

**Employees:**

1,330

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Oracle Partitioning
- Oracle Enterprise Manager

## Polk Cuts Analysis Time from Several Minutes to a Few Seconds with Database Machine

Polk is a leader in automotive information and marketing solutions. The company, collects and interprets data, and provides extensive automotive business expertise to help its customers understand their market positions, identify trends, build brand loyalty, win new business, and gain competitive advantages.

**Challenges**

- Improve database performance to meet the challenge of providing real-time analysis of global automotive markets to manufacturers and other customers
- Ensure scalability to store and process rapidly expanding data volumes
- Provide customers with more in-depth analysis of automotive markets by incorporating other types of analytical data with spatial mapping demographics data

**Solutions**

- Enhanced customer experience by using Oracle Exadata Database Machine to improve data quality and accelerate data processing time
- Realized a tenfold improvement in database query speed with Oracle Exadata Database Machine
- Reduced turnaround time for approximately 80% of automotive industry reports from up to five minutes to just seconds
- Supported a much higher level of concurrent analyses, enabling 50 to 100 data warehouse queries to run simultaneously
- Improved concurrency and response time to enable more robust analytic reporting for customers
- Reduced storage costs by using Oracle Exadata Database Machine's Hybrid Columnar Compression to compress data 10 to 15 times
- Used Oracle Partitioning to efficiently segment tables and indexes into smaller, more manageable components to drive improved database performance and availability

"With Oracle Exadata Database Machine, the bulk of the reports that were taking up to five minutes now just take seconds. The speed, response, and performance improvement is just astounding."

**Douglas Miller**, Director of Global Database Development and Operations, Polk

**Oracle Customer:****SoftBank Mobile Corporation**

Tokyo, Japan  
mb.softbank.jp

**Industry:**

Communications

**Annual Revenue:**

US\$19.4 billion

**Employees:**

6,300

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## 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 centres.

"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.*

**Oracle Customer:****Sogeti USA LLC**

Dayton, OH

www.us.sogeti.com

**Industry:**

Professional Services

**Annual Revenue:**

US\$2 billion

**Employees:**

2,000

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Oracle Financials
- Oracle Human Resources
- Oracle Assets
- Oracle Internet Expenses
- Oracle Accounts Payable
- Oracle Accounts Receivable
- Oracle Time and Labor

“As an IT consulting services provider, we know a successful project when we see one, and our migration to Oracle Exadata was a huge success. We have consolidated OLTP applications and enhanced reporting, while improving productivity and reducing costs.”

**Manohar Reddy**, Sr. Manager of Applications, Sogeti USA LLC

## Sogeti USA LLC Improves Performance and Productivity of Critical Business Systems

Founded in 1967, Sogeti is a leading provider of IT consulting services. It is a member of the Capgemini Group, one of the world's largest consulting services firms, and has 20,000 experts in 15 countries. Sogeti USA LLC is headquartered in Dayton, Ohio, with local branches in 23 cities across the United States. It specializes in enterprise IT solutions including application development, infrastructure services, business information management, testing, advisory services and engineering services.

### Challenges

- Support growing business with scalable, cost-effective business systems
- Improve performance of company's OLTP applications
- Move from a batch-reporting to a real-time reporting model to better meet the needs of its clients
- Reduce time for customizing code and optimizing queries
- Consolidate multiple database instances to simplify administrative tasks, and reduce infrastructure costs
- Decrease periods of unavailability of its business systems

### Solutions

- Migrated Oracle E-Business applications onto Oracle Exadata and aggregated all Oracle database instances into a single instance, providing superior performance and reliability and simplified administration
- Reduced the weekly tape backup from four hours to five minutes, enabling the switch to daily backups on disk and database replication in the cloud
- Provided real-time reporting for critical key performance indicators such as sales performance, financial KPIs, HR KPIs, account performance and project performance tracking.
- Improved system reliability, enhancing productivity of the business users and enabling them to provide better support to their IT services customers
- Reduced the number of servers required and simplified software licensing, resulting in meaningful cost savings
- Improved accuracy of measuring profitability for each cost center and practice area
- Reduced dependence on IT staff for reporting, enabling them to focus on more value-added activities

**Oracle Customer:****Targetbase**

An Omnicom Group Inc. Company  
Irving, Texas  
www.targetbase.com

**Industry:**

Professional Services

**Oracle Products & Services:**

- Oracle Exadata Database Machine
- Oracle Data Guard

## 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

**Oracle Customer:****TIMWE**

Lisbon, Portugal  
www.timwe.com

**Industry:**

Communications

**Annual Revenue:**

US\$100 to US\$500 Million

**Employees:**

300

**Oracle Products & Services:**

- Oracle Exadata Database Machine

“The highly competitive communications industry in which we operate demands a robust, flexible, and scalable IT infrastructure with the ability to ensure around-the-clock availability and support real-time analysis of thousands of daily transactions. Oracle Exadata Database Machine makes this possible. Support from the Oracle Portugal team has also been critical to our success.”  
**Paulo Salgado**, CTO, TIMWE

## TIMWE Ensures Competitive Edge with Real-Time Analysis of Marketing Campaigns

TIMWE is a leading mobile monetization solutions company in the mobile marketing, entertainment, and financial industries. Providing services to mobile carriers, media groups, marketing, and advertising agencies, public agencies, name-brand companies, and consumers worldwide, TIMWE operates in more than 75 countries, with offices on four continents. Through its strategic partnerships with over 280 mobile carriers, TIMWE reaches up to 3 billion mobile phone users worldwide and processes more than 20 million SMS messages each day.

**Challenges**

- Process thousands of digital transactions per day in real time
- Analyze data, obtain backup information for real-time decision-making, and reduce report delivery time, obtaining fast, simple and rigorous analysis of the life cycle and value of each client
- Connect more than 280 mobile communications carriers to more than 3 billion mobile phone users throughout the world
- Establish an IT infrastructure capable of supporting the company’s around-the-clock operations to maximize future growth potential

**Solutions**

- Used Oracle Database and Oracle Exadata Database Machine to create an IT infrastructure that enables real-time delivery of customer reports, bringing TIMWE great savings per year
- Created nearly 20 new reporting formats, enabling internal business analysts and external partners to better understand monthly trends
- Ensured real-time reporting, allowing additional margins per year in several areas
- Increased the speed of query responses by a factor of 40, reduced analyses from two days to 30 minutes, and cut the time needed for evaluation processes from one day to 10 minutes
- Ensured simple, fast, and efficient analysis of the life cycle and business value of each customer, adding value to the business and strengthening competitive position
- Increased efficiency of TIMWE’s 150 internal users and more than 60 external partners

**Oracle Customer:****TUI Nederland N.V.**

Rijswijk Zh, Zuid-Holland,  
The Netherlands  
www.tui.nl

**Industry:**

Travel and Transportation

**Annual Revenue:**

US\$1.3 billion

**Employees:**

2,200

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## 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.

**Oracle Customer:****Turkcell**

www.turkcell.com.tr/en

**Industry:**

Communications

**Oracle Products & Services:**

- Oracle Exadata Database Machine

## 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

<sup>1</sup>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.<sup>1</sup> 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.

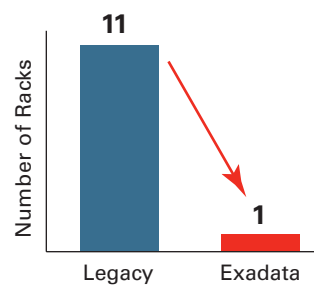
### Consolidated Infrastructure Speeds Deployment

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.<sup>2</sup> 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.<sup>3</sup>

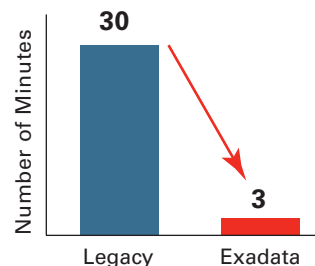
“End users can easily get the results they need when they arrive at work. There’s no waiting for hours anymore,” said Yılmaz, adding that business managers and analysts can now focus on productive activities such as generating new business. “This gives us a real advantage because Turkcell is in a highly 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.

<sup>2</sup> 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.

<sup>3</sup> 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.

**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.

<sup>2</sup> 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.

<sup>3</sup> 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.

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.

### 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 4: 3x GB Per Second Performance Improvement

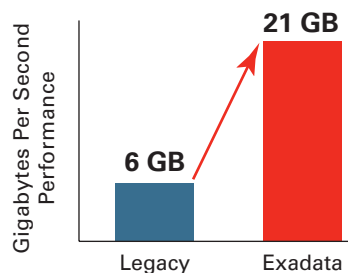


Figure 5: 6x Faster Data Backups

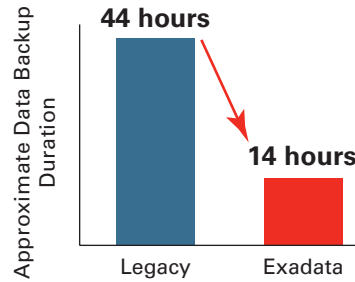
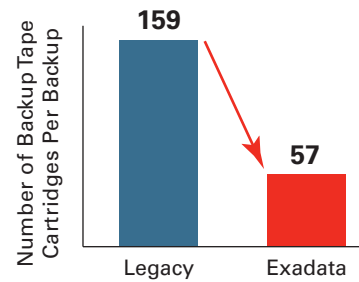


Figure 5: 6x Faster Data Backups



**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.

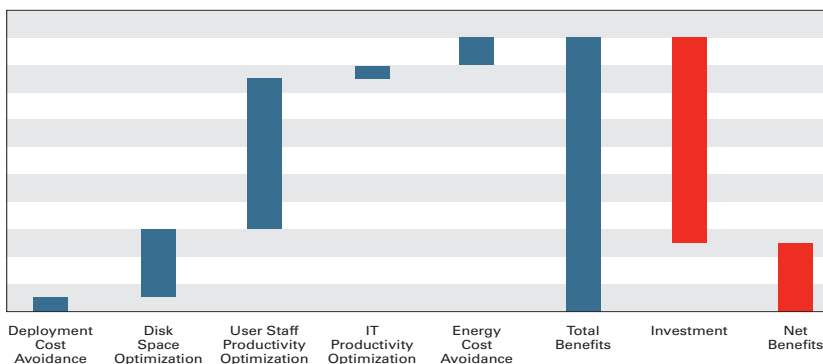
Table 1: Summary of Floor Space and Energy Savings

	Old System (11 rack)	Duplication of Legacy System (20 rack)	Current Exadata Environment
Floor Space (m <sup>2</sup> )	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 Customer:****Yamazaki Baking Co., Ltd**

Tokyo, Japan

www.yamazakipan.co.jp

**Industry:**

Retail

**Annual Revenue:**

US\$7.43 billion

**Employees:**

16,060

**Oracle Products & Services:**

- Oracle Exadata Database Machine

**Oracle Partner:****Sumisho Computer Systems****Corporation**

www.scs.co.jp

## 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-to-day 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.”

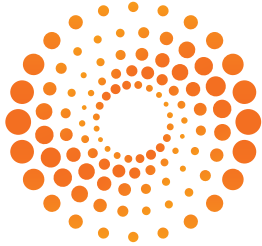
### Implementation Process

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.*



# Exadata



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**Hardware and Software, Engineered to Work Together**

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