

# Fast-growing Mobile Telecom Leverages Oracle Exadata to Accelerate Customer Insights and Control Costs; Achieves Payback in One Year



## About Robi Axiata Limited

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

**Founded:** 1997, as Telekom Malaysia International (Bangladesh); 2010, as Robi Axiata Limited

**Headquarters:** [Dhaka], Bangladesh

## KEY BENEFITS

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

## EXECUTIVE SUMMARY

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

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

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

**“We have witnessed excellent results with Oracle Exadata Database Machine. It has helped us to simplify our IT infrastructure and reduce operation cost. The Oracle Exadata Base Machine has enabled the mobile operator to increase data mining and analytical efficiency to provide better services to Robi customers.”**

AK Monzur Morshed, Chief Technical Officer of Robi

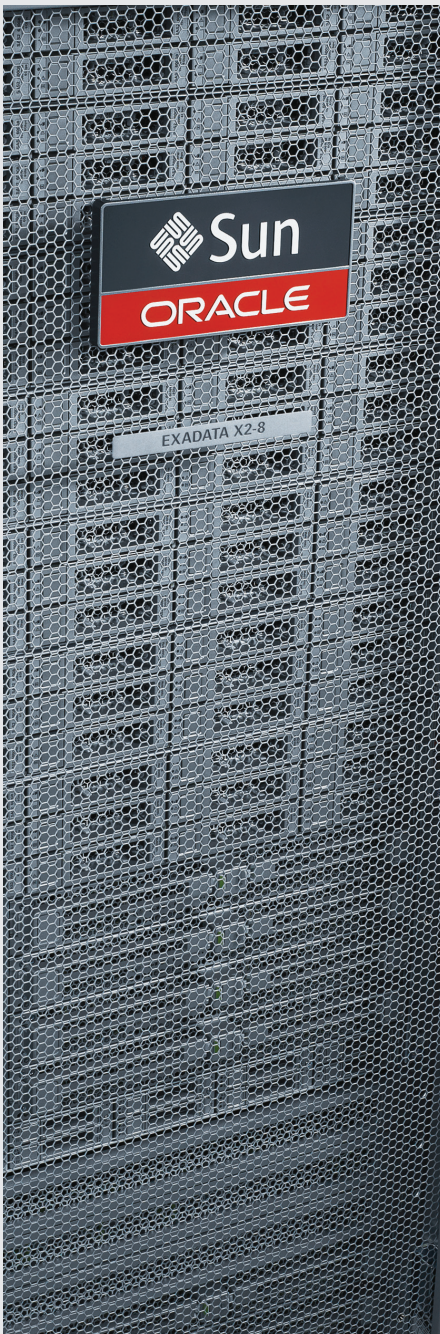
<sup>1</sup>Robi’s legacy data warehouse infrastructure included three low-end HP servers, Oracle 9i Database, in-house ETL tools, Business Objects for OLAP, and other in-house applications.

**“We are constantly on the lookout to give our customer best value for money propositions. To do so we are continuously improving our capabilities to serve our customer better. Sharpening our analytical capabilities obviously play a big role in that.”**

Michael Kuehner, Managing Director and CEO, Robi

#### ORACLE PRODUCTS

- Oracle Exadata Database Machine X2-2
- Oracle Enterprise Manager
- Oracle Data Mining



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

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

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

#### BACKGROUND

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

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

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



**“The migration was remarkably easy. Going with Oracle saved us time in not having to do extensive rewiring of applications into a different environment.”**

Rana Shohel, Vice President, Robi



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

## THE ORACLE EXADATA SOLUTION

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

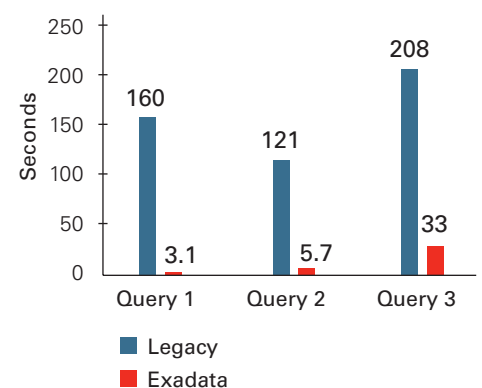
Robi installed an Exadata Database Machine X2-2 Half Rack in May, 2010, consolidating its data warehouse onto one integrated platform. Robi also deployed Oracle Data Mining on its Exadata platform to improve marketing campaigns and gain deeper insights into its customer base. Robi manages the entire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

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

## OPERATIONAL AND STRATEGIC BENEFITS

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

**Figure 1: 5–10X Faster Reports**



## HOW EXADATA MAXIMIZES PERFORMANCE

- Exadata Smart Scan.** The smart storage software in Exadata offloads data-intensive query processing from Oracle Database 11g servers to Exadata's storage layer for parallel data processing. Because there's less data moving through the higher-bandwidth connections, performance improves significantly as well as concurrency for simple and complex data warehousing queries.
- Exadata Smart Flash Cache.** With more than 5 terabytes of flash memory per full rack, Oracle Exadata intelligently caches "hot" data and assigns the rest to disk storage, giving organizations the speed of flash with the cost-effectiveness of disk storage. Exadata Smart Flash Cache can process up to 1.5 million random I/O operations per second and scan up to 50 GB of data per second to deliver ultra-high performance for OLTP applications.

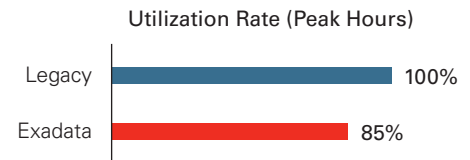
## Significantly Higher System Performance

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

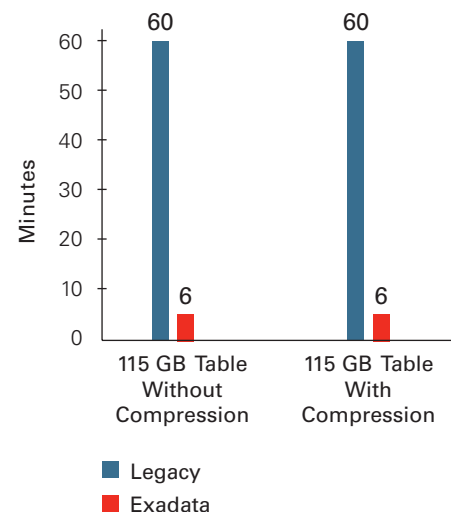
The move to Exadata also enabled Robi to avoid reporting delays that it was experiencing when system utilization approached 100% during peak hours. Today, Robi's utilization rates are running at about 85%, affording the company enough headroom to maintain superior performance.

Robi also saw an immediate and substantial drop in data warehouse loading times—from one hour on the legacy system to six minutes on Oracle Exadata, as shown in Figure 3.

**Figure 2: 15% Reduction in Utilization Rate**



**Figure 3: Data Loading Time by Minutes**





## US\$1.3M Productivity Savings for Business Users

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

### End-User Deliverables Supported by Exadata

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Business Analytics</li> <li>• Decision Support Analytics</li> <li>• Strategic and Business Decision Support Analytics</li> <li>• Campaign Management</li> <li>• CRM Analytics (Customer Satisfaction, Complaints, Customer Care Service)</li> </ul> | <ul style="list-style-type: none"> <li>• Data for Strategic Analysis</li> <li>• Financial Reporting</li> <li>• Revenue-Stream Data</li> <li>• Analytics for Technical and Operational Support</li> <li>• Different Statistics regarding Technical Systems</li> </ul> |
|--|--|

## Deployment Cost Savings

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

**Figure 4: Streamlined Exadata Deployment Yields Savings**

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

## Lower System Ownership Costs

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

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

**Figure 5: Handling More Data with Lower Utilization**

eBIS at a Glance	
Old	Current (now supported by Exadata)
<ul style="list-style-type: none"> <li>• ~100m CDRs/day</li> <li>• 7.5m customers</li> <li>• 20 data sources</li> <li>• 15 BO licenses</li> <li>• 5 TB of storage</li> <li>• 100% system utilization (peak hours) causing huge delays in reports generation</li> <li>• 10–12 marketing campaigns per quarter</li> <li>• In-house simple data extraction and data mining tools</li> <li>• Limited analysis and data retention</li> </ul>	<ul style="list-style-type: none"> <li>• 300m+ CDRs/day</li> <li>• 15m+ customers</li> <li>• 30+ data sources</li> <li>• 50 BO licenses</li> <li>• 40 TB of storage</li> <li>• 500 marketing campaigns per quarter</li> <li>• Comprehensive analysis based on SIM, time and location</li> <li>• 40 TB of storage</li> <li>• Longer data retention</li> </ul>

## US\$200K Storage Cost Avoidance

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

## ABOUT THIS CASE STUDY

Research and analysis for this study was conducted by Mainstay Partners, an independent consulting firm, drawing from interviews with Axiata employees, review of planning documents and searches of industry literature. ROI calculations use industry-standard assumptions regarding the time value of money.

Mainstay Partners is the leading provider of independent value assessment and IT strategy services. Our clients include Oracle, SAP, Cisco, Lexmark, Microsoft, Motorola, and HP. For more information, please visit [www.mainstaypartners.net](http://www.mainstaypartners.net). Information contained in this case study has been obtained from sources considered reliable but is not warranted by Mainstay Partners.



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## Improved Customer Insights

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

## BENEFITS SUMMARY

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

**Figure 6: Benefits by Category — Three-Year View**

