

### BANK OF INDIA

Star House  
C-5, 'G' Block, Bandra-Kurla Complex  
Bandra (East)  
Mumbai – 400 051 India

**Telephone:** +91 666 844 44

**Fax:** +91 666 848 90

**www.bankofindia.com**

**BSE:** BOI

### Chairman and Managing Director

Alok K. Misra

### Chief Information Officer

PA Kalyanasundar

### 2009 Gross Income:

Rs. 19399 Crores (\$ 4B)

### 2009 Net Profit:

Rs. 3007 Crores (\$ 622M)

**Employees:** 40,155

### ROI Study Highlights

- 234% ROI over five years
- 209% IRR over five years
- Rs. 99 Crores Initial Investment (USD\$ 23M)
- Payback within 2 years
- Rs. 770 Crores Net Savings over five years (USD\$ 182M)

### Business Benefits

- **Increased business**—doubled revenue from Rs. 8000 Crores to Rs.15000 Crores (\$1.8B--\$3.5B)
- **Unified view of the customer**—anywhere, anytime banking is now possible with information from all channels tied together
- **Faster time to market**—can analyse customer needs and develop and deploy new products
- **Better risk management**—with greater information available now better able to analyse credit risk

### Study Scope

- Core Banking Solution (Infosys Finacle)
- Data Center: Multi-channel integration and consolidation
- Business Continuity: Disaster Recovery and Data Protection
- Data Warehouse: information aggregation and analysis

## The Bank of India partners with HP to improve customer experience and deliver anywhere, anytime banking—realises a 234% ROI

### Executive Summary

The Bank of India has a long heritage of prudence and caution as one of the five largest banks in India. It was founded in 1906 and continued as a privately owned bank until 1969 when it was nationalised. Beginning with one office in Mumbai, and 50 employees, the Bank of India was the first Indian Bank to open a branch outside the country, starting with London in 1946. From this humble beginning, the bank has blossomed into a global institution with over 3,000 domestic branches and 28 offices in 15 countries which account for more than 20% of the Bank's total business.

The Bank of India has always been in the forefront of innovation whilst maintaining traditional values and ethics in service and trust. It was among the first nationalised banks to establish a fully computerised branch and ATM facility at its Mahalaxmi branch in Mumbai back in 1989. It was also a founding member of SWIFT<sup>1</sup>, to foster India's participation in the international financial community, and a pioneer in the introduction of the Health Code System in 1982 for evaluating and rating credit risk.

When India opened its financial markets to outside competitors in 1991, the Bank of India focused on finetuning its internal systems and introducing technology. In 2002, when the government started focusing on technology as a platform and enabler, the Bank of India realised it needed a game-changing strategy and technology infrastructure upgrade—especially to win and retain younger customers who were willing to pay for anywhere, anytime banking capabilities. The Bank of India decided to leapfrog the competition with a next-generation core banking solution, tied together with a new centralised data center and information management warehouse. The Bank of India believed this comprehensive solution would provide its growing branch network with the multi-channel, intra-branch connectivity backed by the integrated, consolidated view of customers it required for more effective up-selling, cross-selling and customer service. Following a long and methodical planning process, the Bank of India issued a detailed Request for Proposal (RFP). After careful evaluation of more than 20 proposals from major IT solutions providers, the Bank of India selected HP as its business transformation partner. Bank of India's three pronged strategy required HP to play multiple roles—hardware and software supplier, consulting and implementation partner and finally business process outsourcer (BPO), with HP chosen to run the bank's data center and help desk.

HP was selected for the strength and quality of its RFP response along with the low investment and total operating costs. HP was also able to distinguish itself with its deep banking expertise, financial strength and stability, recognised leadership in technology and partnerships with industry leaders like Oracle, Cisco and Infosys. HP provided a solid team with demonstrated experience in integrating and managing large-scale projects, a truly collaborative approach and a single point of accountability for the whole project.

Today, the Bank of India has a flexible and scalable architecture designed to meet the needs of changing market dynamics and differentiate the Bank of India from competition, while enabling it to aggressively compete with new private sector banks and providing state-of-the-art capabilities, channels and products.

***With HP's help, the Bank of India is realising phenomenal success—234% ROI over five years. Combining core banking, business continuity and information management, the Bank of India has doubled its revenue, and tripled its profits with 12% fewer employees, all made possible by efficiencies from the HP partnership where IT is now driving the bank's strategy.***



## Measuring success



**“ Bank of India needed to grow and our previous infrastructure would not scale to meet our needs. Before core banking, there was no central, integrated system that could provide visibility into every customer’s relationship with the bank”**

— PA Kalyanasundar,  
CIO,  
Bank of India

### Challenges

**Facing new market entrants, and customers focused on convenience and service, Bank of India partnered with HP to overcome:**

- Legacy, branch-based banking application running on a stand-alone basis
- No ability to easily aggregate or analyse information in a timely way
- Limited integration among channels, branches, or data
- Labour intensive manual processing—cumbersome, costly, slow and error-prone
- No business continuity—all branches ran as islands
- No ability to consolidate operations or achieve process efficiencies—each branch functioned like a mini-bank with all operations taking place at the branch

### **Bank of India Business Challenge—Provide the convenience and flexibility of anywhere, anytime banking**

In 1991, as India changed its laws and the government opened up the financial services markets to multi-national, private sector entrants. With new competition and services from global financial service providers, the Bank of India had to find a new strategy to compete and to prevent customer defection. The Bank of India turned to technology and introduced computerisation at the branch level and networked the important centers.

The Bank of India, like most Indian banks, employed a branch-centric model which was limiting for both customer and bank alike. All customer relationships and processing were managed at the branch, with summary financial reporting taking place at the Zone office and Bank Headquarters. For over a hundred years this model succeeded with very little churn of accounts because of the strong relationships built between branch managers and customers in the neighbourhood. In 2002, the Bank of India decided to replace its legacy Cibex system. This PC-based, branch-based solution ran on a stand-alone basis in a collection-disbursement model. This system mostly forced customers to transact only at their originating branch because there was no integration of data or systems. While the major centers were networked to facilitate transactions between branches and customer interactions, the technology limitations greatly hampered the scalability and effectiveness.

In the new market landscape of immediacy and convenience that transcends physical boundaries, the Bank of India recognised the need to leverage technology as the answer to transforming itself from a branch-centric to a customer-centric model. As India’s one billion citizens have quickly embraced new conveniences, their expectations have increased to keep pace with the new velocity of business. Whereas customers used to wait seven days for a check to clear, they now expect funds to be available within a day or two. As technology has become pervasive—270 million mobile phone subscribers, over 25,000 ATMs and more than 40 million Internet users in India—customers are demanding flexibility, ease and immediate access to information and more importantly their money. This technology revolution dictates the need for new multi-channel solutions available in a 24x7 marketplace that transcends the physical boundaries of Bank of India’s history.

In developing its go forward strategy, the Bank of India required its business transformation partner to design, build and even run certain components of the solution. The Bank of India partnered with HP to tackle an enormous feat:

- A new core banking system integrating and automating transactions among all of its branches and channels.
- A next-generation data center with the highest levels of performance, security, business continuity and disaster recovery.
- A sophisticated information management solution capable of presenting a single, holistic view of the customer and their relationship with the bank in near real-time. It should facilitate data capture, analysis and reporting capabilities to provide greater visibility and control while enabling better, faster decision-making. It should also aid the introduction of new products and services to improve overall business performance and customer service.

The key deciding factors for the Bank of India included a detailed product walk-through with functional and technical experts from HP and Infosys on how the Finacle core banking solution could meet the Bank’s overall needs, including particular concerns about compliance. Also important to the Bank of India was HP’s experience, financial stability, and recognised leadership in technology. Finally, HP’s reputation as a collaborative partner with deep banking expertise. HP presented a solid team with demonstrated experience in integrating and managing large scale projects, and most importantly to the Bank of India was HP’s ability to provide a single point of accountability for the whole transformation project.

These three pillars and their contributions are subsequently discussed in this study.

## Measuring success



**“ 5 years ago, before Core-banking, branches were like islands – everything took place in the local branch ”**

— PA Kalyanasundar,  
CIO,  
Bank of India

### Selection Criteria

**HP was selected for its ability to provide:**

- Technical and functional expertise with proven experience in managing large scale projects
- Integrated solution—bringing together technology partners (e.g., Infosys, Cisco, Oracle)
- Financial stability to ensure timely completion and availability of resources
- Collaboration partner with deep banking expertise and a solid team able to align IT and business strategies
- Accountability—HP was responsible for all aspects of project, from data center setup to branch roll-out

### Core Banking—Customer-centric solutions for a changing market

The transition to a single Finacle core banking system in all of the Bank’s branches (initially 750 branches, now extending to all its 3,000+) across India, in cities and rural towns, was a major undertaking. This task required local implementation of and training on the new Finacle core banking solution from Infosys, but also entirely new computers and communications links, including a new Voice over Internet Protocol (VoIP) solution that would further reduce costs.

This new approach increased management visibility along with consolidating bank operations and processing for greater efficiencies as whole. New centralised activities (e.g., clearing and settlement, interest calculations and reconciliation) reduced the burden on the branches with all systems now tied together.

HP and the Bank of India teams selected 10 branches, in Mumbai, Chennai and Bangalore, for the initial Finacle core banking pilot phase. The teams worked well together, quickly diagnosing technical challenges (e.g., unavailable telecom infrastructure), and successfully resolving them using creative solutions like VSAT<sup>2</sup> for class “C” cities or rural branches where telecom infrastructure is not available. Soon the team developed the capability to roll out up to 30-35 branches every week, usually with the help of local partners, all with HP as the single point for accountability.

The roll-out, initially scoped at 750 branches, was completed flawlessly 12 months ahead of schedule. The Bank of India immediately saw the benefits of automating all its branches to achieve complete visibility with a single source of the facts. They expanded the agreement with HP to roll the solution out to all 3,000+ branches.



### Core Banking Business Benefits

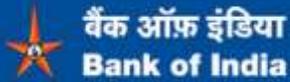
With the Finacle core banking solution (CBS), the Bank of India has transformed the customer experience—no longer are customers constrained by branch boundaries. They now have the choice and convenience of interacting in their preferred manner —ATM, Internet, or Branch—with real-time consistency, accuracy and security. The Bank of India also faced challenges in serving its different customers—large multi-nationals, small medium enterprises (SMEs), individuals, and high net worth accounts—with each customer segment requiring differentiation in both services and products. With core banking, the Bank of India can now easily overcome these challenges, whether it involves dividing branches overnight (one for large multi-nationals and one for SMEs) or distinguishing its top customers (diamond customers) by recognizing their overall relationship with the Bank.

Benefits of the CBS solution are translating into the Bank of India’s ability to:

- **Better Leverage Staff**—with CBS, it has been able to leverage automation and centralised processes to achieve a 30% efficiency gain at the branches, helping to redeploy staff in newer branches and also offset the issue of a shrinking workforce. Labour intensive tasks like reconciliation are now handled automatically by CBS. Additional benefits are realised from the Bank’s ability to now centralise operations and processing which was not possible given the old branch-centric model where data was constrained to the physical boundaries of the branch.

<sup>2</sup> Very Small Aperture Terminal (VSAT), is a two-way satellite ground station with a dish antenna that is smaller than 3 meters with data rates typically range from narrowband up to 4 Mbit/s

## Measuring success



**“ This was the first major project of its kind in India; the whole banking industry was talking about the Bank of India/HP partnership and its success ”**

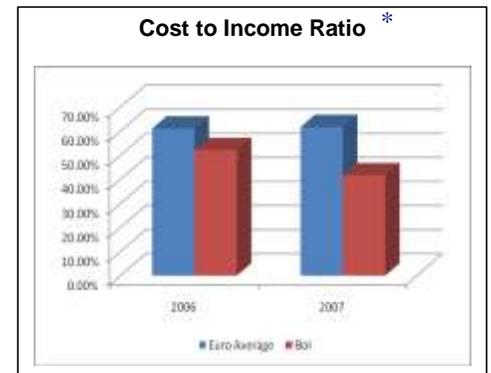
— PA Kalyanasundar,  
CIO,  
Bank of India

### Strategic Benefits

**With core banking, the Bank of India is now able to achieve:**

- Faster time to market for new products and services. With core banking, the Bank can now quickly and uniformly roll out products across its entire network
- Unified view of the customer—better able to comply with Know Your Customer (KYC) regulations
- Efficient allocation of resources—leverage talent previously trapped in branches with centralised operations
- Better Treasury managing with increased visibility
- Increased products—previously only offered banking, now insurance, mutual funds and gold sales

- **Optimise resources**—with the adoption of the Finacle core banking solution combined with the new data center, the Bank of India is now able to centralise processes—like cheque posting which results in operational efficiency and productivity gains. Efficient allocation of resources is leading to a substantial decrease in cost to income ratio\*. Additionally, the Bank of India is able to reduce the branch record-keeping burden and create new roles like Relationship Manager. All of these improvements contribute to the Bank of India’s transformation from a culture focused on record keeping to one that is customer-centric—managing and cultivating customer relationships—now made possible by the strength of the core banking software and its process automation, reporting and workflow.



- **Increase business transactions**—with customers, the Bank of India has doubled revenue from Rs.8000 Crores (\$1.8B) to Rs.15000 Crores (\$ 3.5B)—while reducing time at branches for customers with anywhere (multi-channel), anytime banking.
- **Expand branch network**—Bank of India has been able to increase its branch network from approximately 2,400 branches to over 3,000 and it is still growing. The efficiency gains—centralised process automation and information sharing and visibility—have allowed the Bank to grow its branch network without having to add additional headcount. This has come about because the branches are now focused on customer service vs. the manually intensive record keeping of its previous model. The Bank of India has been able to achieve this despite a staff reduction of about 12% due to retirement and attrition.
- **Improved time to market**—Bank of India has gone from a lead time of 2-3 months for new product development to now less than 2-3 weeks with consistency across all its outlets.
- **Reduced branch work**—through automation of core banking processes, branch operations work and record keeping activities have been reduced by 30%-40%. This new model allows the branches to focus more on customer service, lending, cash management and differentiating customers with the addition of Relationship Managers and Diamond Customer designation, the Bank of India’s recognition program for its best customers.
- **Consolidate accounts**—Since HP’s implementation of the Finacle core banking solution, the Bank of India is now able to forge relationships with customers not accounts. The previous solution was account and branch specific with each account treated as a unique relationship. This caused additional costs and inefficiencies for both bank and customers. This also resulted in customers spreading their accounts across multiple banks when they needed to work in multiple markets. Now the Bank of India is able to recognise customers for their total relationship with the across multiple accounts.



## Measuring success



**“...with the new centralized core banking system in place, security is absolutely foolproof”**

— Vishwanath Padave,  
Delivery Lead—HP,  
Bank of India Project

### Solution Components\*

In delivering core banking, the Bank of India leveraged the following components:

#### Software

- Infosys Finacle core banking (including eChannels, eCorporate and Loan Origination)
- Newgen Document Imaging and Workflow (OmniDocs Desktop, Capture, and Server software)
- Oracle HR and Financial Service Applications (OFSA)

#### Hardware\*

- HP Integrity Superdome Servers
- HP Desktop PCs and ProLiant and Blade Servers
- HP Scanners and Printers

#### Services

- Application-led business process re-engineering
- Multi-vendor integration
- Infosys Finacle Implementation and roll-out
- Application Training
- Desktop refresh

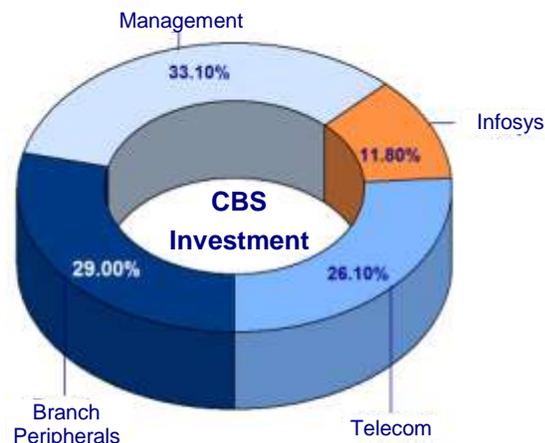
### Bank of India's core banking solution investment—*Transforming Branch Banking*

In 2002, Bank of India decided to change its Cibex legacy solution (a PC-based, branch-based solution written in Cobol using bTrieve files), where most of the branches ran on a stand-alone basis in a collection-disbursement model. The Cibex solution was a LAN Based, branch-only system forcing customers to transact only at their originating branch as there was no centralised, integration of data or systems that could provide visibility. Bank of India decided to bring the bank into the new dynamic, competitive banking environment by adopting a core banking solution (CBS) and partnering with HP to leverage technology to achieve its strategic goals.

Thoughtware Worldwide's analysis shows the composition of the core banking investment and how it enabled the Bank of India to transform not only the branch composition, but the overall organization with scale, efficiency and a fundamental change in focus from record keeping to customer service and relationship management.

### Quantifying the Total Core Banking Solution (CBS) Investment (10 yrs)

- **Branch Peripherals**—29.0% of the total investment encompasses the new equipment in the 3,000+ branches including new desktops, scanners, printers and communications including refresh of branch PC and peripherals after 5 years
- **Infosys**—This 11.8% covers the Infosys Licenses and Maintenance for the Finacle core banking solution
- **Network and Telecom**—26.1% covers the network and telecom costs to support systems including ATM, POS, Call Center, Internet and NAP links to core banking systems at the Data Center and Disaster Recovery site
- **Management**—33.1% covering support, maintenance and management of the core banking roll-out and operation associated with new centralized processing groups that originally resided in the branches handling activities like check clearing, digitization



^ This study was conducted at the half-way mark of branch roll-out, we anticipate full results for 3,000+ branches will show a higher ROI

**“Core banking has brought a lot of convenience and services to the customer—they love it!”**

— AA Badshah,  
General Manager,  
Head Office, Treasury,  
Bank of India

## Benefits Achieved from Core Banking Investment

The Bank of India’s new focus on customer service is helping the bank increase its customer base and services offered. With the addition of Relationship Managers and detailed information that is now available, the Bank of India is succeeding in retaining and growing its all important diamond customers, the high net worth customers who have grown to demand more from their banking partner. The core banking solution also enables the Bank of India to quickly roll-out new offerings like “gold sales” and “depository participants” or “DPs” to meet the demands of customers while generating additional revenue for the bank.

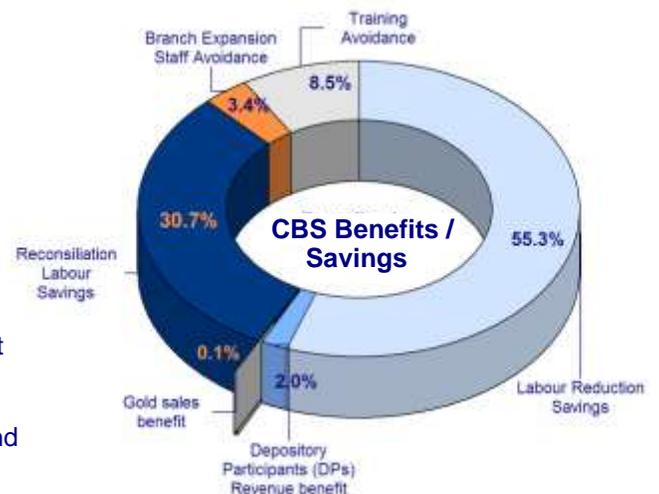
With Finacle core banking, the Bank of India has been able to overcome staffing and training challenges it faced. Automating what used to be manual, labour intensive tasks (like reconciliation) combined with centralising core processing operations by region (e.g., settlement and clearing) has allowed the Bank of India to more effectively and efficiently leverage its talent base.

The Bank of India is also realising benefits from automating monthly reporting. What used to be a cumbersome, rote and error prone effort is now automatic and available to bank management on request. Head Office as well as Branch and Zone management are all operating from the same facts, in near real-time, which is fostering greater focus on financial performance and proactive management which, in turn, benefits both bank and customer alike.

Thoughtware Worldwide’s analysis shows the benefits realised by employing core banking to transform from a branch-centric model to customer-centric model, where the Bank of India customers are now customers of the bank not the local branch.

- **Labour Savings / Better Leverage Staff**

The Bank of India has achieved a 12% overall reduction in workforce, contributing 55.3% of the overall core banking benefits. By changing the staffing model, the Bank can now better utilise its available resources and skilled banking experts that were previously trapped in the branches. Resources are now easily identified and leveraged in the service centres and beyond as it moves to a customer-centric model, where the branch is no longer burdened with record keeping, transaction processing and settlement and clearing.



- **Branch Staff Cost Avoidance and Training Avoidance**

With a growing branch network experiencing 40% growth, the Bank of India would have faced adding and training significant headcount to staff these new locations were it not for CBS. The bank’s benefits include a 3% gain in efficiency that let it avoid hiring additional staff (3.4%) for the new branches along with 8.5% savings realised from training avoidance for new recruits. Before Finacle, it would take months to train new staff on banking processes—now processes are built-into the Finacle software accelerating training and productivity.

## Measuring success



### FINANCIAL MEASUREMENT EXPLAINED

#### ROI (Return on Investment)

- Quantifies how much profit or cost savings will be achieved as a result of the investment
- Discount any future costs/benefits by the Weighted Average Cost of Capital (WACC)
- WACC is an average cost of capital using a combination of equity and debt borrowing
- Demonstrates the overall value of an investment; e.g., is breakeven achieved (100%) or is positive value achieved (101%+; investment plus value)

#### WACC (Weighted Average Cost of Capital)

- WACC =  $E/V \times Re + D/V \times Rd \times (1-Tc)$
- Re = Cost of Equity
  - Rd = Cost of Debt
  - E = The market value of the firm's equity
  - D = The market value of the firm's debt
  - V = E + D
  - E/V = Percentage of financing that is equity
  - D/V = Percentage of financing that is debt
  - Tc = The corporate tax rate

#### IRR (Internal Rate of Return)

- Discounted cash flow measure of valuation and investing. IRR is the true interest yield of an investment
- Net benefits restated as an interest rate
- IRR demonstrates how quickly an investment generates positive net benefits

### CBS ROI Study Highlights

- 222% ROI over five years
- 185% IRR over five years
- ~Rs. 57 Crores Initial Investment (~USD\$ 13.7M)
- Payback within 14 months
- ~Rs. 463 Crores Net Savings over five years (~USD\$ 109M)

#### Gold Revenue

With the core banking solution, the Bank of India can now sell gold to its customers, a fundamental core of Indian society which is given as gifts—birthdays, weddings, Diwali<sup>3</sup>—and is saved as part of its cultural beliefs and customs as one of the most sought after investments. This is now possible using the Finacle Inventory Module to record the sales and values. HP understood the Bank of India's desire to not only stem cash withdrawals for these gold purchases, but moreover to service the needs of its customers by offering gold sales and recording them in their passbooks as a recordable asset. This benefit—just less than 0.1% of the total benefits realised to date from the CBS investment—began in March 2008. The Bank of India expects this to grow significantly as part of its revenues as customer awareness increases and as the offering is rolled out to all of its branches.

#### Depository Participant Revenue

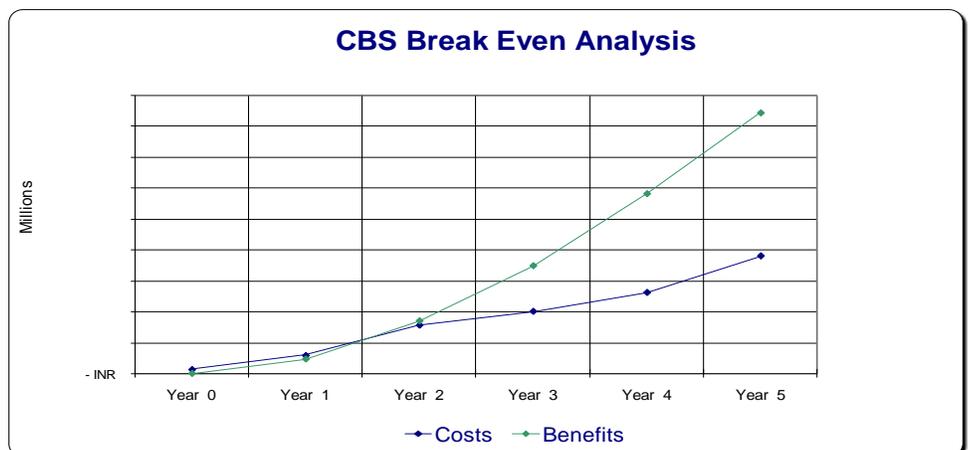
Depository Participants (DPs) are now possible with the Finacle core banking solution. DPs, are like custodial accounts, where assets are held on account and available as another financial asset that can be traded, or used as collateral. With Finacle, the Bank of India has been able to enter this market and increase its revenue—just under 2% of benefits—by offering this solution to its customers. DP's have quickly grown to over one hundred thousand accounts, producing incremental revenue for the Bank of India and will only grow as it is adopted across its entire branch network.

#### Reconciliation Labour Savings

30.7% of savings are realised by organisational changes made possible by core banking. By eliminating the physical constraints of the branch, the bank can now centralise functions in regional centres for greater efficiency and staffing

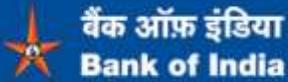
### Summary of the Bank of India's CBS Return on Investment (ROI)

By partnering with HP to implement core banking, the Bank of India has achieved enormous cost savings, new process efficiencies and most importantly the ability to become a customer-centric organization that delivers anywhere, anytime banking to its customers. The Bank of India is now able to focus on developing new products and services and roll them out quickly and consistently across its vast branch network to increase its overall relationship with customers. With core banking, the Bank of India has realised a ROI of 222% over 5 years and a significant internal rate of return (IRR) of over 185%, validating the quality and value of the investment. As illustrated in the chart below, the benefits of the HP solution exceeded costs, with the investment reaching breakeven in 14 months.



<sup>3</sup> Diwali is the Hindu festival of lights, celebrated as a religious holiday throughout India in mid-November

## Measuring success



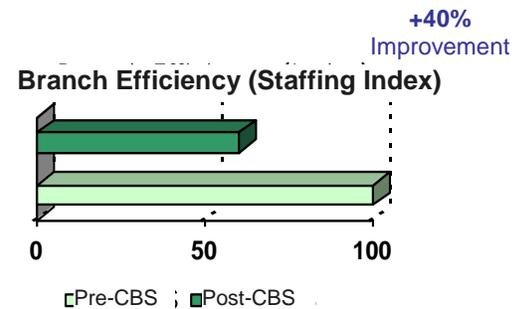
**“With core banking , cash, clearing and other entries (intra-branch) are all gone from the branch”**

— AR Kuppaswamy,  
General Manager,  
Mumbai South Zone,  
Bank of India

### Operational Benefits—Improving the customer experience

#### 40% Branch Efficiency Gain

With CBS, branch workload is reduced by 30-40%, allowing staff to focus more on customer service, lending and selling new products like insurance and gold.



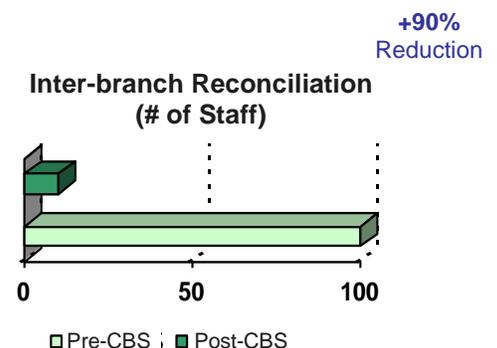
#### 80% Time Reduction in Launching New Products

Using CBS, the Bank of India can develop new products and roll them out across all its branches in a uniform manner in fewer than 3 weeks. Now customers can walk into any branch and get a consistent answer on new products where previously information was rolled out in waves causing challenges for the Bank of India staff and customers alike.

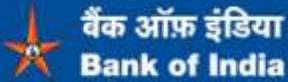


#### 90% Reconciliation Reduction

With increased accuracy and processing happening with the uniform and structured core banking system, the Bank of India has been able to significantly reduce the inter-branch reconciliation effort. As each branch ran as a separate island, the inter-branch clearing, settlement and reconciliation was a huge burden, but is now automated, and focused on exception handling



## Measuring success



**“ Management’s priority was the customer’s confidence and satisfaction, with HP and core banking we are delivering customer delight”**

— Deepak Bhayana,  
Assistant General  
Manager,  
Bank of India

### Strategic Benefits

**With the new Data Center and Disaster Recovery capability, the Bank of India has:**

- Scale, performance and virtualisation to eliminate waste and over investing in hardware for greater utilisation and investment protection
- Centralised, uniform support for greater efficiency and more effective issue-resolution
- Improved quality of service and greater end user productivity with Service Level Agreements, defined escalation processes, and a comprehensive tracking system

### **Business Continuity—Data Center and Disaster Recovery enable anywhere, anytime banking**

The second pillar of the Bank of India’s strategy was to develop a new centralised command and control model by developing an Adaptive Infrastructure or new next-generation data center (DC). This new approach would provide the bank with the connectivity to tie all its branches and channels together so information would be available to both management and operations staff independent of their location—a critical change from the physical constraints of a branch-centric record keeping model previously employed.

The Bank of India’s major goal—to have a unified view of its customers and ability to offer them anywhere, anytime banking—required more than just core banking. It required a new data center with the performance, security and business continuity to support customer-centric banking. This new approach to banking would require a new platform that could provide near real-time information across all channels and branches so that the Bank of India could present one uniform face to the customer regardless of channel.

In creating the data center, HP was able to move quickly as the Bank of India already owned a suitable building in the Mumbai metropolitan area that HP could use to build out the data center. HP was able to setup the entire data center in only 36 days, acting as the project manager and system integrator, building out the entire facility—from coordinating with partners (Infosys, Oracle, Cisco, etc.) to establishing communications links with telecom provider Bharti Airtel.



For business continuity, the Bank of India decided to rely on HP to host its Disaster Recovery (DR) site in HP’s facility in Bangalore. This approach enabled the bank to quickly bring up the DR capability and avoid the resource challenges (capital and labour) associated with additional real estate, security and staff required to run their own recovery site.

The new Adaptive Infrastructure also enables the Bank of India to centralise its IT services management, which historically was co-located with the zones or branches. HP Service Management Software with embedded ITIL® methodology served as the foundation upon which Bank of India could roll out and support applications using new service management best practices. The new centralised IT support group, systems and processes are helping the Bank of India deliver better, more consistent support to all its users, defining and meeting new Service Level Agreements and escalation processes to ensure user satisfaction, quick resolution and, most importantly, solving the root cause. HP now runs the help desk and supports not only the Bank of India’s desktop computing, but also Level 1 and 2 support (80% of inquiries) for Finacle core banking. With an impressive 80% positive customer satisfaction rating achieved since launch, the new help desk is delivering technical, quality solutions in a friendly way that benefits all users.

Some additional innovation that occurred as part of the new data center involves HP’s porting of the Finacle solution to the HP Integrity Blades platform with Intel® Itanium® 2 processors, taking advantage of faster, more powerful and efficient

## Measuring success



**“ The outsourcing model is fantastic— all IT assets are now taken care of by HP and we can concentrate on Banking”**

— AR Kuppuswamy,  
General Manager,  
Mumbai South Zone,  
Bank of India

computing resources. At the onset of the core banking project, Finacle was only available on RISC-based machines. The HP team saw this as an opportunity for innovation. As HP analysed the growth of the project—adding new branches, users and customers equalling 5GB per day—it projected that the Bank of India would soon face performance issues that would trigger additional hardware investments. By porting Finacle to Itanium, HP enabled the Bank of India to grow its infrastructure in a 64-bit, virtualised architecture for greater performance and lower costs. The resulting smaller footprint, lower power consumption, and room-to-grow are especially beneficial in emerging markets like India where energy and floor space are especially precious resources.

### Data Center / Data Recovery Business Benefits

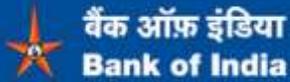
With the completion of its new data center with replication and failover to the HP-hosted DR site, the Bank of India is able to run 24x7 with complete system-wide visibility and access. The new data center integrates all channels (e.g., ATM, Internet, Telephone Banking, Branches), systems (over 16 source system) and data, which provides the Bank of India with numerous benefits:

- Less time required for aggregating, reporting and analysing data
- Reduction of IT staff, and redeployment off them as operational managers in the branches

Additional benefits include:

- **Industry leading software**—By selecting Finacle for its core banking, the bank benefits from someone else investing in and evolving the solution.
- **Centralised support**—By linking all of the Bank of India branches, regions and zones to a centralised data center the bank can now deploy patches and upgrade to new features with immediate effect and consistency that was not possible with its isolated branch systems.
- **Improved quality of service and end user productivity**—Using ITIL<sup>®</sup> methodologies embedded in the HP Software for help desk and service management allows the Bank to support all its users in a more consistent and efficient manner than the previous model where IT staff was co-located with the branches, and where a single problem could require 5-6 people to achieve resolution. With HP Service Desk Software (including Operations Manager, and Network Node Manager), ITIL<sup>®</sup> and the centralised approach to support, the Bank is able to gain system-wide visibility of what is causing issues, and is now able to solve the root problem vs. solving the incident.
- **Reduced telephony costs**—By leveraging the networking communications links required to connect the branches to the NAPs (Network Access Points) and ultimately to the data center and DR site, the Bank of India was able to use VoIP, eliminating the telephony costs associated with fixed lines to its branches.
- **Faster performance**—Batch jobs that used to take three hours on RISC platform run 50% faster on the HP Integrity Blades platform with Intel<sup>®</sup> Itanium<sup>®</sup> 2 processors. Also, backups have been reduced from 6 hours down to 90 minutes allowing the Bank of India to finish processing easily with plenty of cushion to prevent impacting the daily operations.
- **Scale, performance and virtualisation**—The Integrity platform provides considerable scale and performance for the bank’s forecasted rapid growth over time through its architecture, virtualisation, and the ability to add more processors as needed. With the Bank of India adding 5GB of data per day, scale and performance are critical issues for the organization.

## Measuring success



### Solution Components\*

The new data center and disaster recovery capabilities are helping the Bank of India tie everything together:

#### Software

- Infosys Finacle core banking running on Itanium
- HP Data Protector—Enterprise backup
- HP OpenView Software
  - Service Management
  - Help Desk
  - Network Node Manager
- Oracle 10g database

#### Hardware

- HP ProLiant BL Servers (Blade), DL (Rack-optimized) and ML (Tower)
- HP Integrity Blade Servers and BladeSystems c-Class
- HP Integrity Superdome Servers running virtual partitions (DB and DW),
- HP StorageWorks Disk Arrays
- HP StorageWorks Enterprise Virtual Array and XP, MSL/EML/ESL tape libraries, SAN switches
- Cisco (VoIP, Call Manager 7805, Access 2915, Routers 6513, 7513, DMZ 4215)

#### Services

- Build-out Data Center
- Multi-vendor integration
- Port Finacle to Itanium
- Communications Architecture and Implementation
- ITIL<sup>®</sup> methodology implementation

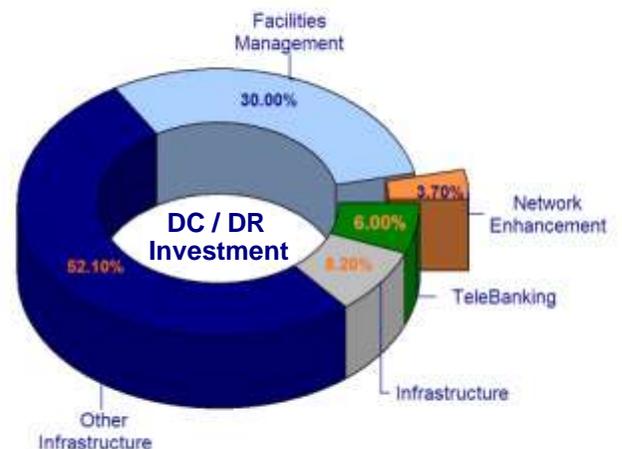
- **Green IT**—Virtualisation and the Integrity architecture are also reducing today's footprint and energy requirements, eliminating the need for one complete rack in the new data center.
- **Affordable growth**—Automation of ITIL<sup>®</sup> best practices using HP software will require only a 5% increase in the HP data center management staff to support a nearly doubled user base as the bank grows its branches from 1,500 to almost 3,000.
- **Greater Availability**—Ability to cutover to DR site within one hour to ensure no outages.

### The Bank of India's Business Continuity Investment—Consistency and Availability

Thoughtware Worldwide's analysis shows that the bank's investment in its new Data Center and Disaster Recovery solution provide greater connectivity and protection for data, while increasing visibility and availability across the enterprise.

#### Quantifying the DC / DR Investment

- **Other Infrastructure**—52.1% of the total costs are associated with building out the new data center including the creation of the new centralised support group and help desk call center
- **Facilities Management**—Includes Help desk, Call center, HP OpenView and the labour associated with the installation and configuration of the help desk environment. It covers support for the Infosys Finacle solution including level 3 and 4 support and for the data center's hardware and infrastructure. Also covered is access control and monitoring software for computers within the data center, plus network operations control (NOC) equipment and workstations and finally emergency lighting, fire detection, suppression and surveillance systems
- **Infrastructure**—8.2% covers the annual support costs for all hardware—servers, storage and communications to run core banking and end user support
- **Network Enhancement**—3.7% Includes the upgrade of network protocols and components to support the new multimedia system and its required bandwidth
- **TeleBanking**—6.0% Includes the Servion Global Solution with the integrated IVR (Interactive Voice Response) functionality



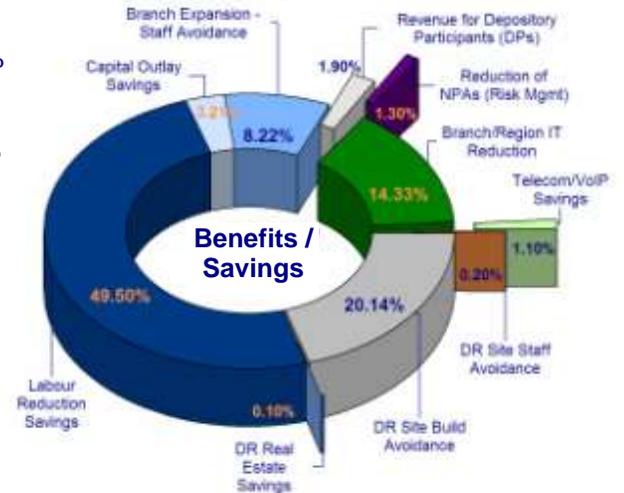
### Benefits Achieved from Data Center and Disaster Recovery

Thoughtware Worldwide's analysis shows that the Bank of India is able to achieve a number of quantifiable economic benefits from tying all its branches and channels together via the new infrastructure.

## Measuring success



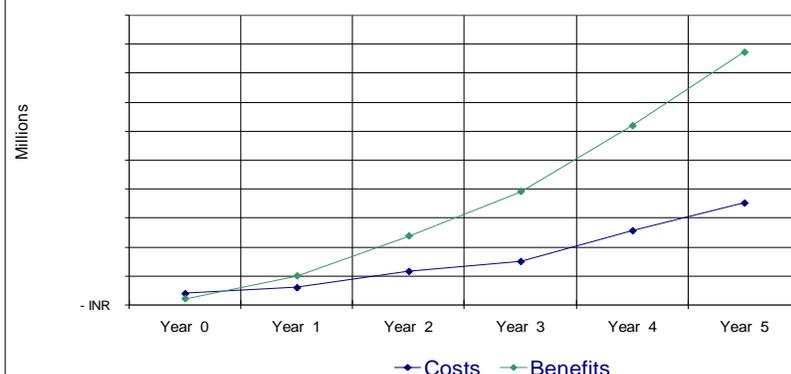
- Better Leverage Staff / Labour Savings—**  
 49.5% of the savings come from branch efficiencies gained by CBS automation (e.g., interest calcs)
- DR Site Avoidance—**0.10% of the benefits are from real estate savings, 0.20% from staff avoidance, and 20.14% from hosting the DR capability vs. building out a Bank of India owned facility
- IT Reduction—**14.33% of DC/DR savings coming from centralising IT; previously resources were stationed in the region or branch
- Telecom Savings—**1.1% of DC/DR savings are coming from new technological advances like VoIP, which are both reducing telecom costs and improving the overall quality of communications—especially important in rural areas where fixed line and internet are not always available
- NPA Reductions—**1.3% is realised from reduction in non performing accounts that has come from increased visibility and credit risk
- DP Revenue—**1.9% of the total benefits are coming from new depository participants (custody like) service offering
- Branch Expansion / Staff Avoidance—**8.22% of benefits come from new centralised processing groups enabled by the increased access and visibility
- Capital Outlay Savings—**interest savings (0.0134%) from avoiding capital outlay associate with DR site build



### Summary of the Bank of India's DC/DR Return on Investment

A key component of the Bank of India's success has been its focus and approach. By quickly assembling the data center—up and running within 6 weeks—the Bank of India and HP were able to focus on rolling out the branches quickly and connecting them to the new data center. With the DC/DR capability, the bank has realised a ROI of 248% over 5 years and a sizable internal rate of return (IRR) of over 122%, validating the value of the investment, reaching breakeven in 3 months.

#### DC Break Even Analysis



#### DC / DR ROI Study Highlights

- 248% ROI over five years
- 122% IRR over five years
- Rs. 29 Crores Initial Investment (\$ 6.8M)
- Payback within 3 months
- Rs. 259 Crores Net Savings over five years (\$ 61.6M)



**Measuring success**



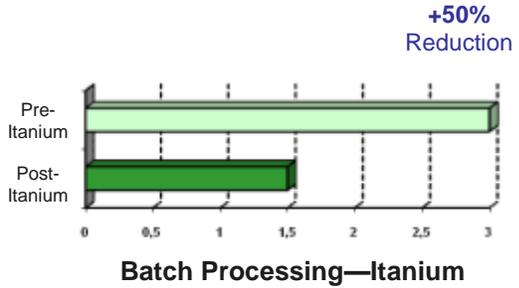
**“ With core banking all tied together, reconciliations are much easier resulting in much improved credit risk for the bank.”**

— AR Kuppaswamy,  
General Manager,  
Mumbai South Zone,  
Bank of India

**Operational Benefits—Improving Reliability and Efficiency**

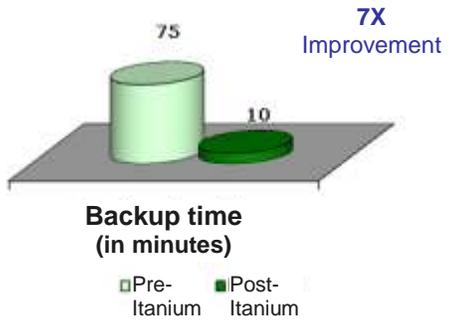
**50% Reduction in Branch Processing Time**

With HP porting Finacle to run on Itanium, the Bank of India has achieved faster processing which has significant implications as the nightly batch processing window shrinks even as transaction volume increases



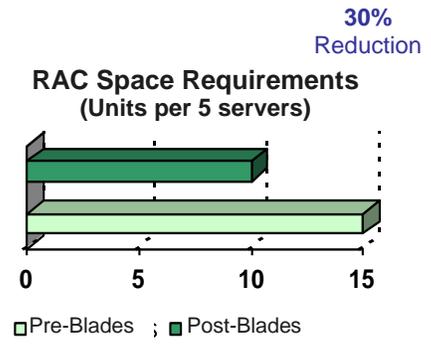
**7X Time Savings for Backup and Recovery**

By centralising backups at the data center, the Bank of India has reduced not only the time associated with protecting their data, but has increased the ability to recover quickly for the entire enterprise. What used to take 60-90 minutes per branch has now been centralised with exponential impact as the data is not only backed up in a consistent and uniform way, but is also simultaneously written to the DR site for recovery and reporting.

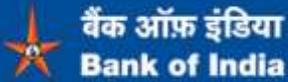


**30% Space Reduction**

By moving to HP Blades (BL860Cs), the Bank of India has been able to reduce the footprint required for of its servers—critical given the explosive growth of both customers and transactions. Moving to blades has produced savings in power, cooling and rack space.



## Measuring success



### Information Management—Reporting, Analysing and Protecting

The Bank of India's goal to achieve a unified view of its customers is made possible with Information Management where it will be able to aggregate and analyse data to better manage its customer relationships. This new platform will allow the Bank to recognise the total relationship with its customers, not just individual accounts. This enables the Bank to drill down into product, channel and customer profitability which will contribute to the development of new products and services to drive growth.



Historically, the Bank's branch-based computing environment constrained its ability to easily aggregate and analyse data. The lack of timely or detailed information in a centralised location relegated decision-making to the branch level, where the data resided. Collaboration across Bank of India's large geographic footprint was limited and the notion of leveraging best practices was all but impossible to implement with any consistency. It typically took one month to assemble a complete view of the Bank's performance with branches transferring data to floppy disks and sending them to the Zone office for further aggregation and eventually onto the Head office.

As in most emerging markets, data aggregation and reporting was performed manually with lots of manual intervention. This tedious and laborious process was slow and fraught with errors with no easy way to audit, validate or analyse. Access to information was limited to branch hours and issuing a request from Zone or Head office to obtain the source data or answers to management's questions was painful for all involved with little value given the time lags in producing the data.

The Bank of India's vision involved a single, integrated platform where data could be easily stored, aggregated, reported and analysed, but also enable the Bank of India to provide centralised data backup, system support and true business continuity.

To address these challenges, the Bank of India devised a strategy to transition from local data storage to a centralised repository. The information management solution utilises Oracle 10g running on HP Superdomes—in active / passive mode so that information is always available. HP Data Protector is used to replicate information at the HP hosted Disaster Recovery site where it can cutover within one hour if need be. The information is also backed up using HP Tape Backup and Storage which can be restored within one hour providing true business continuity.

The new core banking solution currently contains about 3 TB of data, with over 1,100 Tables. It is growing at a rate of about 5 GB per day. The Bank of India is in the consolidation stage of data warehousing and reporting with a future focus on business intelligence planned with the adoption of HP's Neoview based Operational Data Store. The data warehouse is already 800 GB containing summary level data from all the branches and channels. It is anticipated that this will grow exponentially in the next phase of the project once all branches are feeding the warehouse. The Bank of India can then shift its focus to harnessing the value of its rich customer, product and channel data.

#### Strategic Benefits

**Information Management is enabling a change in culture to performance management:**

- Better view of the bank's financial performance
- Better credit risk analysis
- Faster, and more accurate reporting—with access to drill-down details
- Improved data quality with more secure and richer information available
- Unified view of customer to foster potential for improved customer relationship management

## Measuring success



***“ Before core banking and the information warehouse, it would take us literally weeks to produce reports. Now it is done immediately.”***

— S Kannan,  
Assistant  
General Manager,  
Nariman Point Branch,  
Bank of India

### Information Management Business Benefits

To achieve a unified view of its customers, the Bank of India turned to HP for its computing and data warehouse expertise. The vision was to go from a distributed operational system in Cibex using local data storage to a new centralised model where not only core banking data, but vast quantities of data from all of its channels, branches and customers could be stored, reported and analysed. HP designed an architecture that would support information mirroring using HP Integrity Superdomes along with HP Data Protector so that data would always be available. One of the clever strategies HP employed, was to run reporting off the DR site—made possible by HP Data Protector and the system mirroring—to lessen the burden and improve the performance of the production systems in the Bank of India data center.

The Information Management solution is providing the Bank of India with:

- **Better customer service and retention**—For the first time, the Bank of India can elevate its view to a customer level from an account level, linking accounts across branches and channels to form a single view.
- **More effective Treasury management**—Visibility into the cash needs of all its customers on a real-time basis provides the Bank of India with the critical insight and the ability to more effectively manage its capital and available cash.
- **Increased visibility and access**—with the centralised information management solution, data is now available within one hour and is centrally backed up to a full disaster recovery system which is online and can cutover in minutes.
- **Automated reporting and performance measurement**—Today, the Bank of India is able to assemble a consolidated view of its business performance in one day—allowing it to make more informed decisions and better manage and report its results to the financial community.
- **Reduced fraud**—Increased visibility and ability to analyse data across its entire branch and channel network helps reduce fraud.
- **Improved Compliance**—With core banking feeding the information warehouse, the Bank of India is now better able to monitor compliance with Know Your Customer (KYC) and Anti-Money Laundering (AML) rules using voting ID cards, permanent tax ID numbers or government issued ration cards to validate identity. Using Information Management, the Bank of India is now able to group accounts by owner to further ensure compliance with the KYC and AML rules—a challenge for many banks that lack a centralised information repository required to aggregate and synthesise this critical information. The Bank of India can now look beyond individual accounts and analyse activities across all its branches and channels to monitor customer behaviour.

## Measuring success



### Solution Components\*

The new information management solution is helping the Bank of India aggregate, analyse and report insights using the following components:

#### Software

- Oracle Financial Data Manager (OFDM)
- Oracle Discoverer provides reporting capability to administrators
- Oracle Warehouse Builder provides the framework for designing the data-mart

#### Hardware\*

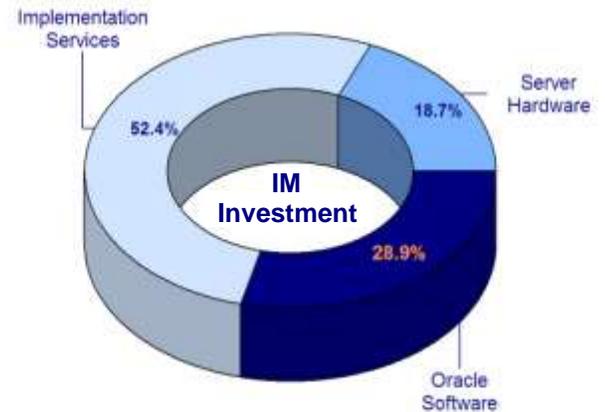
- HP Integrity Superdome Servers running virtual partitions (DB and DW),
- HP StorageWorks Enterprise Virtual Array and XP, MSL/EML/ESL tape libraries, SAN switches

#### Services

- Data warehouse data mart design
- ETL (extraction, transformation and load of data)
- Database optimisation and tuning

### Quantifying the Information Management (IM) Investment

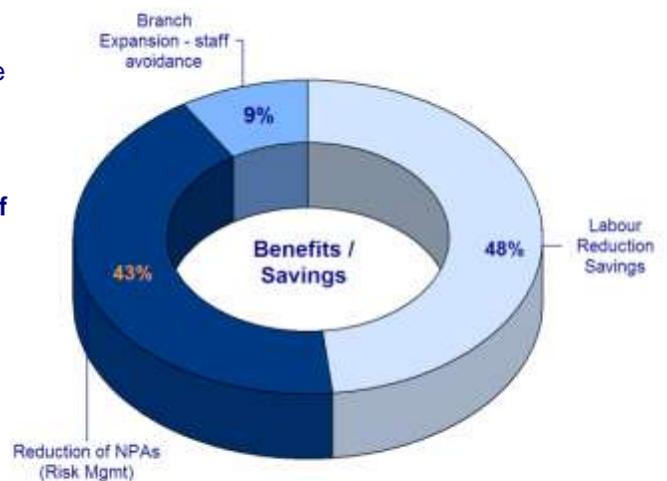
- **Oracle Software**—28.9 %  
Covers the Oracle Data Warehouse components and the data sources relating to its functionality
- **Implementation Services**—52.4%  
Covers both the support and maintenance of the data warehouse / information management components
- **Server Hardware**—18.7%  
Covers the other hardware required to run the Data Warehouse



### Benefits realised from the Information Management (IM) Investment

Thoughtware Worldwide's analysis shows that the Bank of India is now harnessing economic benefits from centralising information from across all its channels, systems and branches. As the Bank moves from core banking roll out to business performance and optimisation, we anticipate enormous benefits will come from laying the information foundation as the Bank of India shifts into advanced analytics and business intelligence.

- **Better Leverage Staff / Labour Reductions Savings**  
48% of the savings come from efficiencies gained through data automation and management
- **Branch Expansion Staff Avoided**—9% based on the natural trajectory of growth, these costs are avoided due to automation
- **Reduction of NPAs (Risk Management)**—43% encompasses the projected reduction in Non Performing Advances (NPAs) due to better risk management practices



## Measuring success



**“ HP is very responsible —they plan well and are a very proactive and supportive partner”**

— Sheela Shenoy,  
Head of Global Support,  
Infosys Finacle

### Operational Benefits—Providing Visibility and Improving Decision Making

#### 9x Improvement in Reporting Delivery

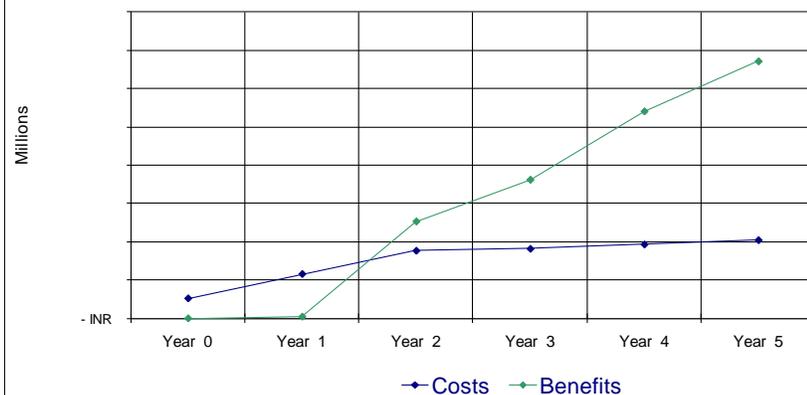
With the Information Management solution, the Bank of India is now able to produce daily reports to monitor the performance of its operations. Detailed and actionable data is now available to improve decision making—this was previously not possible with the distributed computing solution. This is becoming increasingly critical as the bank expands its branches, customer base and transaction volume



### Summary of the Bank of India’s IM Return on Investment

By developing the information management solution to aggregate data from all branches and channels and systems, the Bank of India can now incorporate facts into its decision making. The Bank of India has realised a ROI of 329% over 5 years and remarkable internal rate of return (IRR) of over 92%, which demonstrates the impact the IM investment is having even at this early stage, and reaching breakeven in only 19 months.

#### IM Break Even Analysis



#### IM ROI Study Highlights

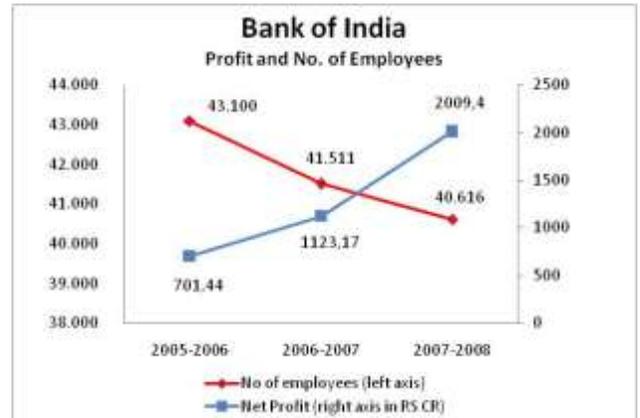
- 329% ROI over five years
- 92% IRR over five years
- Rs. 11.5 Crores Initial Investment (\$ 2.7M)
- Payback within 19 months
- Rs. 46 Crores Net Savings over five years (\$ 11.9M)

## Measuring success



### The Bank of India's Overall Return on Investment with HP

By partnering with HP to implement its 3 pillars—core banking, next-generation data center and information management—the Bank of India has transformed to become a success in every measurable way. The Bank has shown what is truly possible when the right combination of ingredients are put together in a winning recipe—the right strategy, partners that are collaborative and supportive of one another, and a clear roadmap with clearly defined measures for success.



#### Overall ROI Study Highlights

- 234% ROI over five years
- 209% IRR over five years
- Rs. 99 Crores Initial Investment (\$ 23M)
- Payback within 2 years
- Rs. 770 Crores Net Savings over five years (\$ 182M)

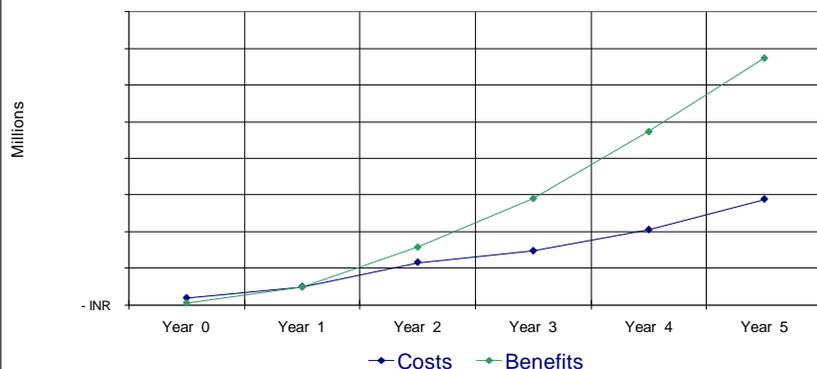
Thoughtware Worldwide's analysis shows the overall value realised by the Bank of India and how this strategic investment has permeated the organisation with enormous cost savings, new process efficiencies and most importantly the ability to become a customer-centric organization that delivers anywhere, anytime banking to its customers. The future for the Bank of India is quite bright, and this new platform will position it well to tackle the next chapter of leveraging its data—customer, product, and channel profitability—to truly achieve a customer-centric model with proactive, profitable and tailored solutions to its customers.

Overall, the Bank has realised a ROI of 234% over 5 years and a significant internal rate of return (IRR) of over 209%, with an incredible breakeven in under 2 years.

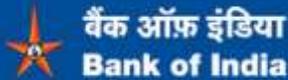
#### Business Outcomes\*

- **Doubled Revenue**  
Rs. 4154,86 Crores (\$ 28B to \$ 55B)
- **Tripled Profits**  
Rs. 2009 Crores (\$ 125M to \$ 425M)
- **22% Increase in Branches**  
from just over 2600 to 3000+ and still growing
- **12% Workforce Reduction**  
from ~45K to ~40K
- **8x Stock Performance Improvement**  
from ~40 INR per share in 2003 to ~300 INR per share

#### Cumulative Break Even Analysis



## Measuring success



### About the Value Measurement Series

This study is one of a series of investigations into the business value companies have derived from their investment in HP solutions. It is intended to serve business executives and managers who are evaluating HP Solutions to improve the way they operate their business leveraging technology.

This case study was commissioned by HP, and is based on original research and analysis conducted by Thoughtware Worldwide, LLC., an independent research and information services firm. Thoughtware Worldwide's research included on-site interviews with members of Bank of India's management team and reviews of company financial and planning documents.

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For more information about this study, please visit [www.ThoughtwareWorldwide.com](http://www.ThoughtwareWorldwide.com) or contact your local HP office

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### Bank of India Has the Opportunity to Harvest Additional Value

During the course of the Thoughtware Worldwide study, the Bank of India team identified additional areas where it could maximise the benefits realised from its partnership with HP. Leveraging its core banking platform and centralised data warehouse and data center, the Bank of India has the opportunity to further enhance value realisation and improve its capabilities and services by:

- **Harnessing Business Intelligence**—with detailed data from all channels feeding the Bank of India's new data warehouse, the opportunity to increase insights from customers, products and financial analysis will allow it to personalise offerings to customers, and improve product and customer profitability
- **Completing rollout to all branches**—Bank of India completed the total CBS transformation in May 2009, bringing all its branches onto the CBS solution. This was achieved in less than 5 years from the initial rollout and is much faster when compared with branches of comparable size and business complexities. The highlights include migrating of 112 branches on a single day.

### Summary

With HP as its true collaborative partner, the Bank of India is transforming banking in India. By establishing a platform to tie all its channels and information together, core banking is providing the Bank of India with an entirely new way to optimise banking operations and deliver on its promise to customers—relationship beyond banking. This new model is producing streamlined operations, faster settlement and clearing, and an overall improved access to money—all resulting in customer delight, and the unprecedented financial performance and success recorded in the Bank of India's accomplishments: 3x revenues, 4x profits, 9x stock performance, with 12% fewer employees and a 20% branch network increase. With HP's help, the Bank of India has produced a ROI of 234% over five years and a significant internal rate of return (IRR) of over 209%, validating the quality and importance of how this investment has transformed the Bank of India.