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CONNECTING THE BANKING WORLD







Interview Brian Hartzer Group Managing Director Personal Division ANZ



View Point: Australia and New Zealand Banking Industry



for Banks in 2007

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Convenience and Simplicity Pillars for competitive differentiation



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Voice from the Desk



Payments Roadmap

Welcome to 2007 and to the 9th issue of FinacleConnect! The beginning of each year is a time for reflection and resolutions. For those in the banking industry, it also brings forth the inevitable question - what are the key issues facing banks today? In this edition of FinacleConnect we hope to answer this question through the feature article which provides an exclusive glimpse of the 'Top 5 Imperatives for Banks in 2007'. Experts from Infosys' Banking Domain Competency Group explain the challenges around 'hot' areas such as predictive banking, SEPA and data management, and also state that despite all the turbulence affecting global financial markets, banks will continue to focus on key themes such as managing costs, improving profitability, ensuring regulatory compliance and sustaining shareholder value.

In Kaleidoscope, we take a journey down under exploring the key drivers and trends in the banking industry in Australia and New Zealand. We also interview Brian Hartzer, Group Managing Director, Personal Division at one of Australia's leading banks, ANZ who says that one of the main developments in recent years is the renewed focus on customer satisfaction. He adds, "Other than that, banks have been steadily investing in new delivery channels such as ATMs, debit cards and the Internet." Commenting on the role of technology within a bank, Hartzer states that technology is the enabler to help meet business goals and also helps in differentiating a bank. This issue of FinacleConnect carries a thought piece by leading research firm, Financial Insights on a critical area for the banking industry today – payments. Aaron McPherson, Research Director, Payments at Financial Insights examines the problem of implementing integrated payment systems while ensuring optimal ROI. In his article, McPherson provides a road map for banks to follow, beginning with a central payments database or a payments hub.

As FinacleConnect enters its third year, I would like to take this opportunity to thank you for your constructive feedback that has helped us continually enhance the publication to suit your requirements. We are sure you will enjoy reading this issue and assure you that FinacleConnect will continue providing a fresh perspective on issues impacting the banking industry.

Till next time!

Merwin Fernandes Vice President and Business Head - Finacle Infosys Technologies Ltd.



The Top 5 Imperatives for Banks in 2007

Introduction

The year 2006 has been volatile for global financial markets. Rising commodity prices, equity market growth and rising interest rates all played a part in this process.

The year began on a turbulent note, when the Russian energy giant Gazprom halted supplies of gas to the Ukraine on January 1, 2006 on charges of stealing of gas and the threat to disrupt supplies to its European markets. Four days later, an agreement was reached, to end the dispute. Though gas prices were doubled, they were offset by the rise in Ukrainian transit fees. The whole of Western Europe took serious note of this development. Threats to cut off energy supplies were not envisaged even at the height of the Cold War. This was a wholly new scenario. Russia was using its wealth in natural resources as part of a political agenda. This has serious implications for energy security in Western Europe and the global energy markets.

A mini crisis of sorts ensued in May 2006, when a major equity market witnessed a sell-off. The trigger seems to have been the decision of the Federal Reserve Board to raise its benchmark interest rates to 5%. The S&P 500 index fell by 4.8% in the period May 10 to May 19, the biggest fall over a seven-day period since March 2003.

There was also concern on the global interest rate front, with most central banks adopting a hawkish stance, with a view to reining in inflation and cooling rising asset prices. However, since then a series of good performances on the earnings front, restored confidence in investors and in October 2006, the Dow Jones Industrial average, closed above the 12,000 level for the first time.

By the year end, the Dow had risen to 12,463.15, an increase of

14.90% from the start of the year. Other equity indices also delivered robust performances, with the DAX returning 21.04% for the year, CAC 40 at 16.47%, the FTSE yielding at 9.49%, the Nikkei 225 giving a return of 5.28%, the BSE Sensex clocking a very impressive growth of 46.3% and the S&P/ASX 200 growing at 18.75%. On the interest rate front though, with inflation rearing its ugly head,

most central banks hiked their benchmark rates. Some of the key global interest rate benchmarks towards the end of the year looked like this:

Country	Benchmark	Rate
USA	Fed Funds Rate	5.25%
UK	Official Bank Rate	5.00%
Euro Area	Repo Rate	3.50%

Allied to the signals originating from the interest rate scene, there was another ominous close to the year. Shell, Mitsui and Mitsubishi ceded control of Sakhalin-2 oilfield development to Gazprom, Russia's state-backed gas giant, after attack by government agencies on their record on project cost and environmental concerns. This once again raises the threat of energy security for Western Europe and will have enormous implications for energy prices.

Despite all the turbulence affecting global financial markets, banks will continue to focus on key themes such as managing costs, improving profitability, ensuring regulatory compliance and sustaining shareholder value.

Adopting the top 5 imperatives set out in the following article will help banks in taking a step towards meeting some of their critical objectives set out above.



1. Predictive Banking

Predictive Banking is a modern revolutionary system that differs greatly from the traditional data mining and business intelligence tools. It is an analyst-guided discipline that utilizes data to make forward looking predictions. Further, predictive analytics is a revolutionary system that forecasts customer behavior and results in order to guide specific business decisions. A recent study on 40 North American and European organizations indicated that predictive projects yielded a median return on investment of 145% compared to 89% on those of non-predictive projects. Results have revealed that traditional non-predictive banking analytics has been ineffective primarily because

- Untargeted cross-selling can be unprofitable mainly because return on product differs between clients and is not uniform.
- A higher market share is no guarantee of higher profitability.
- Not all high net worth clients are profitable for the bank.
- Profitable customers exist across all traditional socioeconomic regions – since the majority of the customers are not profitable for the bank, insight into the sources of profitable customers is vital.

The implementation of predictive banking analytics is a three step approach starting from data accumulation, moving to understanding this knowledge and finally to profitably utilizing wisdom. Even though most large banks (assets greater then US\$ 50 billion) have created a customer data warehouse, only one-third of them have accurate data to conduct any type of analysis. Further, only half of these large banks have actually performed some type of customer level profitability study from data available with them. Lastly, less than 5% that have reached the second stage actually deploy long-term client behavior analytics to derive any bottom line benefit by implementing this initiative. Therefore, this territory greatly remains untapped. One such example of effectively deploying predictive banking is that of the Royal Bank of Canada (RBC). The Teradata value analyzer model co-developed with Teradata, classifies customers into three account level profitability buckets and utilizes long-term customer behavior data to maximize effectiveness. Now, the bank has over 80 proprietary models which score customers on a regular basis and use tactics and strategies to improve customer profitability. This strategy permeates throughout RBC's personal lines of business. The adoption has seen customer profitability grow over the last two years to over 11% per annum.

Predictive analytics aids banks to recognize the inherent value locked within their existing enterprise data. Strategically, predictive analytics provides a quantitative foundation for rapidly identifying, objectively evaluating, and confidently pursuing new market opportunities. Tactically, it identifies precisely whom to target, how to reach them, when to make contact, and what messages to be communicated during the customers lifecycle. Banks that will incorporate predictive analytics into their daily operations will improve their business processes, enhance their decision making and gain the ability to direct, optimize, and automate decisions, on demand, to meet defined business goals. Through predictive analytics, banks will not only better manage the present, but also increase the probability of future success. More so, given these benefits, coupled with the availability of predictive banking methodology and software in the coming year, makes it necessary to supplant traditional methods with predictive banking.

2. Profiting from the Data Tsunami

Banks continue to be confronted by a deluge of data not all of which is assimilated into useful information. This year will see an even greater surge of this data tsunami as banks seek to expand their product delivery channels & mediums of data exchange which will create newer data streams. These data sources are typically not tapped as they lack the order and definition that is found in structured data sources.

Banks will increasingly question the value generated by such data as the ability to manage and leverage upon it will make a direct impact on their revenues. As part of a larger information governance initiative there will be a need to put in place a strategy for dealing with the assimilation of unstructured data and invest in technologies that will transform the growing pile of data into communal knowledge pools.

Drivers for dealing with unstructured data

- Gain competitive edge by integration of the data channels and make selling a more predictive process. This is vital for the firm to break product silos and maximize cross sell/up sell opportunities.
- Enhance the ability to fully profile the customer and reach across to them with personalized products delivered at the right time. This is in the backdrop of a business landscape that is getting heavily commoditized and where banks can no longer count on just pricing to win over or retain customers.
- Regulatory developments like SOX, Basel II require the treatment of unstructured data at par with structured data. The massive 2005 court verdict against a major investment bank was partially a result of its inability to produce relevant e-mails and documents in a timely manner. Current trends of activist regulators and a stricter judiciary will test the ability of banks to comply with requests from regulators for full and complete information.
- Derive value from internal knowledge assets that are encapsulated in unstructured data. These are

Banks that will incorporate predictive analytics into their daily operations will improve their business processes, enhance their decision making and gain the ability to direct, optimize, and automate decisions, on demand, to meet defined business goals.



presently trapped as data islands in the form of word documents, spreadsheets, reports, memos etc. 2007 will witness the coming of age of the movement away from mass marketing to focus marketing as banks will have to cope with greater fragmentation of the target markets. "Know Your Customer" will now have to be dealt in its literal sense. Banks that can seamlessly integrate the customer data irrespective of their structure/source will be best positioned to leverage on the information and attain higher performance.

3. Challenges encountered in the implementation of SEPA

The Single Euro Payments Area (SEPA) involves the creation of a Euro Zone in which all electronic payments, be it national or international are considered to be domestic. It aims to improve the efficiency of international payments, and also to develop common financial instruments, standards, procedures and infrastructure which would result in economies of scale.

The establishment of SEPA has two major milestones:

- January 1, 2008 when Pan-European payment instruments for Credit Transfers, Direct Debits and Debit Cards will be available to the customer in addition to the national ones
- December 2010 when majority of the national payment instruments would be replaced by the Pan-European ones

With the first milestone fast approaching, banks in the Euro-zone including the 25 EU member states as well as Norway, Liechtenstein, Iceland & Switzerland need to be ready with their offerings of the SEPA products and services. Banks in the SEPA area will be required to invest heavily in technology in order to support the SEPA payment instruments.

Even though SEPA is a regulation whose implementation is mandatory, banks are going to be faced with challenges which need to be met head on. These are:

- Disparate operational rules and technical standards used by present payment systems – In the current scenario, there are a plethora of retail payment systems in the Euro Area that are used for the clearing and settlement of credit transfers and direct debits. As most of these systems have their own operational rules and technical standards, the challenge in front of the banks would be to move towards a common platform for making and managing electronic payments.
- All-round acceptability of the SEPA payment instruments The SEPA payment products namely the SEPA Credit Transfer (SCT), SEPA Direct Debit (SDD) and Credit Cards payments should be simple but at the same time the best in their category so that when launched, customers in the SEPA area should readily accept them and not be worse off than they are today.

- Implement Value Added Services Revenue for the banks through payment services accounts for about 33% of overall revenues. With the complete migration to SEPA, revenue from this channel is likely to fall by Euro 18 – 29 billion which would be 38 – 62% of their present revenues through payment services. In order to make up for this huge revenue leakage, banks will need to come out with Value Added Services which would help in partially if not completely offsetting the loss.
- Reduction in Processing Costs To maintain current profitability standards, banks would need to reduce their processing costs by atleast half which would require processes to be either streamlined or completely overhauled.

On the other hand, from a customer view-point, the introduction of SEPA will lead to reduced complexity and improved efficiency of payments. There will be improved interoperability of schemes (as products and services will be similar) which in the present circumstances is absent as different countries have their own products and services and charge fees accordingly.

4. Adaptive Pricing Paradigm (APP) in a Globalized Market

The term "Adaptive Pricing Paradigm" was originally used to refer to manufacturing companies from developing countries (primarily China) selling products at a price lower than the manufacturing costs of the counterparts in developed countries (primarily US) on account of lower labor costs. This meant that many businesses that made low value added / less complex goods & services in developed economies had their business models seriously challenged. As quality improved in developing countries and they mastered advanced techniques in manufacturing and processes in services, even companies that produced high value added goods & services were at risk. At that point, they were forced to transform their business models so that they adopted the APP, i.e. lowered the cost of production / providing service to the point where they were able to sell profitably in the market with the lowest purchasing power. By implication, this means that if one is able to sell profitably in the market with the lowest purchasing power, one may also be able to sell profitably in any market that has higher purchasing power.

The three components of the Adaptive Pricing Paradigm are

- Lowering the cost structure: Banks in developed markets have been pioneers in cost reduction and have been the innovators in outsourcing / offshoring to reduce costs and improve business agility. While this is important, the APP does not stop at simply becoming profitable in existing markets / market segments by reducing costs.
- Selling profitably in markets with the lowest purchasing power: This calls for out of the box think-

From a customer viewpoint, the introduction of SEPA will lead to reduced complexity and improved efficiency of payments. There will be improved interoperability of schemes which in the present circumstances is absent as different countries have their own products and services and charge fees.



ing which goes beyond making incremental changes in the traditional business models. Microfinance is a good example which made some of the poorest people in developing countries (traditionally shunned by mainstream banks) a bankable proposition. This has now not only won international acclaim (with Dr. Mohammed Yunus being awarded the Nobel) but has also drawn the attention of hard-nosed bankers as a profitable business opportunity.

• Replicating the low cost model in markets with higher purchasing power: Banks like ICICI Bank of India which has successfully introduced a lean and lower cost business model in India has now entered mature markets like the United Kingdom which now constitute a significant portion of its business. In Europe itself, this trend has been evident locally for some time, with banks like Santander (Spain) acquiring Abbey (UK). The trend has only become more global.

The year 2007 will be the starting point of a trend, where global banks, driven by demographics, are establishing sizeable presence in large and fast growing emerging economies viz. the BRIC. They will be forced to establish innovative APP business models in these economies which they will eventually replicate in their home markets. Banks like HSBC are already using terms like "shift spend to global innovation and service" and "being the low cost producer (of IT)" which sums up the phenomenon.

5. Banking the Retail way

Of late retailers have been giving banks a run for their money by stepping into the financial services space. These retail chains already have well established marketing skills, customer base and service standards which are all the ingredients of developing a healthy customer relationship. Recently, many retail stores and auto merchants have started issuing financial products like credit cards and auto loans to their customers. Also, retail websites have started giving services to their customers such as online payment of bills as well as a whole suite of banking products. Google has recently launched 'Google Checkout' in U.S.A. which allows online users to make purchases from the internet retailers without having to repeatedly key in their credit card details. In the last quarter of 2006, Checkout handled about \$900 million of transactions and this figure is only expected to grow.

The retail trend is not isolated and can be seen elsewhere as well – Companies such as Tesco, Volkswagon and Printemps have done the same by providing 'the convenience and flexibility' in their products that is geared directly to the behavioural pattern of their customers. In addition to retailers, non-banking financial institutions are also actively involving themselves in marketing and selling their own financial products – Insurance companies are actively pursuing the prospect of selling products such as Credit Cards by leveraging on their customer base and distribution network. In order to nurture long term relationships as well as retain their hold over their present customer-relationship, banks, who till recently were considered as the only institutional set-up which could provide financial services, will need to work on increasing customer service levels as well as their distribution network in order to survive the retail onslaught.

Another method for banks would be to develop alliances with large retail chains which would help them in tapping the readily available customer base as well as a large distribution network. A study conducted by Datamonitor in Europe has found that atleast 25% of the retailers who have been polled are ready to enter into strategic alliances with banks to provide financial services. If we were to drill down further, about 38% of retailers surveyed in Italy were ready to enter into strategic alliances which would offer innovative and newer financial products and services to their customers. For U.K., Germany and France, the figures stand at 25%, 12.5% and 8.3% respectively. Hence, the challenge for banks would be to enter into long term strategic relationships with large retail chains by offering new and innovative financial products to their customers.

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Global banks will be forced to establish innovative APP business models in the emerging economies viz: the BRIC which they will eventually replicate in their home markets.





Enterprise Payments: Breaking Barriers

This article examines the problem of implementing integrated payment systems, or enterprise payments. As banks have grappled with this issue, the main concern has been to avoid "boiling the ocean," finding ways to incrementally reform the myriad payment systems without the costs getting too far ahead of the benefits. In short, return on investment (ROI) has become key. This article provides a road map for banks to follow, beginning with a central payments database or payments hub.

Enterprise Payments: Describing the Concept

The concept of enterprise payments arises from the observation that all payment methods share a common set of data elements and functions. While a check and a credit card may seem very different on the surface, they are actually quite similar. Both have a source of funds, a security model, and a clearing and settlement network. Once the check is truncated into an electronic message, it becomes possible to process it through the same infrastructure used for the credit card. Table 1 shows how the four most significant payment types — cheque, card, ACH, and wire / real-time gross settlement system (RTGS) — can be abstracted into a common payment model.



Table 1. Common Elements of Payment Methods				
	Cheque	Card	АСН	Wire/ RTGS
Source of Funds	Deposit account	Credit line or deposit account	Deposit account	Deposit account
Security model	 Signature Expiration date Fraud models 	Positive payFraud modelsSignature	Fraud models Signature ID card	 Signature or PIN Debit block Token
Data elements	Account number/ bank routing number Transaction date Currency Amount Payee account number	Card number Transaction date Currency Amount Payee account number	Account number/ bank routing number Transaction date Currency Amount Payee account number	Account number/ bank routing number Transaction date Currency Amount Payee account number
Settlement network	Federal Reserve Regional clearing houses	Visa MasterCard American Express Star/First Data Interlink Maestro NYCE Pulse	Federal Reserve EPN Regional clearing houses	SWIFT Fedwire CHIPS Regional clearing houses Central banks

There are also common trade documents that govern the transaction and drive the payment, regardless of method: purchase order, invoice, and remittance advice. These documents may have different names depending on the application, but they maintain the same functions. For example, in consumer bill payments, the invoice is called a bill or statement. These documents can be transmitted as electronic messages just as a payment instruction can be.

An enterprise payment system, therefore, must be able to support the following functions.

- Messaging securely transmit structured electronic messages from point to point. These messages must include trade documents and statements as well as payment instructions. A message will always have an associated response.
- Workflow define transaction types and associated business rules, and manage the process flow for each transaction type.
- Security verify the identity of users, authenticate the source of each transaction, and manage access to data. This may also include antimoney laundering technology.
- Access provide access to the system through various channels, including the Web, telephone VRU, computer connected to a dedicated line, and kiosks. The same data and functions should be available through all channels.
- Data Transformation convert messages

Source: Financial Insights, 2006

Cover Story

from one format into another, including paper to electronic form and back again.

- Networking connection to all settlement networks.
- Integration with Third-Party Services

 these may include risk scores, databases of stolen cards or bad checking accounts, or entire components that are being handled through outsourcing or web services.
- **Risk Management** evaluation of each transaction to determine the risk that it may be fraudulent.
- Reporting and Analytics provide summary data for management reporting and system administration. May also be used to trigger customer strategies, like retention or cross-selling.

An enterprise payments solution would ideally be a single processing platform, consisting of the key elements shown in Figure 1. These elements are as follows:

 Payments hub. This is an intelligent messaging hub that includes business rules for processing multiple types of payments. This will be built out of middleware, and it integrates the other components of the system. It will have the capability to convert payment transactions from one payment type to another to enable the bank and its customers to take advantage of the most advantageous combination of price, risk, and timeliness available from different payment networks.





- **Payments database.** This records the transaction history for all payment types, and it feeds additional databases to all reporting and analytics hubs which consists of systems optimized for the following purposes: transaction monitoring and alerts, liquidity management, management dashboards and customer inquiry.
- **Reporting and analytics.** This consists of databases and reporting systems optimized for the following purposes: transaction monitoring and alerts, liquidity management, management reporting and analysis, and customer inquiry.
- Fee management. This ensures consistent and optimal pricing for all transactions based on a wide range of factors, such as settlement time, settlement risk, transaction size, external network fees, premium services, and customer relationship (e.g., monthly volume of payments, total assets managed).
- Security. This verifies the identity of users, authenticates the source of each transaction, and manages access to data.
- **Risk and fraud management.** This uses a combination of internal and external data, including statistical models and databases, to evaluate the probability that a transaction is fraudulent or violates money laundering statutes.
- Third-party services. These may include risk scores, databases of stolen cards or bad checking accounts, or entire components that are being handled through outsourcing or Web services.
- Access touchpoints. Access is provided to the system through various channels, including the Web, telephone VRU, computer connected to a dedicat-

ed line, and kiosks. The same data and functions should be available through all channels.

• **Imaging and data transformation.** This converts paper and electronic transactions into a common messaging format used by the payment hub.

In practice, as we shall see, an enterprise payment system will comprise many separate units of technology, from servers to databases, some legacy systems and some newly built. Figure 1 is meant to be a logical framework.

Market Forces Driving Banks to Consider Enterprise Payments

Banks around the world are experiencing profit pressures related to their payment systems, such that continuing with the existing siloed infrastructure is increasingly untenable. Among these pressures are the following:

- Lower prices. As more payment processing steps become automated, cost is driven out of the system and excess capacity is created, compelling banks and processors to lower prices in an effort to gain market share.
- Shifting payments mix. Over time, consumers and businesses have naturally gravitated from high-cost payment methods like checks to low-cost electronic payment methods like ACH and cards. Most of the banks that continue to support these older methods, have not only been limiting their flexibility to respond to the consumer trends, they have be riddled with high cost and low productivity issues.



• Regulations. In Europe, the Single European

Payment Area (SEPA) initiative has produced EU Rule 2560/2001, which requires banks to charge the same price for cross-border and domestic payments. As a result, all European banks are losing money on cross-border payments until they can convert them to a more efficient and automated processing system. Regulators in Europe and Australia have imposed price controls on card products, and there is growing

Source: Financial Insights, 2006





pressure in the United States for similar regulations. Compliance with new regulations on financial controls and money laundering has also added cost without creating new revenue opportunities.

Proliferation of new products and channels. New payments products, such as stored value cards, account-to-account transfers, and cross-border remittances, represent important growth areas for banks, yet the inflexible payments infrastructure makes it more costly and slow to add the support for these products. As a result, many banks are simply missing out on the opportunities. New channels, such as the Internet and mobile devices, require the creation and maintenance of new interfaces and support tools.

In response to these challenges, banks have adopted a variety of strategies, each with its own liabilities:

· Grow faster to achieve economies of scale. While banks can lower their unit costs by

spreading the fixed costs over higher transaction volumes, gaining this volume requires either lower prices or increased marketing spend, neither of which is easy in a low-margin environment. Growth by acquisition avoids these problems but makes the duplication and integration problems worse.

Utilize outsourcing/ offshoring. Banks can

> cut costs by taking advantage of an outsourcer's scale efficiencies or the lower labor costs available outside the United States. However, banks are generally reluctant to outsource payments processing because they see it as a critical function. Only certain process steps can be offshored, due to data privacy and security concerns.

Cut costs. Unfortunately, banks have become so efficient over the years at processing payments that there are very few savings left to be wrung out of the existing systems.

The limitations of the traditional approaches are what have led many banks to consider more radical restructuring of their payment systems. Those banks that have an enterprise payments strategy tend to have one of two strategies: data centric or messaging centric. In the next section, we will elaborate on these strategies and go beyond them, to show how an enterprise payments system can be gradually built from a few common components.

Existing Payments Architecture

As Figure 2 demonstrates, the main problem with the payments infrastructure found in today's banks is congestion: a web of interfaces between the payment systems, the delivery channels, and the core systems, which makes it extremely difficult to make any changes to one component without causing a ripple effect that damages other components.



Source: Financial Insights, 2006

A second problem is duplication; note that all of the payment systems have common functions, such as pricing, risk and fraud management, security, monitoring and reporting. Each of these functions has evolved independently, causing inconsistent performance. One risk and fraud group may be markedly superior to the others. Pricing is likewise inconsistent, leading to distortions in customer behavior.

This is only a partial diagram; in many cases, banks





will have added other software components to handle new functions such as anti-money laundering, stored value cards, and so forth. In addition, it leaves out payment systems such as credit cards that function autonomously from the rest of the payment infrastructure. If these other components were included, the diagram would be even more complex. mats and contains business logic allowing it to route transactions appropriately. While Figure 4 assumes a central payments database has already been built, it is equally feasible to begin with the messaging hub and add a database second.

Without any direct connections between components, it is possible to modify or replace one com-



3. While this does improve information flow, it actually adds more interfaces and complexity to the IT environment.

Beginning With a Messaging Hub

To cut through the spiderweb of interfaces, a messaging hub can be used, as shown in Figure 4. All infrastructure components are connected to the hub, which converts proprietary messaging forponent without affecting the others. This frees the bank to focus on areas of maximum benefit with reduced cost and risk. However, the duplication of payment system functions remains; in addition, the hub can become a bottleneck due to the number of messages that must be sent between it and the payment systems. Since all of the processing logic remains in the legacy systems, a



message must be sent to the hub at each step in order to allow it to provide real-time data for monitoring purposes. Over time, the messaging hub must evolve into a payments hub, a specialized software system capable of shouldering more of the actual payments processing itself.

Creating a Payments Hub: Centralizing Common Payment Functions

Figure 5 shows the first step in the evolution of a payments hub: the consolidation

Fig. 4





of common functions from the various legacy systems. Pricing, risk and fraud management, and security are now done centrally, allowing for the elimination of duplicate resources and alignment of processes with industry best practices.

is return on investment; to date, vendors have had difficulty persuading banks that the benefits of payments integration are worth the costs. The payments database itself can be sold as a product to corporate customers, which makes it a logical place to start. Other areas that we consider to have





• Compliance. The need to document financial controls for Sarbanes-Oxley, SEPA, and anti-money laundering regulations will compel banks to simplify their payments infrastructure. The ROI here is cost avoidance through reducing the cost of annual audits.

high ROI potential include:

Corporate payments. Banks are experiencing increasing pressure from corporate customers to simplify the payments process. In addition to the single view

Fig. 5

processing only those functions that are unique to each payment type, mainly communications with outside networks and handling of returns or exceptions.

Phasing Out the Legacy Systems

Ultimately, even these functions can be assumed by the payments hub, leading to the end state shown in Figure 6.

Source: Financial Insights, 2006

of payments activity that is enabled by a payments database, leading banks have also consolidated their front-end delivery channels, enabling a company to send a single bulk file that can be split and converted into the most appropriate vehicle for each payment. The next step beyond bulk file processing is least cost routing, which allows a company to simply specify the recipient, amount, and required set-



At this point, the bank's payments transformation is complete; all payments functions are controlled by a single system based on flexible, open technology.

Towards a Sustainable Business Case The key obstacle to achieving the vision shown in Figure 6





tlement date and let the bank decide how best to process the payment through a variety of ACH and wire transfer networks. The ROI in this case is increased sales and customers due to superior service and lower prices.

• Fraud management. By scrutinizing patterns of transaction activity across payment methods, a bank can improve its ability to detect money laundering and fraud. The ROI is again cost avoidance, in the form of a reduction in fraud losses and audit costs.

Conclusions

While the establishment of a senior payments executive can be helpful for coordination and strategy, it should not be viewed as a substitute for an enterprise payments strategy. In order to get results, banks will need to invest in IT. We recommend beginning with a messaging hub, followed by a single payments database, although the order of these steps can be reversed if incremental revenue is needed to fund development. The database should be designed with two goals in mind: providing improved service to corporate clients, and improving the quality of management decision making. Once the hub and database are in place, the bank should begin migrating common functions to the hub, followed by payment-method-specific functions. Ultimately, the goal is a single payments hub with links directly to the customer channels and the settlement networks.

Key Takeaway Points

Even if a bank were prepared to jump immediately to the end state (refer Figure 6), it would not be possible to simply go out and buy an "enterprise payment system." Short of buying a new core system, which is only an option for the smallest banks, it would be necessary to assemble a solution from multiple sources. This reinforces the logic of the step-by-step approach shown above, which allows a bank to benefit from the latest payments integration technology while waiting for the market to mature. Most banks will follow an incremental approach as shown in figures 3 - 6, starting with either a payments database or a messaging hub, and relying on savings from earlier steps to fund new development. •

Aaron McPherson Research Director, Payments Financial Insights



Source: Financial Insights, 2006

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Convenience and Simplicity Pillars for competitive differentiation



Interview with Brian Hartzer, Group Managing Director, Personal Division, ANZ

Headquartered in Melbourne, ANZ is among the leading banks in Australia and the largest in New Zealand. It has assets over AUD\$293 billion, employs more than 30,000 people globally and has more than six million personal, private banking, small business, corporate, institutional, and asset finance customers worldwide.



In a wide-ranging interview, Brian Hartzer, Group Managing Director at ANZ's Personal Division discusses the challenges facing the banking industries in Australian and New Zealand with FinacleConnect's Research and Contributing Editor, Rekha Menon. Hartzer also talks about ANZ's core strategic direction and his perspective on the role of technology for banks today. Prior to his current role, Hartzer spent 5 years as Managing Director of ANZ's Consumer Finance business across Australia, New Zealand, the Philippines, and Indonesia. He joined ANZ after 10 years with First Manhattan Consulting Group, a leading global strategic consulting firm to the financial services industry. Hartzer is also a Director of Metrobank Cards Corporation (Philippines) and is on the Visa International Asia Pacific Board, and Chairman of Save The Children Australia, the ANZ Staff Foundation and ANZ Diversity Council.

What have been the main developments in the Australian and New Zealand banking industry in recent years?

One of the main developments in recent years is the renewed focus on customer satisfaction. During the mid-to-late nineties, banks focused heavily on technology, namely ATMs and PC banking. They closed down branches and even started charging higher fees for personalised service. While certain elements of this strategy were necessary and helped reduce costs, banks went a little overboard, in the process displeasing customers. But at the beginning of this century the realisation struck that customer satisfaction was extremely low and customers were migrating to regional players that offered personalised service. Over the last five years we have seen a renewed focus on customer satisfaction in the industry.

Other than that, banks have been steadily investing in new delivery channels such as ATMs, the Internet, phone banking and debit cards. The consumer banking domain has also witnessed intense competition especially in the mortgage lending space. This is due to the rise in specialist and regional players and more recently, the entrance of foreign competitors in the market.

Q Can you describe ANZ's strategy?

On the retail banking side, ANZ has identified two key target areas, convenience and simplicity. These are two aspects of our service that we believe differentiate us from our competitors. We have then gone ahead and invested in areas that promote convenience and simplicity. such as opening new branches. In recent years we have opened 40 branches and plan to open 40 more this year. We have also extended banking hours, deployed new ATMs and invested in technology that helps reduce customer waiting time in queues. Importantly, we have focused on improving staff engagement and invested in training our staff, all of which has improved customer service. Today we have the highest customer satisfaction compared to other big banks.

To have a sustainable strategy, there needs to be a strategic differentiator. A number of our competitors have used price as a differentiator, but beyond a point that is not sustainable. We wanted to go beyond price and our focus on convenience and simplicity has been very successful. We are the fastest growing major retail bank in the region.

Q What is the role of technology in banks?

A

Technology plays an extremely important role for banks today. However, it needs to be understood that banking is essentially about people. Banks need to get their people focus right, so the people strategy can then be supported by technology. Technology is the enabler to help meet business goals and does help in differentiating a bank. What has been the nature of technology investments in the Australian and New Zealand banking industries?

0

The main focus has been on upgrading CRM systems, delivery systems, teller systems and so on. Although most banks have legacy core platforms, they have generally not focused on renewing these systems since the market is very competitive and very fast moving. No one wants to be left behind, so the focus has been on systems that enable the bank to improve service quality and generate greater revenue without down time.

Please describe some of ANZ's technology initiatives.

We have invested in technology that simplifies the banking process for customers and makes it more convenient for them. So for instance we replaced our internet banking platform with Finacle, which is a very important platform going ahead since a majority of routine transactions for existing customers are conducted online. We use technology to track queues and staffing levels in branches and have also invested in creating a sophisticated teller platform. Further, we reused components of this existing solution to develop a front-end platform for our customer service staff that helps them provide better advice to customers.

Security is another area that we focus very strongly on, both on credit cards and online. We are piloting a two-factor authentication solution for business customers; although in the retail environment I remain to be convinced that twofactor technology is viable since it can obstruct customer experience.

To help reduce our costs and improve efficiency, ANZ has invested in its own processing centre in India. This is a very important component of our overall strategy and improves our competitive advantage by helping us meet pricing pressures and the threat posed by foreign competitors. We've had a team in Bangalore for more than 17 years now.

Q What are the future plans for your bank?

Our aim will be to continue providing more convenient banking to our customers, which means investing in branches, alternative delivery channels and most importantly people.

Technology is the enabler to help meet business goals and does help in differentiating a bank.



View Point: Australia and New Zealand Banking Industry

Despite intense competitive pressures, the Australian banking industry has shown strong growth in recent years. Banks continue to account for about half of the assets of the Australian financial system and are expanding into lucrative areas such as wealth management. They have also remained profitable, generating an average pre-tax return on equity in excess of 20%. According to estimates by the Australian Bureau of Statistics, the finance and insurance arena is the fourth biggest sector in the economy, accounting for 7 per cent of the country's GDP. Moreover, over the past decade it is also the Australian economy's fastest growing sector, with the value of its output growing 40 per cent faster than the nominal GDP.







Industry overview

The sparkling performance of the Australian banking industry over the past decade can be attributed to two key factors. The first is the presence of a robust domestic economy, which has chalked up fifteen years of continuous expansion with real GDP growth during this period averaging 3.7 percent. The second critical factor that has been instrumental in propelling the strong growth of the banking industry is an extended period of strong demand for credit, especially from the household sector, which has been driven by the strong enthusiasm of Australians to borrow for housing in the low inflation, low interest rate and low unemployment regime that has prevailed for some years now.

The Australian banking system is highly concentrated. It comprises of 53 banks, 14 building societies, 157 credit unions and 7 specialist institutions — a total of 231 entities referred to as authorised deposit-taking institutions (ADIs). However, the industry is dominated by four major Australian banks, which together account for around 70 per cent of total ADI assets. It must be noted however, that while Australia's building societies and credit unions hold less than three per cent of total ADI assets, they nevertheless provide an important source of competition in retail deposit-taking and housing lending.

Top Australian Banks by Assets, 2005 and 2006 (US\$M)

	2005	2006
National Australia Bank (NAB)	308,767	349,003
Commonwealth Bank of Australia (CBA)	256,422	280,513
ANZ Bank	214,912	242,711
Westpac Banking Corp.	198,172	221,824
St. George Bank (SGB)	66,119	75,999
Note: All numbers in this document may not be exact due to rounding.		

Source: Financial Insights and Australian Prudential Regulation Authority, 2006

The four largest Australian banks - National Australia Bank, Commonwealth Bank of Australia, ANZ Bank and Westpac Banking Corporation - reported combined earnings of A\$15.1 billion for the FY06, up 13.7 percent from the previous year. They also reported increased net interest income up 16.3 percent off the back of increasing volumes, including growth in combined lending assets of 13.6 percent . Along with dominating the Australian banking industry, these banks also have a dominant presence in New Zealand. Westpac, for instance has been operating in New Zealand for 150 years, while ANZ has been operating in the country for over 100 years. In 2003, ANZ bought National Bank of New Zealand from Lloyds TSB creating in the process, the largest banking group in the country which as on 31 December 2003 held 34 per cent of the total assets of the New Zealand banking system.

As such, the New Zealand banking industry is overrun by foreign banks. Mergers and acquisitions have ensured that there is no longer any major New Zealand owned bank and there remains only one major New Zealand owned insurance company. The four largest banks in New Zealand - Westpac, ANZ National Bank, BNZ and ASB - are all owned by banks based in Australia and supervised by the Australian Prudential Regulation Authority (APRA). These banks control 90 per cent of the sector's assets, which the Reserve Bank of New Zealand estimates is equal to about 15 per cent of their parents' total assets.

Like New Zealand, the Australian banking industry too has seen the entrance of several foreign banking institutions over the years, al-



though 82 percent of the domestic asset base is still Australian owned. Last year, in a major move, HSBC acquired the sub-custody and clearing businesses of Westpac Banking Corporation, Australia's fourth largest bank. However, while foreign banks are significantly active in wholesale banking and the securities sector, they have not been able to make an impact in the retail banking domain. Both Barclays Bank and Natwest, for instance, had to withdraw their retail banking operations in the early 1990s due to lack of adequate market response.

Despite the down word pressure on price due to the presence of foreign banks, industry experts contend that foreign banks have also played a key role in efficiency improvement, innovation, creation of new product lines, as well as helped increase the globalization of the Australian financial system.

Key trends

In the late 1990s, saddled with high branch operating costs and low efficiency levels, and depending more on alternative channels, banks in the region followed a strategy of closing down bank branches. It is estimated that over the past decade in Australia, banks closed over 1600 branches. This myopic strategy, combined with the rise in electronic delivery channels and mortgage brokers - nearly 30 percent of new home lending is sourced via brokers - has meant reduced customer interaction. Disenchanted with their service providers, customers migrated to smaller, more focused banks such as Bendigo Bank and Bank of Queensland that provided the all important personal touch.

By the turn of the century however, banks had woken up to the fact that their customer franchise was being eroded,

• Focus on bank branches

There has been a concerted focus on opening new bank branches, upgrading existing branches and creating new branch strategies. Among the big four banks, ANZ has wholeheartedly adopted this strategy, planning to open 80 new branches over a 3 year timeframe. In an effort to improve individual branch performance, many banks have also adopted a strategy of providing greater autonomy to individual or groups of branches.

Improving customer experience

A recent PwC global survey of senior executives, "Winning the Battle for Growth", found that both accessibility and quality of front line staff are essential in enhancing the customer experience. When asked what makes existing customers more likely to do more business with them, 65% of global respondents cited welltrained, responsive staff. Recognizing that the key to building customer loyalty and trust is alignment of organizational priorities, a number of banks in Australia are investing in front line staff augmentation and training programs. Further, in an effort to attract new customers and retain existing ones, banks are extending opening hours; reducing reliance on third party brokers and changing the branch's focus to provide a unique retail experience.

CRM investments

In line with their focus on customers and achieving better customer knowledge, banks have made significant investments in CRM projects. National Australia Bank has been a front runner in this area having started focusing on this area since the late 1980s. Currently the bank's CRM technology infrastructure consists of a global data warehouse; a dedicated CRM database; a data mart for analytical and predic-

and since then, they Expected Number of Branches of Select Australian Banks, 2005 and 2008 have re-focused efforts on satisfying customers. Not surprisingly, many of the trends evident in the Australian, and by default, the New Zealand banking industry, are in this area.

			2005-2008 Growth	2005-2008
	2005	2008	(# of Branches)	(Growth %)
Commonwealth Bank of Australia (CBA)	1,006	1,006	0	0.0
National Australia Bank	786	786	0	0.0
Westpac	813	819	6	0.7
ANZ	756	826	70	9.3
St. George Bank	390	405	15	3.8
Bendigo	309	374	65	21.0
Bank of Queensland	173	250	77	44.5
Suncorp	172	213	41	23.8
Adelaide Bank	25	25	0	0.0

Source: Financial Insights, 2006



tive modeling; and a campaign management system that determines the information and delivery channel through which to target customers. The main effort of banks currently is to optimize their CRM investments to ensure that they are optimally utilized by the front-office staff and reflects on all interactions that banks have with their customers.

• Alternative Channel Development

In line with global developments, banks in Australia and New Zealand have adopted a multichannel strategy ensuring that customers can access the branch through a variety of alternate delivery channels namely ATMs, telephone banking and the Internet. As customer migrate their routine transactions to these delivery channels, banks are focusing very strongly on the Internet domain. It is estimated that there are between 7 to 10 million online banking users in Australia. ING Direct, the internet only bank has created a substantial presence in the region, having acquired over 6 percent of household deposits since its launch in 1999. ANZ recently revamped its retail internet banking platform using Finacle from Infosys.

Future Banking Technology Outlook

Estimates by research house, Financial Insights, indicate that technology investments by Australian banks will grow from US\$3.25 billion in

2006 to US\$3.42 billion in 2007 and to US\$3.62 billion in 2008. Channel-related spending will be approximate 26% of total spending in 2007 and 2008, which is indeed a high contribution to the total, considering that Australia is already a mature market. These investments in channels (branch automation, kiosks and ATMs, Internet banking, and the call center), explains Financial Insights, will reflect as aggressive channel growth plans of midsize banks.

Banks are also expected to invest significantly on meeting regulatory guidelines such as Basel II. Notably, while technology is a key focus area among banks in the region, one area that has not witnessed much activity is in core banking replacement. This is not because legacy core systems is not an issue. Like other developed regions, the US and Western Europe, most banks in Australia and New Zealand too are saddled with legacy core banking systems running on outdated languages such as COBOL. But most banks have preferred to work on upgrading and enhancing ancillary systems rather than touching their core platforms.

Industry experts suggest this is essentially because of concerns regarding the difficulty and the investment required for the entire core system replacement exercise, which is com-



pounded by bad experiences in the past, where banks lost time and money in trying to renew their core platforms. In their report on the Australian banking industry, Financial Insights states that near the end of 2004, NAB wrote off approximately A\$400 million in software assets and had to bear the public col-

Figures including spending for branch automation, ATMs and kiosks, internet banking, and call centres. Figures might include some services-related spending for the branch and ATM rollouts.

Australian Bank IT Spending Segment 2006-2008

Source: Financial Insights, 2006



lapse of its A\$200 million Integrated Systems Implementation. Westpac also suffered enormous losses in the late 1980s when it attempted to install a customized IBM CS90 core banking system. The failure of this project led Westpac to make estimated write-offs anywhere between US\$400 million to A\$700 million and go back to using its legacy core banking system.

Failed projects, notwithstanding, banks in the region do acknowledge that they will not be able to ignore their creaking core platforms for much longer – not if they want to improve efficiency and successfully compete against agile competitors. Many banks are therefore evaluating a gradual upgradation exercise for their core systems using a services oriented architecture approach.

Conclusion

Given its recent history of strong growth, the prognosis for the Australian and New Zealand banking industry is positive. However, as banks in Australia and New Zealand try to woo new customers and satisfy existing ones, they are faced with competitive market forces along with a complex and conflicting regulatory landscape. To succeed in such an environment most banks in the region have adopted a multi-channel strategy and are using technology to help meet business goals. To sustain their competitive edge in the long run, banks need to focus efforts on an area that is currently on the backburner for most banks, upgrading their core banking systems. A modular, services oriented approach will ensure that banks do not repeat the mistakes of their past. This is an initiative that requires serious thought and effort since not only will a modern core banking platform enable banks to rapidly develop new age products, it will also help them rationalize their internal processes and improve overall productivity levels.

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Case Study on Core Systems and IT Modernization Strategies: A Tale of Two Banks

TowerGroup Take-Aways

- Two of India's largest banks, Punjab National Bank and Bank of India, have modernized their core systems processing and IT environments over the past five years.
- Punjab National Bank, India's third-largest bank, decided on an in-house strategy for its modernization project, significantly expanding its in-house processing capabilities.
- Bank of India, one of India's oldest banking institutions, used an outsourcing strategy for its effort to
 modernize its core system and IT environment, contracting with Hewlett-Packard for systems integration and processing.
- Both Punjab National Bank and Bank of India have implemented Infosys's Finacle core banking system.
- Punjab National Bank installed Sun Microsystem servers at its Delhi data center, and Bank of India is using HP servers for its core processing platform.
- Although their strategies for core systems and IT modernization differed, Punjab National Bank and Bank of India realized success by effectively executing those strategies.

Report Coverage

This TowerGroup Research Note describes the efforts at two of India's largest banks to modernize their core systems and IT environments. The Note also identifies the drivers to modernization and the processes used by the banks. It describes the strategies the two banks used and the current status of their modernization efforts. A broader overview of the market for Indian banks' core systems is in TowerGroup Research Note V47:13R, *Looking for State-of-the-Art Core Banking? Try India.*

Background

The Indian Banking Environment

There are 27 public-sector banks and 30 private-sector Indian banks. Additionally, about 2,000 small cooperative banks compete for retail banking customers in India. A number of foreign banks, including ABN AMRO, Citibank, and Standard Chartered Bank, provide added competition, seeking the business of high-net-wealth individuals and large businesses. Because the Indian economy has expanded at an average rate of 7-8% over the last 10 years, the offshore banks are seeking a greater position in the Indian market. Government restrictions currently prevent foreign banks from owning majority interest in Indian banks and also prevent the banks from opening branches in high-growth areas without significant investment in rural areas. These restrictions, however, are scheduled to expire in 2009.

The Indian banking environment has undergone major change in the last 10 years with the issuance of private-sector banking charters. This issuance represents a reversal of the Indian government's actions of the 1960s, when the country's large banks were nationalized. During the 30 years of public-sector banking, basic banking services were extended to rural areas and the banks provided financial strength to the country in economic downturns. In the absence of significant private-sector competition, these banks did little to modernize their information technology or offer new banking services. Virtually all business was conducted at branches; no major investments



were made in new delivery channels or banking products.

The rapid growth of the Indian economy over the past 10 years and emergence of private-sector banks such as ICICI Bank and HDFC Bank altered the banking landscape in India. These banks implemented modern core banking systems and electronic delivery channels. The implementations allowed the banks to introduce new products and provide greater convenience to customers. As a result, the private sector banks attracted middle and upper-class customers at the expense of the public-sector banks. The public-sector banks have reacted to this competitive threat by modernizing their core banking systems, introducing competitive products, and expanding their banking services.

Punjab National Bank and Bank of India are two of India's largest public-sector banks and are the thirdlargest and fifth-largest banks, respectively, as measured by assets. Each bank undertook major efforts in the early 2000s to modernize its IT environment and implement new core banking systems. Although both banks selected Infosys's Finacle core banking systems, they adopted different IT strategies. Specifically, Punjab National Bank expanded its in-house processing capabilities, and Bank of India adopted an outsourcing strategy. The banks are compared in Exhibit 1.

Comparison of Bank of India and Punjab National Bank (2007)

▶ \$26 billion (USD) in assets (9/06)	\$33 billion (USD) in assets (9/06)
> 2,600 domestic branches	4,520 domestic branches
24 International branches	▶ 830 ATMs
16,000 shared ATM network	14,000 shared ATM network
26 million accounts	► 36 million accounts
1 million daily core banking transactions	▶ 1.6 million daily core banking transactions
► 42,000 employees	► 58,000 employees
Automation Status	Automation Status
▶ 1,039 branches converted (12/06)	2,248 branches converted (12/06)
Approximately 80% of business converted	Approximately 80% of business converted

Exhibit 1

Infosys's Finacle Core Banking System

Infosys Technologies is among the global leaders in information technology and consulting services. Headquartered in Bangalore, India, the company is also a leader in providing core banking systems. Infosys's Finacle solution is an integrated real-timecapable core banking system that provides both front and back-office functionality for consumer banking, corporate banking, and trade finance. The highly parameterized system includes an integrated customer relationship management (CRM) module (includes sales, service, and marketing components) and supports 24x7 banking. It also supports multicurrency, multilingual, and multi-entry operations. The vendor provides its Xtensibility tool kit to facilitate customization to meet local reporting and regulatory requirements.

The Finacle system processes on various UNIX-based operating systems and uses Oracle's relational database platform. The system was recently benchmarked on IBM System p servers with a base of more than 50 million accounts. The results of the test reflected the ability of Finacle to process nearly 8,000 online business transactions and 40,000 batch transactions (term deposit interest credits) per second.

The Finacle core banking system is the most widely used core banking system in India. In addition to Bank of India and Punjab National Bank, the system is used by banks such as ICICI Bank, Bank of Baroda, UTI Bank, and several foreign banks (e.g., ABN AMRO) for their Indian operations. The Finacle system is also used extensively by banks outside India, including Zurich Financial Services, Aspis Bank (Greece), Union Bank of the Philippines, National Commercial Bank (Jamaica), Bank of Alexandria (Egypt), and United Bank for Africa (Nigeria).

Bank of India

The Bank of India is a public-sector bank offering universal services to its customers throughout India and at 24 offices in 12 foreign countries. The bank is one of the oldest financial institutions in India, celebrating its 100th anniversary in 2006.

The bank first automated its operations in 1981 using an in-house-developed solution for partial automation of branch banking. In 1989, it became the first Indian bank to introduce in-branch ATMs. As in other Indian banks, processing was primarily branch based because of the lack of an adequate power and telecommunications infrastructure in the country. Despite these infrastructure issues, the bank was able to fully computerize all of its branches. TowerGroup believes



that Bank of India's business computerization was the highest among the large public-sector Indian banks during the 1990s. The bank has a team of 50 officers in its IT department at the head office and another 500 IT officers spread throughout India.

As the Indian economy began growing in the late 1990s and private-sector competition entered the market, the bank recognized that it would need to replace its core banking systems and expand its IT capabilities. Specifically, the bank wanted to become more customer-centric, add new delivery channels, introduce additional products, and reduce the time to market for new products.

Bank of India began its modernization project in 2002, using a team of internal personnel and consultants to define the requirements for the new IT environment. This group reported to a technology committee, which included the chairman of the bank. One of the team's recommendations was to outsource technology, making Bank of India the first large Indian bank to commit to an outsourcing strategy. This recommendation was based on an assessment of the bank's in-house capabilities, a desire to fix IT costs while significantly increasing the size of the bank, and the need to better ensure against technology obsolescence. A full set of requirements was then produced for vendor and systems evaluation.

The Decision

The bank spent 2003 researching vendor systems and outsourcing service providers, following a strict set of government rules for public-sector procurement processes. Bank of India decided that a single vendor should be responsible for both implementing the new systems and operating the IT infrastructure. It was felt that relying on a single vendor would allow the bank to better manage the relationship and ensure the fixed-cost structure environment. At the end of 2003, the technology committee had narrowed its vendor relationship search to an IBM/i-flex combined proposal and HP; the committee selected HP as the bank's technology partner in early 2004.

Implementation

The contract with HP was signed in February 2004 and covers a 10-year period for extensive outsourcing services, including data center, call center and network management, systems implementation and integration, and staff training. Additionally, the \$120 million (USD) contract includes provisions for technology upgrades and a 20% annual growth rate in processing requirements that would support the bank's goal to grow its base from 23 to 40 million customers by 2014. Documented exit and transition plans are in place if the bank needs to revert to inhouse processing. HP has constructed both a main processing center in Mumbai and a backup center in Bangalore to support the processing requirements. In addition to implementing a new core processing system, the vendor is implementing data warehouse and document management systems for the bank. Lastly, the vendor is required to strictly implement the bank's information systems security policy.

The core systems selection process differed from the typical core vendor selection process. Specifically, HP recommended Infosys's Finacle core banking system for implementation at Bank of India. The Bank of India technology committee then reviewed and accepted this recommendation, and system implementation began in March 2004.

The bank's IT team was trained by HP and Infosys in user-controlled functions of the system, including product parameterization, scripting, and report writing. The management product development and parameter setting are now handled by the bank's IT team, as are operations at the branches and certain critical functions related to data center operations (e.g., database administration).

Although HP is responsible for the implementation and ongoing support for IT, Bank of India has created a structure to oversee and monitor the environment. Specifically, the bank's board of directors receives monthly reports and presentations from a steering committee that provides overall status monitoring. Exhibit 2 reflects the key oversight committees and working groups that Bank of India has created for managing IT.

Bank of India Information Technology Oversight (2007)

The first pilot branch began operations on the Finacle core banking system at the end of August 2004, and the bank planned to convert 750 branches to the new system by June 2007. However, the bank found that it could accelerate the process and more quickly gain the benefits from the new system. In fact, it actually converted the 750 branches by June 2006 and has now converted more than 1,000 branches (and



Organization	Responsibility
Board of directors	Manages oversight; receives and reviews monthly reports and presentations
Steering committee	Monitors overall status of IT
Information systems committee	Measures IT performance
General managers' technology committee	Reviews new requirements, evaluates product viability, measures results, and recommends changes where needed
Risk management committee	Assesses operation risk and IT impact
Business process reengineering committee	Reviews and approves changes to business processes; all involved business areas participate
Performance measurement committee	Monitors service-level agreements, takes action as required

Exhibit 2

limited service sites) to the new system. Another 500 branches are scheduled for conversion during the first quarter of 2007, and all domestic branches are scheduled for conversion by the end of 2008.

IT modernization and new core banking system has allowed Bank of India to reduce its technology management costs by 20% and its transaction cost by approximately 17% The bank also embarked on a business process reengineering project to take advantage of the new system's technology. The reengineering included reassigning branch operations tasks to centralized operations staff. More than 1,000 branch people were then reassigned to assist in branch sales and customer service.

The bank also has been able to introduce a number of new products and services. These include mobile ATMs (with biometric authentication) that are moved through rural areas on a daily basis; Kisan Vikas, hybrid credit cards that can be linked to loan accounts for rural customers (and also have ATM access); the capability to download customer data to personal digital assistants (PDAs) for calling on small businesses in remote areas; and customer statements in multiple languages (three languages are available today and another five are planned).

Punjab National Bank

Headquartered in New Delhi, Punjab National Bank (PNB) is India's second-largest bank. The public-sector bank was established in 1895 and now has more than 4,000 branches.

Punjab National Bank first automated processing in 1985, installing automated ledger posting systems in branches. Essentially, these systems comprised standalone PCs connected to ledger posting machines. True computerized processing was implemented at zonal offices in the early 1990s to provide consolidated branch reporting for government and income reporting. Branch-based core accounting systems were implemented at 400 large branches that supported approximately 35% of the bank's business.

The Decision

PNB began considering a centralized core system in 2000. The bank's Y2K effort revealed seven different core processing systems at the 400 automated branches operating on 13 variations of the UNIX operating system. Moreover, India's Chief Vigilance Commissioners Office (CVC) issued a requirement that the public-sector banks computerize all business by the end of 2001. This requirement was particularly problematic for PNB because it was among the banks with the least computerization.

Responding to the CVC requirement for computerization, PNB selected a branch-based turnkey core processing system in early 2000 as a short-term strategy to increase the percentage of business computerization. The bank used a DOS platform package from a local vendor for PCs that it shipped with preloaded software directly to the branches. This strategy allowed the bank to computerize processing at another 1,500 branches (resulting in computerization of approximately 70% of the bank's business) by March 2001.

At the same time, the bank began soliciting bids for a centralized core processing system. Consultants from the Indian Institute of Technology in Delhi were hired in mid-2000 to assist the bank in developing a long-term strategy for centralized core processing. The consultants also provided support for the hardware and software procurement process. Key to the success of the new system was management's total commitment to the project. For example, PNB assembled personnel with both banking and IT knowledge from various areas of the bank and dedicated them to the project.

The PNB team and the consultants focused their initial efforts on finding the core vendor that best met the bank's objectives of improving customer convenience, reducing transaction costs, and providing management with critical business information. Based on these objectives, the bank selected Infosys's Finacle as its core banking solution.

Implementation

Following the selection of the Finacle system, Infosys conducted a seven-week intensive education program



The bank states that the new core system has led PNB to become the leading public-sector bank for business and profitability. Lead time for new products has been reduced to 1-2 weeks, and approximately 90% of new products are implemented through parameter changes, avoiding the cost and lead time required for software changes.

for 200 PNB personnel who would be involved in the implementation effort. This group also identified customization requirements. The majority of these requirements were driven by the bank's desire to use existing processes rather than change workflows and procedures to meet the new system's processing requirements. The group expressed some concerns about staff resistance to the new system, staff education levels in remote areas, and the overall amount of change that was being undertaken by the bank in a short time period. Other software customization efforts included developing cash management services, government business tax modules, and a safe deposit box accounting system.

The software customization effort required one year of work by Infosys to ready the system for PNB.

As the software customization was progressing, the bank developed and began implementing plans for training staff, regionalizing operations, expanding the data center, and implementing the Finacle system. Fourteen training centers were established throughout India to train 10,000 employees over a 12-month period. The Boston Consulting Group was employed to assist in the reengineering, and regional back-office operations were established in cities with two or more branches.

An existing data center in Delhi (used for consolidated reporting) was upgraded to become the first centralized processing center among India's publicsector banks. Sun Microsystems was selected as the hardware vendor; four Sun 6900 servers operating on Sun's Solaris operating system are now installed at the data center.

A key concern for the systems implementation plan was the existence of the seven different core processing systems among the bank's branches. PNB decided to ensure the Finacle system's ability to replace all these systems by conducting a pilot test using branches processed by each of the existing core processing systems. The bank conducted the pilot test from July 2001 to March 2002.

Upon the successful comple- Exhibit 3

tion of the pilot test, the bank began converting branches to the Finacle core banking system in March 2002. The bank has now converted more than 2,200 branches, representing approximately 80% of the bank's business, and the data center now supports more than 15,000 concurrent users. Exhibit 3 reflects PNB's core banking and IT modernization implementation schedule.

Time Line for Modernizing Core Systems and IT Environment at Punjab National Bank (2000-08)

Punjab National Bank's IT spending totaled \$50 million in 2005 and in 2006. The bank now has an internal IT staff of 50 and an additional 10-15 IT teams dedicated to the conversion effort. In addition to the core banking project, the IT staff has implemented Finacle's Internet banking system and supported the introduction of debit cards. PNB expects to have 2,500 branches converted by the end of March 2007.

PNB has established an IT governance model with an IT committee of business line and IT management responsible for developing and presenting IT budget and key decisions to PNB's board of directors. The bank states that the new core system has led PNB to become the leading public-sector bank for business and profitability. Lead time for new products has been reduced to 1-2 weeks, and approximately 90% of new products are implemented through parameter changes, avoiding the cost and lead time required for software changes.

Strategy Comparison

Bank of India and Punjab National Bank represent the





first public-sector Indian banks to modernize their IT using outsourced and in-house centralized processing strategies, respectively. Although using different strategies, both banks implemented Infosys's Finacle core banking system and were able to achieve their goals for their new core banking and IT processing environments. Exhibit 4 contrasts the strategies and tactics used by the two banks for their modernization projects.

IT Modernization Strategies at Bank of India and Punjab National Bank (2007)

Summary

Punjab National Bank and Bank of India recently modernized their core banking systems and IT environments. Although their strategies differed, both banks were highly successful. The successes were due not to development of a superior strategy for systems modernization, but rather to the execution of sound strategies that best met each bank's goals and objectives.

The banks used different hardware vendors, but they both implemented Infosys's Finacle core banking system. This choice recognized the depth of the vendor's resources, the system's proven scalability, and Infosys's expert knowledge of local banking requirements.

The outsourcing relationship between Bank of India and Hewlett-Packard represents one of the world's most important core banking technology outsourcing agreements. As the vendor continues to provide the services and support the bank's planned growth, HP should receive additional outsourcing contracts

Modernization Key Element	Bank of India	Punjab National Bank
Modernization strategy management	Technology committee with chairman involvement	IT steering committee and Indian Institute of Engineering consultant
Implementation strategy	Reliance on single vendor – HP selected	In-house team of 200 staff
Core vendor selection	Bank approves HP's recommendation of Infosys's Finacle system	IT steering committee selects Infosys's Finacle system
Processing platform	HP 9000 96 CPUs running on HP-UX 11i operating system	Sun 6900 clustered servers, Sun Solaris 5.9 operating system
IT support environment	Data center, network operations, help desk outsourced to HP	All functions in-house
Operations support	Centralized as part of business process reengineering project	Regionalized, back-office consolidated in cities with two or more branches

Source: Bank of India, Punjab National Bank, HP

Exhibit 4

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from banks in developing economic areas that seek to upgrade their processing capabilities. Banks considering outsourcing should examine Bank of India's strong information technology oversight organization structure.

Punjab National Bank's in-house IT modernization effort is particularly impressive given the gap between the bank's capabilities before it initiated the project and its current advanced state. Many banks with more established central processing capabilities either failed at modernization efforts or have been unwilling to take on such an effort. Banks considering core systems replacement using an in-house strategy should consider a commitment like PNB's to the systems and project reengineering efforts.



Robert Hunt Research Director, Retail Banking Tower Group

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In a flat world, customers expect banking operations to be available round the clock, 365 days in a year despite planned or unplanned outages. Many banks have geographically dispersed data centers that need information across the centers. To achieve this, banking platforms must be robust enough to provide "five nines" of availability or the system should be available for 99.999% of the time in a year. Five nines means that a user is ensured practically *no loss* of service due to hardware or software errors, or any downtime for upgrades or hardware maintenance.

Business Drivers for High Availability

There are several business drivers for using high availability solutions within banks. These are discussed in detail below:

Service level agreements

In today's competitive environment, there is an increased demand for high availability and scalability to accommodate rapid customer growth and business SLAs that banks provide to their customers.

• Business continuity

Centralized operations, multiple time zones and diminishing "batch window" have increased the need for uninterrupted banking operations. Virtual banking has also led to extended banking hours with 24*7 operations reducing the window for downtime.

• Improved profitability

High system availability will improve cost to income ratio of the bank and increase service availability thereby improving profitability.

• Business growth

Mergers and acquisitions have led to larger databases and volume of transactions. Automation to manage the growth in business has led to complex IT infrastructure that increase the probability of error occurrence. This complex environment makes it difficult to diagnose and isolate the fault, leading to increased recovery time.

UEUGH WATCH

ADOPTING HIGH AVAILABILITY

Benefits of well designed highly available solutions

Development have file	IT have fite
Business benefits	II benefits
 Protect corporate reputation, financial performance, and customer loyalty with prudent risk management 	 Increase IT quality and operational excellence by introducing industry best practices
 Achieve regulatory compliance and build greater trust with key stakeholders 	 Reduce IT costs by improving asset utilization, IT management, and staff productivity
 Gain competitive advantage through 24x7 business operations 	Enhance IT performance and availability
 Be more agile, flexible, and available in the face of business change and disruption 	 Build a secure, resilient infrastructure for an Adaptive Enterprise, where business and IT are synchronized to capitalize on change

Source: www.hp.com/go/continuityandavailability

The class of availability or the number of nines (99.9% or 99.99% or 99.999%) will depend on the speed and accuracy of the component's abilities - recognise, publish, failover and recover. In the event of failure, banks face serious consequences such as loss of revenue, dissatisfied customers, escalated regulatory risk, ratings downgraded and more over loss of goodwill in the industry. The table below shows how the non-availability of banking services can have a direct impact on the bottom-line of a bank.

Business	Industry	Hourly Downtime Costs
Brokerage operations	Finance	\$6,450,000
Credit card/sales authorizations	Finance	\$2,600,000
Pay-per-view	Media	\$150,000
Home shopping (TV)	Retail	\$113,000
Catalog sales	Retail	\$90,000
Airline reservations	Transportation	\$90,000
Tele-ticket sales	Media	\$69,000
Package shipping	Transportation	\$28,000
ATM fees	Finance	\$14,500

Source: Fiber channel Industry Association; Horison, Inc.

The impact of high availability can be derived from the above table. For eg:- A 99% uptime environment would cost a bank over **\$ 1,200,000** in lost revenue from ATM fees. Increasing the uptime here to 99.999% will reduce the lost revenue to **\$1,200** on an annual basis.

Causes of Failure

To ensure that banks use appropriate availability solutions to provide continuous operation of their banking systems, it is important to understand potential causes, the probability and the frequency of failures.

Causes, frequency and impact of downtime



Source: www.hp.com/go/continuityandavailability

Failures range from disk crashes and CPU failures, to catastrophic losses of bank computing facilities, or communication networks, as well as, planned downtime for maintenance. Interruption of service can also be due to increased load, spikes probably during peak hours, quarter end, year end operations or introduction of new products. Human errors such as wrong application of a patch or incorrect configuration can lead to unstable environment and outages. Natural disasters such as hurricanes, fires, floods and earthquakes too can bring the operations to a halt, while factors such as terrorism, and attacks by hackers can also lead to system downtime. All these factors need to be kept in view while designing high availability solutions.

Design Components of a Highly Available System

A quick recovery from failure requires a well designed availability solution. The magnitude of the impact of failure on banking operations depends on a number of factors such as the characteristics and complexity of the failed component. The impact of failure of a component is directly proportional to the throughput of the failed component at the time of failure. This loss is minimized by designing the component to transparently manage the failed transactions and different risk mitigations and failover solutions can be proposed for different causes of errors. The duration of downtime and recovery time will depend on the cause of error, time required for error diagnosis and implementation of the solution.

The key to availability solutions is **redundancy**. It is achieved by redundant hardware components, duplicated software running in parallel, online continuous backup of data and ensuring redundant network and network components. With the increase in the number of redundant components, the availability of the system increases.

Ideally, individual components should be designed with four additional abilities -- recognize, publish, failover and recover -- to enhance the availability of the system.

• **Recognizing** the existence of required components in the system modifies the way the components function. This recognition capability of the component reduces the time required for communication and complete recovery. For instance, load balancers recognize the existence of other passive or active load balancers in the same farm. Similarly the load balancer is aware of the web server farm or the application server farm. • The other important ability of a component for instantaneous recovery of a system is to indicate its failure. For instance, in the case of failures, the components could be programmed to indicate the failure conditions to external systems. Generally key components (such as a load balancer) do a periodic check to find whether the components (web servers) are functioning normally. The periodicity of the health check may induce delay in recovery of the system. The components ability to publish before failure will reduce the necessity of health check by other component thereby reducing the delay.

The class of availability or the number of nines (99.9% or 99.99% or 99.999%) will depend on the speed and accuracy that the above component functions have achieved. For instance, the appropriate automation of the component function steps may enhance early return of the system to normal operations after failure.

Creating and Managing High Availability

The following diagram represents an environment for deployment of high availability system for banks.

Some of the success criteria to build and mange highly available system are listed below.

The failover ability of a component is the switch over of complete functionality of a failed component to A success criterion the redundant components. Server instances in clusters participating in load balancing are generally configured and installed with homogenous environment. Any set of active server instances in the given farm can take over the complete functionality of the failed servers in a given farm.

Recovery of a com-

ponent after failure to normal functionality should be designed to have no interruption to the services provided by the system For instance, disk mirroring helps to switchover to the backup drive automatically when the primary drive fails. This has no impact on the regular functioning of the system.

Abilities of system components for high availability

Recognize	Publish
Recognize existence of other	Components designed to publish
components to aid faster inter	its state and event before failure
component communication	help in faster recovery
Failover Redundant components are designed to take over complete functionality of the failed com- ponent with nil or minimum interruption to system services.	Recover Failed component should be designed for quick recovery with nil or minimum interruption to system services.



A success criterion for high availability is to remove the single point of failure (SPOF) in the hardware, firmware, application software, network, and infrastructure layers. SPOF is the weakest link in the chain. Some SPOFs can be avoided by providing redundant components, while some will not allow for redundancy and may require alternate architecture or design for the same solution capability.

· Highly available systems have redundancy in all layers of the architecture. Providing redundant hardware components in the system like redundant servers, redundant load balancers, dual network interface cards, dual power supplies, software redundancy, disk mirroring would help the system to continue when any component fails. The redundant component will completely take over the functionality of the main component when it fails. Fault tolerant systems are designed with high redundancy and all redundant components continue operation even during fault conditions. This helps the

for high availability is to remove all the single point of failures (SPOF) in the hardware, firmware, application software, network, and infrastructure layers.

fault tolerant systems to recover from errors instantaneously. For example, RAID Level 5 for storage system provides fault tolerance. When one disk in the array fails, the storage system is equipped to retrieve stored data accurately.

Availability solution for different components

Component	Possible solution
Web and application server	Clustering and using load balancers
Network	Redundancy
Database	Clustering
Storage	Redundant disks and switches.
Application	Standard framework and Service Oriented Architecture
Hardware	Redundancy
Data	RAID & data replication, back up

• The automation of tasks prevents mishaps caused by human error and helps to guarantee successful completion of tasks. Automation achieves efficiency in detecting an event and responding appropriately. It helps in, gathering data, auditing and analyzing data with high accuracy. For example, polling for availability and resource usage statistics is easily automated. The resulting data helps in early detection and reporting of problems which can avoid an impending failure.

• Good monitoring and management software maintain the systems with minimum human interruption. Today's high availability solutions are complex, self healing and provide minimum number of customized alerts as programmed by the administrator.

Documentation, testing, server consolidation and appropriate sizing are some of the minimum requirements for managing any system and are more pertinent for highly available system. Documentation captures heuristic knowledge of High Availability (HA) specialists. Well documented procedures and processes of failover and disaster recovery plan aids administrators to execute recovery plan accurately in the event of a failure or a disaster. Realistic, measurable and documented service level agreements will ensure easy management. Maintaining separate environments for near site and business contingency site that are well tested will result in minimizing disaster outage. Server consolidation ensures simplicity and manageability of the environment. The redundant components should be appropriately sized to service additional load of failed components.

• Standard frameworks, designs, architectures, with cluster ware and load balancers imbibe the availability features provided inherently. Standard frameworks such as J2EE, .NET provide regular availability features such as persistence, security, stateless connections. *Service oriented architecture (SOA)* ensures no loss of transactions on failure of any component since these services are stateless.

- Clusters provide for high availability by:
 - o Failover protection for the server instances within a cluster
 - o Providing a runtime environment for redundant web, application and database server components
 - o Ensuring no disruption to the service on addition of server instances to the cluster
 - o Providing scalability for additional load
 - o Providing transparent failover to the end user

The cluster thus acts as a safe boundary for session failover for the server instances within the cluster.

The Load balancer delivers high availability by:

•

- o Providing two alternate paths that can be used by the application to reach the same destination.
- o Redirecting and redistributing HTTP and HTTPS requests to existing available web servers in a web server farm on failure of an instance
- o Allowing to upgrade components within the application server without loss of service.

For high availability, the load balancers are always deployed redundantly and are configured as activeactive or active-passive mode. For simple, stateless applications a load-balanced cluster is sufficient. For mission-critical enterprise banking applications it may be useful to mange persistency of sessions at the database.

• Managing systems require *planned maintenance* activities such as data backups, database reorganizations, hardware and software upgrades carried out during "maintenance and batch windows". Highly available system mandates the application to have alternate mechanism to provide the banking functionality during the planned downtime. This may be achieved by designing the application to provide complete online functionality during the "batch window" or designing

Service oriented architecture (SOA) ensures no loss of transactions on failure of any component. the application to work on alternate database for critical functionality with subset of main data.

• Centralized banking solution provide for branch or delivery channel services over Wide Area Network (WAN). Non availability of network will render services unavailable in the branches, ATM or POS connected over the network. Applications may provide for *proxy servers, decentralized stand in servers* for branch services until network is made available. Redundant networks would be the ideal solution in most cases. In remote areas with poor network conditions it may necessitate an application solution at the remote site. The alternate application solution supports the essential banking operations during network failures and manages the data consistency with the main database.

Services that enhance management of system availability



Conclusion

Highly available system mandates the application to have alternate mechanism to provide the banking functionality during the planned downtime. Complexity, volume and size of operations have increased the need for high availability within the banking environment today. The benefits of well designed highly available solutions are not merely restricted to the technology domain. There are several important business benefits too such as increasing competitive advantage, improved profitability, ensuring regulatory compliance and protecting corporate reputation.

The availability of a system is directly related to the availability of its components. Increasing component redundancy increases overall system availability. Redundancy of all components across the stack and all layers of the architecture helps reduce the system down time. Further, the speed and accuracy of the system recovery post-failure depends on the four abilities of individual components of the system namely - *recognize, publish, failover, recover.* Removing all points of failure from the system is essential to achieve high

availability. Other factors such as automation, adopting standard frameworks, documentation, testing, server consolidation and appropriate sizing, also help improve availability.

The magnitude of the disruption to banking operations is a function of the throughput of the failed component; the cause of the fault; duration of the downtime and the recovery time of the failed component. The bottom line is — be prepared with alternate solution for all types of known failures for all critical transaction components.

Radhika Santhanakrishnan

Delivery Manager-Software Performance Engineering Finacle

Devarajan C

Product Development Manager-Software Performance Engineering Finacle

Infosys in the news

Hallmark

Infosys third quarter revenues up 46.9%

Infosys Technologies Limited announced financial results for its third quarter ended December 31, 2006. Revenues for the quarter aggregated \$ 821 million, up 46.9% from \$ 559 million for the quarter ended December 31, 2005. Net income was \$218 million (\$ 143 million for the quarter ended December 31, 2005). 43 new clients and 6,062 new employees were added during the quarter.

Infosys at World Economic Forum Annual Meeting, 2007

Infosys attended the Annual Meeting of the World Economic Forum at Davos from January 24th – 28th, 2007. This year, Nandan Nilekani, CEO & Managing Director, Infosys was the co-chair at the ICT Governors Meeting, which featured CXOs from the IT and Telecom Industries. The theme of this year's Annual Meeting focused on the "shifting power equation." Infosys showcased two pieces of thought leadership at the summit. These included "Vision 2020 – Shaping the Future of Financial Services" and "Re-envisioning Operations: CEO Playbook for a Converged Future."

Finacle – The Universal Banking Solution from Infosys

Finacle positioned in the Leaders Quadrant: Magic Quadrant, International Retail Core Banking Solutions

Finacle core banking solution was positioned in the Leaders Quadrant in the recently released Gartner 'Magic Quadrant* for International Retail Core Banking (IRCB) 2006' report. Magic Quadrants depict markets using a two dimensional matrix that evaluates vendors based on their completeness of vision and ability to execute. According to Gartner, "Leaders are vendors that possess a strong banking market understanding, have a measurable strategy for disaggregating core banking software functionality into component-based constructs; exhibit highly developed and certified development and delivery of quality methodologies, and have extensive marketing delivery and sales channels. Leaders also share conspicuous operational organization approaches that are relevant to the business and a willingness to extend resources to ensure a successful customer experience"



Source: Gartner, Inc. "Magic Quadrant for International Retail Core Banking, 2006" Don Free, 25 January 2007

Finacle Sets New Benchmark

Infosys and IBM set a new record for performance benchmark for Infosys' Finacle Core Banking Solution running on IBM's System p Servers. In the recent scalability benchmark, reviewed by Ernst & Young, Finacle on IBM System p servers surpassed its own previous record as the most scalable core banking solution in the world. Finacle on IBM System p benchmark performed on a base of over 52 million accounts, delivering a transaction throughput on delivery channels at 29,010 effective transactions per second (ETPS) beating its own previous best of 11,180 ETPS. The new delivery channels transaction processing benchmark translates to a business transaction throughput of 19,288 business transactions per second (TPS). Banks running Finacle and IBM System p servers can now add new products and services and be able to handle the increased transaction and account processing requirements on a highly scalable, robust, low TCO platform.

* The Magic Quadrant is copyrighted 25 January 2007 by Gartner, Inc. and is reused with permission. The Magic Quadrant is a graphical representation of a marketplace at and for a specific time period. It depicts Gartner's analysis of how certain vendors measure against criteria for that marketplace, as defined by Gartner. Gartner does not endorse any vendor, product or service depicted in the Magic Quadrant, and does not advise technology users to select only those vendors placed in the "Leaders" quadrant. The Magic Quadrant is intended solely as a research tool, and is not meant to be a specific guide to action. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose. This Magic Quadrant graphic was published by Gartner, Inc. as part of a larger research note and should be evaluated in the context of the entire report. The Gartner root is available upon request from Infosys.





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FIRST**LOOK**

Alfred Slager

THE INTERNATIONALIZATION OF BANKS PATTERNS STRATEGIES AND PERFORMANCE

In today's era of globalization, the mere fact that a bank is operating internationally and has expanded its operations beyond the boundaries of its home country, is often regarded as a measure of its success. However, an internationalization strategy and the parameters of success and failure are far more complex, as is explained by Alfred Slager in his excellent book, *The Internationalization of Banks*, which charts the growth of internationalization in the banking industry, evaluates the strategies adopted and tries to suggest successful strategies for the future.

Internationalization is not a new phenomenon for banks. Over a century ago, British banks had set up branches across the British Empire and banks like HSBC, Citi, Deutsche and ABN AMRO have long been associated with international operations. But recent decades have seen a dramatic rise in international activity in absolute terms. In 2004, Slager says, the 25 largest banks in the world held over USD 10.2 trillion in assets, employed 916,000 staff and generated 36 percent of their total banking income. 9 of the 25 largest banks in the world now have more foreign than domestic activities. In many Eastern European countries, foreign banks practically control the banking sector and so is the case in Latin America. No doubt, there are compelling arguments going for internationalization. It provides economies of scale, access to a new customer base, and by balancing their domestic and foreign operations, banks can weather economic vagaries. Internationalization is also said to be good for the foreign banking markets especially emerging countries, where experts suggest that it introduced competition and helped stimulate economic growth. Nonetheless, asks Slager, to what extent have internationalization strategies benefited a bank's profitability, stability and shareholder performance? The answers are interesting to say the least.

Foreign profitability is on average lower than domestic, states Slager. An increase in internationalization there-



fore lowers profitability for banks. Also, foreign banking activities do not improve stability of earnings and geographical diversification benefits do not percolate down to the entire organisation.

This then brings up the obvious question, is an internationalization strategy counter-effective for banks? Not really. Banks that are fully established and have a long term commitment to internationalization and banks that are fully committed to domestic expansion are profitable

and successful. Over a period of 25 years, both these categories of banks delivered five times more shareholder return than banks that are currently increasing their international presence. In the long term, concludes Slager, shareholders of banks with established and accelerating internationalization strategies will be most rewarded.

The Internationalization of Banks is extremely well written and Slager presents his findings in a cohesive manner without digressing into minute or irrelevant detail. He starts with a discussion of the main challenges facing the world's largest banks since the 80s going on to discuss the theoretical framework of international banking essentially why banks internationalize and finally moves on to the core argument of the book, analysing internationalization patterns and bank performances. Throughout, the text is peppered with examples and in-depth discussions about the successes and failures of banks around the world that have followed the internationalization route. This serves to further enhance the overall reading experience. While the final chapter on future directions could have been fleshed out a little more with a more extensive discussion on suggested future strategies, it is on the whole a well researched book. And given that the subject matter is highly relevant in today's context, it makes for very enjoyable reading as well.

Rekha Menon

Research and Contributing Editor FinacleConnect

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