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Modernize or Fail: The Modernization Challenges Facing Banks, and the Technology Implications

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“The recent crisis has caused a proper introspection as to the role that banks play in society and we should all welcome this.”

Douglas Flint, Group Chairman, HSBC Holdings, in an address to the British Bankers’ Association’s annual conference, London, June 2011

“We should note that while worldwide regulation and supervision are important, they have seldom, if ever, averted a banking crisis. What really counts, above all, is the application across firms of a strong risk culture.”

Rick Waugh, Vice Chairman, Institute of International Finance, and President and Chief Executive Officer, Scotiabank, in a speech, London, April 2011

“In this age of rapid change, we strongly believe that now is the time to reaffirm the mission of banks; that is, to provide fundamental services such as the smooth supply of funds, consulting services, and advice on management issues to clients.”

Koichi Miyata, President, Sumitomo Mitsui Financial Group, and Takeshi Kunibe, President, Sumitomo Mitsui Banking Corporation, in a message from top management, April 2011

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Introduction: The Modernization Imperative

The challenges that banks face today are of the highest order. Sovereign debt crises are destabilizing financial markets and the global economy. Much of the developed world is experiencing sluggish economic growth, with rising inflation and unemployment. Capital and liquidity are still not so easy to access and manage. Politicians and regulators are writing new financial regulations at a rapid rate.

Competition among financial institutions is as tough as ever. Customers are knowledgeable and demanding. New products have to be developed, tested and launched. Delivery channels are more varied and complex.

Faced with such an array of challenges, banks need to modernize their business operating models and their technology components if they are to benefit fully from the next period of growth. Indeed, if they do not so, they are likely to fail – not necessarily in the sense of going into liquidation, but in the sense of failing to satisfy customers, failing to maintain revenues and profits and, most important of all, failing to please shareholders.

This publication examines, therefore, the need for banks to modernize, and the technology changes that must be made to enable that modernization. Section 1 outlines the wide range of challenges – from economic and financial market volatility, through to greater competition and the burden of new regulation. Section 2 explains why banks need to revise their business strategies if they are to survive, and Section 3 why they need to change their operating models if those strategies are to work.

Section 4 outlines the technology implications of that modernization. It shows how banks need to update their software and infrastructure in order to facilitate business and operational transformation.

Section 5 is a call to action – modernize, or fail. Organizations cannot undertake the IT aspects of a modernization program on their own. They need the support of world-class IT vendors, vendors that can provide the latest industry-specific applications, through to middleware and SOA, all the way through to best-in-breed technology infrastructure and data storage. They are also likely to need consultants to advise them on their choices, and how they implement those choices and integrate with their existing applications and systems.

This paper only sets the scene. It only touches the surface of bank modernization. Over the coming months we will, therefore, explore these issues in more depth in a series of follow-up white papers. We hope you find this first one useful and we welcome any feedback that might make the next ones even more insightful.

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1. The Challenges Facing Banks Today

Generating revenues and profit in difficult conditions

The most fundamental challenge, as always, is to generate strong revenues and healthy profits. This is no easy task in the difficult economic conditions that prevail in certain parts of the world, especially in Europe where the sovereign debt crisis continues and where banks still face high credit risks.

Douglas Flint, Group Chairman of HSBC, the world's third biggest bank by assets, in a speech at the British Bankers' Association's annual conference last year warned that although the "acute phase of the recent financial crisis" appeared to be over, "we are now entering a new phase with even more complex actors and stresses".

These stresses included "a sovereign debt crisis in peripheral Europe with risk of contagion and structural political challenges across the whole eurozone, a period of fiscal consolidation in the West with varying degrees of political buy-in... commodity and food inflation across much of the developing world, an unprecedented wave of social and political disturbance across much of MENA leading to regime change in many cases, and the redirection of much of the financial surpluses of four of the largest surplus countries in the world China, Japan, Saudi Arabia and Germany, to meet domestic or regional priorities", said Mr. Flint. Amidst all of this, the G20 leaders are attempting the complete restructuring and recalibration of the global financial system, he added.

Domestic and foreign expansion

Generating good revenues and profits in uncertain times is only part of the story. Most banks have ambitious expansion strategies for domestic and foreign markets, which they hope will bear fruit once economic conditions get better.

Emerging markets present the best opportunities – not just the populous, relatively sophisticated BRIC countries of Brazil, Russia, India and China, but also the smaller CIVETS nations of Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa.

"Our research estimates that world output will treble by 2050, driven by growth in emerging markets," says HSBC's Mr. Flint. "Nineteen of the 30 largest economies in 2050 will be countries that we today describe as emerging, and collectively today's emerging world will, by mid-century, be larger than the developed world." The two sectors that will be most affected by this growth are infrastructure – roads, bridges, railways, airports, energy, telecommunications – and the capital markets, which will be called upon to fund the investment in the physical infrastructure.

Improving risk, capital and liquidity management

As they attempt to boost earnings and look for expansion opportunities, bankers will have to keep a close eye on how they manage risk, capital and liquidity. Law-makers and regulators have been piling on the pressure in this respect, but sound risk management, capital adequacy, and liquidity

management depend on sound internal policies and procedures as much as on any externally imposed requirements, and bank leaders realize this.

Banking Banana Skins 2010, a survey of more than 400 bankers, regulators and industry observers around the world carried out by the Centre for the Study of Financial Innovation (CSFI), lists the industry's top 30 concerns. "Political interference" was the number 1 worry, followed by "credit risk" at number 2. Not far below were "liquidity" (5), "capital availability" (6), "risk management quality" (8) and "equities" (in other words, "market risk", at 10).

The Institute of International Finance (IIF) has been the foremost industry body in the wake of the financial crisis to encourage banks to put in place wide-ranging programs to address weaknesses in risk management, governance and other areas. A survey conducted for the IIF by accountants Ernst & Young in early 2011 found that the reforms are well underway, though will take time to complete.

Most banks in the survey reported that boards of directors are now playing a more prominent role, and senior managers together with the boards are setting a clearer direction. The single largest lesson learned from the crisis was the need to focus more on liquidity risk management, said 88% of survey respondents. Not surprisingly, therefore, the survey found that banks are indeed addressing this lesson: 92% of respondents reported that, since the crisis, they have made changes to managing and controlling liquidity risk.

The survey also noted that the executives interviewed are acutely aware of the potential organizational impact of the new regulatory standards on capital and liquidity imposed by Basel III, in addition to what banks are imposing on themselves. Although Basel III does not come into effect until 2013, some banks have already started to raise and set aside more capital and liquidity, while others "have adopted a wait and see attitude"

Being competitive

The need to become and remain more competitive is a serious challenge. The banking market is saturated with providers, products and services – particularly in the retail, small business, corporate and wealth management sectors, but investment bankers are up against stiff competition too. Financial services has always been a competitive business, but banks are finding it even harder today to differentiate themselves from existing providers and the steady trickle of new entrants.

The UK is one of the most intensely competitive banking markets. It provides a graphic example of the nature of the challenge of competition. The main developments include:

- Impending privatizations. Royal Bank of Scotland (RBS) and Lloyds Banking Group (in which the Government has large shareholdings) and Northern Rock (which the Government owns outright) are being made more efficient, competitive and profitable as the Government prepares to sell its shareholdings. Returning them to the private sector will benefit the treasury, taxpayers, customers, staff and the wider economy, but it is placing the managers of these banks under great strain as they strive to become more competitive.
- In turn, the other British banks – as well as building societies, life insurers and investment managers – are feeling the strain of having to compete against these reinvigorated state-owned banks.

- The financial services arms of non-banking organizations are steadily expanding, eating further into the market shares of traditional financial institutions. For example, Tesco Personal Finance, owned by the supermarket chain Tesco, changed its name to Tesco Bank in October 2009. Virgin Money, part of Richard Branson's Virgin Group conglomerate, acquired two small banks in January 2010 and got a banking license; in April the same year, US investor Wilbur Ross invested £100m in Virgin Money "to help with the organic growth of Virgin Bank", and promised another £500m for acquisitions; in December 2010, Virgin Money added to its prepaid cards range, euro and dollar pre-pays.
- Several completely new banks have appeared on the scene – such as Metrobank, NBNK and Bank of London and the Middle East. Metrobank, which opened its first branch in July 2010, is Britain's first new full-service high street bank in more than 100 years. Metrobank's innovative approach in areas such as opening hours and customer acquisition has shaken up the established banks: its branches (which it calls "stores") are open seven days a week for long hours, and about 90% of its customers are acquired from referrals from other customers.

Around the globe, banks are making acquisitions or divesting of non-core businesses in order to remain competitive. For example, in the US this year M&T Bank bought Wilmington Trust, and Capital One bought ING Direct USA. In Europe, ING, the Dutch conglomerate, has split its banking and insurance divisions with a view to selling the latter by 2013, and in the past few years it has sold a number of its overseas businesses. In India, ICICI Bank acquired Bank of Rajasthan last year. Meanwhile, in China there is talk of a possible wave of consolidation between city commercial banks if property prices fall and large borrowers default on their loans.

Putting customers at the centre of everything

Customer centricity is the favorite buzz phrase, as bankers strive "to improve the customer experience" and "put customers at the centre of everything we do." *The World Retail Banking Report 2011* – published by European Financial Management and Marketing Association (EFMA), the Italian bank UniCredit and consultants Capgemini – summed up the challenge of becoming truly customer centric. "In the aftermath of the financial crisis, retail banks around the globe are struggling to make a positive impression on customers. Differentiating on price and product innovation is becoming increasingly difficult, and firms face the added complications of changing customer preferences and increasingly stringent regulations."

The report stated that "delivering a positive customer experience is one of the few levers banks can use to stand out in today's market. Other approaches that banks have relied on in the past to differentiate themselves – low prices and innovative products in particular – are losing their ability to provide an edge.

Customer centricity is a major issue for investment banks too. Accenture's Top 10 Challenges for Investment Banks, 2011 contains four challenges that fall into the "Driving the client agenda" category, namely refocusing on client needs, maximizing client profitability, taking sustainability seriously and delivering valuable transformation.

On “refocusing on client needs,” Accenture says this: “Driven by shareholder demands and regulatory pressure, investment banks are going back to basics – shifting the emphasis from complex product innovation [and taking on risk through proprietary trading] towards increased client intimacy. The priority now is to better align service offerings with clients’ needs – a significant challenge for the majority of banks that have neglected client service-based investments in recent years.”

There are several ways for banks to become more customer centric. They include collecting more accurate and timely customer information, and managing it better; improving operational efficiency; providing a more attentive service; integrating multiple delivery channels; and bringing new products to market more rapidly.

Developing new products and delivery channels

Even though customers regard quality of service as the most important aspect of their banking experience, they also value relevant, competitively priced and innovative products, and effective delivery channels. The challenge for banks, therefore, is to keep abreast of developments in these two areas.

Despite the advent of ATMs, kiosks, plastic cards, telephone banking, online banking and now mobile banking, many customers still regard the branch as an important channel – even the most important channel – for interacting with their bank.

“The branch remains important to customers despite the growing availability of direct banking channels,” states the EFMA World Retail Banking Report 2011. “Customers increasingly view the branch as fulfilling an advisory role, though they still use the branch to carry out basic financial transactions. Product complexity and regulatory changes are pulling customers into the branch for more personalized service and advice.”

To ensure the branch continues to play an efficient and valued role in an overall retail delivery strategy will require changes in four areas: branch layout and design; technology; sales and service; and staff. Better branch layout can enhance the customer experience and lead to more cross-selling; technology can do the same, a good example being self-service kiosks where the screens offer products to customers; taking staff out from behind counters and putting them in the banking hall so they interact more directly with customers is another way of improving delivery and margins.

Effective delivery is essential in investment banking too. Servicing clients “increasingly means providing a seamless front-to-back and cross-product services,” says Accenture in its Top 10 Challenges for Investment Banks, 2011. Unfortunately, not all banks can facilitate this because sales teams “still view client service delivery as a discrete set of processes, rather than considering the end-to-end service propositions across all stages of the client life-cycle”. Client service delivery processes therefore need to be adaptable so that exceptions can be made to cater for high-value clients, while ensuring that other clients are still served efficiently.

Political interference and the burden of financial regulation

There is no doubt that banks are facing the biggest regulatory onslaught of all times, as governments and regulators try to curb what they see as excesses and defects in banks and in the financial system as a whole.

Bankers around the world understand the need for regulatory reform, but are concerned about overkill. Christian Clausen, Chief Executive of the Swedish bank Nordea, and President of the European Banking Federation (EBF), in an interview in *The Banker* said that one of his priorities at the EBF “is to ensure that the new wave of regulation on capital, liquidity, funding and so on strikes a balance between avoiding another banking crisis and not over-regulating to the extent that it hurts customers and the economy”.

2. The Need to Update Business Strategies

To meet the multitude of challenges they face, banks need to modernize their business strategies and operating models. This Section deals with new strategies, and Section 3 with new operating models.

We have identified eight modernization strategies:

- Reconsider the fundamental purpose and function of banking.
- Focus on businesses that generate good revenues and profits.
- Become more customer centric.
- Update products and delivery channels.
- Differentiate the bank from the competition.
- Adjust the risk appetite, and integrate finance with risk.
- Find new and affordable sources of capital and liquidity.
- Concentrate on business lines that are less regulated.

Reconsider the fundamental purpose and function of banking.

When reviewing any strategy, it is essential to start from first principles. For bank leaders this means reconsidering the fundamental purpose and function of banking, from the grass roots up. What should banks be for? That is the key question that needs to be asked, and answered.

The traditional role of banks is to facilitate and process transactions, take deposits, make loans, and generally support the efficient functioning of the economic system. Those roles still exist, of course, and some of them have taken on greater importance; but new roles have also emerged.

Among the long-standing roles that have moved rapidly up the value chain from a bank's perspective are current accounts (i.e. "checking accounts") and savings accounts, because of the liquidity they provide. The financial crisis demonstrated just how essential adequate liquidity is, and what happens to financial institutions when a ready supply of cash and highly liquid assets runs low.

Focus on businesses that generate good revenues and profits

Whatever the fundamental purpose and function of banking is, banks have to concentrate on businesses, products and services that create – or have the potential to create – strong and profitable income streams. Any challenge is easier to deal with if sales and margins are high. So which areas of banking are the ones to focus on in this respect? The truth is that all lines of business – retail, corporate and investment banking, Islamic finance, transaction services, wealth management, emerging markets, bancassurance, investment management or whatever – have within them highly successful segments.

In retail financial services, for example, digitally oriented, self-service delivery channels – online banking, mobile banking and payments, and ATMs – grab the headlines. Direct channels cost less to run than branches, are making more loans, gathering more deposits and “now perform a large percentage of the transaction processing that used to take place in the branch”, states the EFMA/UniCredit World Retail Banking Report 2011. “In addition, as channels become more integrated, they are increasingly capable of managing customer relationships in a way that used to occur exclusively in the branch.”

Mobile money has really taken off in the past few years in some countries, both in terms of mobile banking services linked to bank and credit card accounts, and mobile person-to-person (or person-to-company) payments conducted without a bank or credit card company being directly involved.

The traditional bank branch still fulfils an important function. Certainly, revenue growth is harder to achieve due to the migration of business to direct channels, and costs are higher. Yet there is a valuable, even if hard to quantify, benefit of having a high street presence that helps generate and maintain brand awareness.

As for corporate and investment banking, growth in conventional lending is still restricted because lenders have tightened up their credit risk management. Lenders are also setting aside more capital to match their risk-weighted loans to meet tougher regulatory requirements. Banks are therefore looking at other funding options for their corporate customers, such as trade finance, equity finance and corporate high-yield bonds.

And the rest

There are many other modernization strategies to consider: become more customer centric; update products and channels; differentiate the bank from the competition, not just terms of service, products and channels, but also in pricing, partnerships with intermediaries, brand and image; adjust the risk appetite and integrate risk with finance; find new and affordable sources of capital and liquidity; and concentrate on business lines that are less regulated.

Whichever strategies are devised and then adopted, it is essential that support for them is obtained from all stakeholders, not just the executives creating them. The next step is execution, the success of which will depend on effective operational policies and procedures. The organization’s operating models must therefore be reviewed and modernized if the new strategic goals are to have any chance of being achieved. This is dealt with in the next section.

3. The Need to Update Operating Models

Banks will have to change their operating models as a strategy and without an effective and relevant means of execution that will be sub-optimal or fail. Both front and back office need to be fit for purpose. Branches, contact centers, corporate banking offices, online banking portals – and the staff, processes and systems behind them – that worked well for one set of business objectives are unlikely to be fully suited to a new set. Similarly, back office functions – credit checking, research, analysis, marketing, human resources, finance and so on – that were designed to support yesterday’s business activities will not be entirely right for tomorrow’s.

Front and back office operations therefore need to be modernized to make them more relevant and effective, so banks will need to:

- Review all operational processes and IT systems and software.
- Simplify and integrate organizational structures.
- Improve business performance management.
- Enhance customer service.
- Increase the speed and effectiveness of product manufacture.
- Widen and deepen distribution channels.
- Re-evaluate outsourcing policies.
- Improve governance, risk management and regulatory compliance.
- Consider moving some business operations to less heavily regulated jurisdictions.

Banks have been using specific applications to address some of the above issues, but the costs of integrating and maintaining these applications is high and there is often no business benefit. The applications often require specialized skills and more than one support group to keep them functional and updated.

Review all operational processes and IT systems and software

We live in a digital age, but many processes are still carried out manually. This needs to change: as many processes as possible need to be automated and standardized, with straight-through-processing being the objective. Processes also need to be made more customer-centric and less product-centric. Identifying which operations are in need of modernization can be a lengthy task, but an analysis of complaints from the business lines and central function units about delays, errors and shortcomings will highlight which processes require immediate attention.

All business units need the right IT support, but expense is an inhibitor, and market and regulatory changes are additional complicating factors. Banks that have recently undergone mergers have particular problems in integrating disparate systems into one “ready-for-the-future” system. There are two key stages in IT modernization: the first is to integrate the legacy systems and software; the second

is to devise new IT architectures, buy in or create new software and embrace innovations such as cloud computing.

Simplify and integrate organizational structures

As banks evolve and grow, they do so as a group of separate business units and operating companies, with each unit or company collecting, analyzing and using their own data. This separate development leads to inefficiency. Organizational and management structures therefore need to be reviewed, simplified and integrated, because to do so will improve operational efficiency. This simplification process may involve selling or merging subsidiary companies, especially where a bank has grown through acquiring other banks.

Improve Business Performance Management

Business Performance Management (BPM) is a tried-and-tested methodology for managing and measuring the performance of executives. Its objective is to optimize the efficiency of business units, staff, finance, equipment and materials. It does this by collecting and analyzing data from various sources to improve business processes such as planning, forecasting and budgeting, and then measures any increase in efficiency using a set of key performance indicators (KPIs). As the late Peter Drucker, the management guru, once wrote: “If you can’t measure it, you can’t manage it”.

The problem is that many BPM frameworks have been in place for years. They have become hard-wired into technology solutions, which limits their flexibility to respond to changing expectations. Banks therefore need to review and improve their BPM frameworks as part of their modernization project and separate their processes from the application codes. This will make the frameworks more relevant to the business, and help banks increase their competitiveness and reduce their operating costs.

Enhance customer service

Providing the best possible customer service is an obvious component of any strategy, in all banking sectors – retail, investment, corporate, wealth management and so on – but the mechanics of how that is actually achieved are not always so obvious. For Craig Donaldson, CEO of Metro Bank, the new British retail bank, it is obvious: if you are a retail banker you run your bank as if it were a shop.

“Consumers want to be able to shop when, where and how they choose: in store, by phone or online; from early till late; seven days a week,” writes Mr. Donaldson in *The Banker* magazine’s *How to Run a Bank 2011*. “Retail evolved to give customers what they want. Banks, with few exceptions, have not.” Mr. Donaldson believes Metro Bank is an exception that proves the rule as its branches, which it calls “stores”, are open for long hours, every day of the week.

Investment banks also need to consider the overall client experience, across all aspects of service delivery and all stages of the client lifecycle – sales, service and relationship management. According to Accenture’s *Top 10 Challenges for Investment Banks 2011*, information is key. “Rich client management information is required at every stage of the client lifecycle, and at every stage of the sales

process,” write the authors. A “single view of the customer” is the goal to aim for across all lines of business. When a bank has such a view, it is able to offer better service and relationship-based pricing that takes account of the customer’s overall value to the bank.

Widen and deepen distribution channels

When new delivery channels were created to complement branches – first ATMs, then telephone banking, online banking, self-service kiosks and mobile banking – many believed that branches were in terminal decline around the world. Four or five years ago that decline was largely halted, and in many cases reversed, as banks realized the value of face-to-face contact and a high profile brand presence. Today, the typical delivery model is multi-channel. All channels are valued, and used as part of an integrated distribution strategy.

This approach is not without its operational difficulties, as the EFMA/UniCredit World Retail Banking Report 2011 notes. “The multi-product, multi-channel environment of retail banks today presents a number of challenges,” it states. “The first is an unfocused approach to delivering products and services to the market. Banks can easily fall into the ‘3E trap’ of trying to be Everything to Everyone, Everywhere. Another challenge is the difficulty of integrating channels so that customers can enjoy a seamless experience as they move from channel to channel.”

These challenges can be overcome, though, if the channels incorporate customer segmentation and profiling, so that the right product is directed to the right customer through the right channel.

Re-evaluate outsourcing policies

Many organizations come to realize that to improve operational effectiveness and efficiency they should no longer keep certain operations in-house. Instead, they should give non-core functions and business processes to outsourced service providers (OSPs) who guarantee to do a better job, improve production and do it at a lower cost. Outsourcing has been a fact of corporate life for decades, but the financial crisis, and the weaknesses it revealed in banking operations, has added yet another reason to outsource. However, there are also strong arguments against outsourcing – with unemployment on the rise in most developed countries, banks are under intense pressure to keep jobs in-house or at least onshore in their home countries.

Consider moving some business operations to less heavily regulated jurisdictions.

A number of banks in the US and Europe are thinking of moving some of their business operations to less regulated countries. Timothy Geithner, the US Treasury Secretary has recognized the seriousness of this threat. In June 2011 he warned regulators in other countries against undercutting US financial regulations, according to a report in the Financial Times. He said it was essential for other jurisdictions to fall into line with the US in imposing tough restrictions on over-the-counter derivatives trading, rather than lure banks with softer rules.

“Regulatory arbitrage” between countries – and between financial sectors – is common. Oswald Grubel, Chairman of UBS, told the Financial Times recently that when Basel III comes into effect the

UK and Switzerland are likely to set higher capital requirements than elsewhere which could cause investment bankers to move to other countries, probably Asia and the US. There has also been speculation that HSBC, Britain's biggest bank, is planning to transfer its headquarters from London to Hong Kong because of increased costs and regulation.

Although such moves would be costly and disruptive – and damage relations with governments, regulators and some customers – they are being considered in some quarters.

4. The Technology Implications of Bank Modernization

We have described the main challenges facing banks today. We have discussed how and why, in order to meet those challenges, banks have to modernize their business strategies and operating models. We will now explore the technology implications of that modernization imperative, in particular how banks must review their software and IT architecture, and update it where necessary, so that it can be an enabler of the modernization program.

Much of the financial services software and hardware discussed in this section has been around for some years, but new iterations are constantly being developed, entirely new applications launched, and new hardware designed – so banks need to ensure that they are as up to date as possible. Legacy applications and systems still work, of course, and therefore have their place, but ultimately they need to be phased out and replaced with the latest applications and systems if bank modernization programs are to have any real chance of success.

Many banks still have their products, channels and lines of business in silos, or they are only partially integrated. Non-integrated systems prevent them from having a critical enterprise-wide view and cripple organization-wide efforts to improve customer experience; nor do not allow banks to adequately monitor operational activities.

Banks need to introduce applications that are service-oriented and standards based. Service-oriented applications are easier to integrate with other applications. Standards define how applications and the underlying technology work and operate with each other. Proprietary technology, by contrast, locks the purchaser into a particular vendor and product. It also increases the cost of introducing new systems, integrating them into existing applications and maintaining them.

In this section we deal with five areas of banking operations where it is essential for banks to review their technology assets to ensure they are up to date and fit for purpose:

- Attracting and engaging customers
- Managing risk
- Transforming business operations
- Optimizing operational efficiency
- Simplifying IT infrastructure

Attracting and engaging customers

Being truly customer centric – putting customers at the centre of everything banks do, and improving the customer experience – was identified in Section 2 as a key business strategy to develop, as was reviewing the fundamental purpose of banking, and improving delivery channels. We then showed in Section 3 what operating model changes were needed to ensure that those customer strategies would be effective; for example, reviewing operational processes, enhancing customer service and adopting a multiple distribution channel approach.

So what role does software have in facilitating the modernization of operations that will help banks attract and engage customers? We have identified five software categories:

- Core banking, for managing customer accounts and their financial transactions.
- Direct banking, for providing internet and mobile banking.
- Data management, for collecting, managing, storing and retrieving data, including scanned paper documents.
- Business intelligence and analytics, for analyzing data, often in real-time, to deliver intuitive, role-based intelligence throughout the organization for fast decision-making. With the power of analytics, banks can understand and manage their risk-adjusted performance objectives and lower the costs of regulatory compliance; they can also analyze profitability across all levels of the organizations.
- Customer relationship management (CRM), for managing relationships across all channels and customer touch-points. CRM software is designed to increase customer satisfaction and retention, increase sales and expand relationships by providing a high quality of service. It can be installed on bank systems, or accessed “on demand” from cloud computers.

We shall elaborate on two of these: core banking and CRM.

Core banking

At the heart of customer relationships is core banking software, which manages customer accounts and financial transactions. Core retail banking software holds basic customer data – name, address, age; maintains links between accounts and customers, ideally providing a single view of the customer; provides routine maintenance activities, such as opening and closing accounts, processing deposits and withdrawals, calculating interest, processing direct debits, and making and receiving payments; and runs the bank’s general ledger showing, among other things, the cost of staff and premises, income and customers balances.

The legacy systems that most banks use are typically account-centric, with customers’ individual accounts grouped by product type, instead of customer-centric, grouped by customer. Account-centric systems provide a fragmented, incomplete and often inaccurate portrait of customer accounts. These systems prevent banks from getting a complete, 360-degree view of the customer, which is essential for up-sell and cross-sell success.

By contrast, customer-centric systems enable banks to strategically target products and services to each individual based on what he has, what he needs and what he lacks. These decades-old legacy core systems are inflexible, and each time a bank wants to launch a new product, they must “hard-code” the system, which can take 12 months or more.

Such closed systems render product development and management activities cumbersome and slow. These outdated systems prevent financial institutions from offering targeted and differentiated products on a timely basis. In a day and age when it is essential for companies to quickly launch targeted products in order to remain competitive, outdated systems hold banks back. Banks that cannot swiftly bring the right product and service to market will be left behind in today’s highly

competitive business environment. Banks need agile technology that will enable them to bring products to market quickly.

Core banking software can be tailored to suit any banking segment: direct, Islamic, wholesale, treasury, commercial and private banking. It also offers a much wider range of features and benefits than earlier versions, so it is important that banks check whether their software provides or can do the following:

- Straight-through-processing – 24 hours a day, seven days a week – of large transaction volumes to reduce cost and increase speed and efficiency.
- Online validations.
- Automated exceptions handling to reduce cost and increase efficiency.
- A highly secure data management system that complies with regulatory requirements and can be integrated easily with third-party solutions.
- An application architecture that uses Business Process Execution Language (BPEL) for business processes, is service-oriented (i.e. Service Oriented Architecture) and is web-services based.
- Works on multiple delivery channels – including branches, ATMs, point-of-sale terminals, call centers, mobiles and internet banking.
- An XML web-based user interface with context-sensitive help.
- Can be easily integrated with existing systems using flexible Java Platform, Enterprise Edition technology.
- Operational risk controls, including limits, collateral and non-performing assets.

Customer relationship management

When CRM applications were first introduced in the 1990s, many failed to live up to expectations. Software developers and banks have since collaborated closely to iron out the problems, to make today's offerings much more relevant, reliable and useful.

If a bank's customer management software does not offer the features and benefits listed below, it is time to renew it:

- Manage relationships across all channels and, ideally, all business units: for example, branches, contact centers and online, and across retail banking, wealth management, SME and other units.
- Increase sales of products and services to existing customers through cross-selling and up-selling.
- Assist in customer acquisition
- Maximize customer profitability.
- Retain customers.
- Be easily integrated with other applications and databases.
- Follow standard industry processes.

- Be available in two formats: “on-premise”, installed on the bank’s systems; and “on-demand”, whereby the software is installed on cloud computers and accessed through a web-browser.

Managing risk

Managing risk enterprise-wide, adjusting risk appetites, finding new and affordable sources of capital and liquidity, concentrating on business lines or products that are less regulated, and more closely aligning risk management with the finance function were identified in Section 2 as important business strategies to pursue.

We then showed in Section 3 what changes to operating policies and procedures were needed to execute these risk management strategies: in other words, banks have to improve their GRC (governance, risk management and regulatory compliance) models, and that requires better data management and analysis to enable informed and rapid decision-making. Banks might even consider moving business operations to countries which have lighter-touch regulation.

So what software is available to help banks manage risk more effectively? There is a wide range, for example:

- Risk management software, for managing all areas of risk (especially credit, market, operational, liquidity, business and reputation risk) right across the enterprise. Specialist applications exist for calculating economic capital and managing all Basel II requirements (including the Internal Capital Adequacy Assessment Process).
- Regulatory compliance applications, for ensuring banks comply with all applicable laws, financial regulations, industry standards and internal rules relating not just to risk and capital management regulation, but all financial regulation.
- Enterprise Performance Management (EPM) applications, for managing mission-critical processes and integrating strategy, planning and execution in all areas of risk management.
- Business intelligence applications, for enterprise reporting, ad hoc query and analysis, dashboards and scorecards.

We shall go into more detail on risk management and regulatory compliance applications.

Risk management

Today’s banks need to quantify and measure risks of all types across the entire enterprise, ensuring that risk categories and business units are not contained in separate silos but are integrated so there are no gaps in the framework. They also need to ensure there is close operational synergy between the risk and finance functions.

Enterprise risk management solutions enable a bank to accurately calculate risk-based pricing of exposures; assess risk for a portfolio across multiple parameters; set key performance indicators (KPI) to reflect risk-adjusted returns; provide risk and performance metrics to rating agencies and shareholders; help ensure compliance through a transparent and complete audit trail for supervisors;

and eliminate the need for expensive customized programming and time-consuming application maintenance.

Risk management applications are more numerous, more sophisticated, faster and contain more features compared with just a few years ago. They also tend to be part of a broader GRC (Governance, Risk and Compliance) framework. It is therefore important for the chief risk officer and his team to assess whether the risk management software and systems they are currently using are still fit for purpose.

For example, under Pillar 2 of Basel II banks must prove to supervisors that they have enough capital to support the risks in their business, and they must do this by conducting annually an Individual Capital Adequacy Assessment Process (ICAAP), and filing a report with the supervisor. ICAAP software must therefore be capable of:

- Risk identification – preparing a list of all material risks, analyzing interviews with all relevant staff, and assessing the likelihood of risks occurring.
- Capital assessment – calculating how much capital a risk would absorb were it to materialize.
- Forward capital planning – assessing how the capital required might change in line with a bank’s business plans and how it might respond to these changes. Larger, more complex institutions must also conduct stress testing and scenario analysis.
- Summarizing – providing a summary of the ranges of risks identified and an overall view of the amount of internal capital the firm needs to hold.

Regulatory compliance

Compliance software provides enhanced visibility for compliance, risk, legal, internal audit, finance, business line managers and others so they can monitor the organization’s adherence to all applicable laws, regulations, standards and internal rules, relating not just to risk but all banking activities. Such software should also be integrated within a wider GRC framework.

Examples of current and proposed regulations that such software can help manage include:

- Regulation E: Electronic Fund Transfers 12 CFR 205. “Reg E” is a US regulation issued by the Board of Governors of the Federal Reserve Systems that sets out the rights, liabilities and responsibilities of participants – consumers and financial institutions – in electronic fund transfer services conducted through ATMs, telephones, point-of-sale terminals in shops, online banking and other channels.
- The ring-fencing of the retail banking operations from the wholesale and investment banking operations of UK banks, as recommended by the Independent Commission on Banking and which is being considered by the British government.
- The Basel III framework for improving capital and liquidity standards in banks worldwide which comes into effect in 2013.

Technology solutions are particularly helpful for complying with financial regulations that are difficult to comply with and carry harsh penalties for non-compliance – such as those relating to capital markets trading, know-your-customer, anti-money laundering, broker compliance, and fraud detection and prevention. Non-compliance if discovered by regulators or law officers can result in stiff penalties and reputational damage, quite apart from any commercial loss that may result.

Fraud and other financial crimes cost the global financial services industry an estimated \$20bn in 2008. Today's banks must apply new and innovative measures to prevent and detect fraud, not only cut down on these losses, but also to satisfy the authorities that they are not encouraging fraudsters. These measures can only be carried out effectively if they have fraud management software with a wide range of features, including:

- Real-time detection and correlation capabilities.
- Sophisticated behavior detection.
- Analytics.
- Case management.

In its 2011 anti-money laundering vendor report, Gartner recommends that banks choose vendors that have a unified technology platform and data structure. Key findings from the report include the following:

- AML activities of banks are moving toward a strategic, quantitative process-performance-based approach, evolving beyond the tactical, audit, control and regulatory reporting.
- Latency and poor filtering capabilities put banks at risk of not meeting customer expectations and also incurring sanctions from regulators for failing to detect threats.
- Many vendors lack the integrated process and data for timely risk-based analysis and decision making
- Many vendors lack the ability to scale to the enterprise level without performance issues
- Banks should select vendors that offer enterprise risk platforms, have proven scale, a unified technology platform and data structure, and which offer transparency and configurability.

Transforming business operations

Transforming and standardizing business processes is, of course, central to any operating model modernization project. All manual processes that remain should be reviewed and automated if possible; and all automated processes should be reviewed and standardized. Straight-through processing should be the objective where achievable.

There are three broad categories of software that can help banks transform their operations:

- Core banking, for managing customer accounts and their financial transactions.
- Customer service, for making it possible for to provide a seamless service.

- Revenue management and billing, for improving the billing of corporate and retail customers and avoiding “revenue leakage” (i.e. failing to bill accurately, on time, or at all, for services provided).

We have already outlined the central role that core banking software plays in banking operations and the importance of using the latest versions (see the section “Attract and engage customers”), so we shall elaborate on the other two: customer service and revenue management and billing.

Customer service

Contact centre and branch staff can do a more efficient job if they use the latest customer service software, as it will make them an integral part of the bank’s total sales, marketing and service delivery strategy. It will help them to handle service, support and sales seamlessly across all communications channels, thereby improving service delivery while lowering costs.

The latest contact centre software should include the following features:

- A 360-degree view of the customer relationship to enable more relevant and targeted sales offers and improved customer experiences.
- Computer telephony integration (CTI) to identify customers before conversations begin and provide instant customer record screens to agents.
- A customer dashboard to present a comprehensive view of critical customer information.
- A contact management module to provide complete histories of all customer interactions.
- A household management module to provide complete profiles of economically affiliated individuals.
- A contextual search feature to retrieve information from anywhere in the application.
- Workflow management, to route and track tasks throughout their life cycles.
- Integrated email management to respond automatically to customer emails without staff intervention
- Contact centre and service analytics to provide pre-built dashboards and ad hoc analysis that are personalized, relevant, and easy to use.
- Similarly, the best branch teller software should offer some of the above, where relevant, plus:
 - Comprehensive branch teller functionality to provide transactional functionality, operational control and actionable customer information, including a complete set of teller and supervisor transactions and a full set of support services
 - Streamlined transaction processing via an easy-to-use interface with keyboard short cuts and accelerator keys, pre-built integration with peripherals and devices and pre-filled, authenticated, and automatic transaction processing where appropriate.
 - Improved operational efficiencies - driven by centralizing business processes and operational information that traditionally exists in each branch server, such as electronic journal, cash management, user administration and fee management.

- Targeted and effective teller referrals, to maximize cross-selling opportunities through targeted actionable offers and alerts supporting intelligent referral-follow-up routed in real-time to a branch sales agent.
- Actionable business intelligence, through campaign and sales effectiveness reports, analysis, predictive modeling and alerts
- Advanced J2EE technology to create open standards lowering costs and improving IT responsiveness.

Revenue management and billing

“Revenue leakage” is a persistent problem that is hard to fix. It is caused by a bank’s failure to correctly charge customers, either by quoting a too-low price in the first place, by invoicing for a lower amount once the job is done, by failing to chase outstanding invoices, or by failing to invoice at all. Those leakage points need to be identified, quantified and stopped. Software exists to do that.

A best-in-class application will include tools that provide a robust platform with the flexibility necessary to serve as an enterprise billing application for services across lines of business. With these tools a bank will be able to: increase revenue and cash flow, create auditable consolidated customer bills across multiple lines of business, support complex pricing agreements, manage high-volume billing cycles, implement rules-based collections, automate the investigation of billing variances, perform quick bill reconciliation and reduce manual processing, and offer multilingual and multicurrency support.

The application should also be scalable, so that new products and services can be added to customer contracts, high volumes of invoices can be processed for major customers and marketing campaigns can be integrated with billing.

The potential benefits are numerous:

- Reduced revenue leakage: banks should be able to find unbilled revenue, bill according to contract terms, eliminate billing errors, and assess late fees.
- Increased account penetration: the bank will be able to cross and up-sell new products with competitive pricing.
- Additional customer revenue: it will allow the quick introduction of new products and repricing of existing products.
- Lower operating expenses: billing can be consolidated into a single enterprise class billing solution.
- Enhanced customer satisfaction, because customers have access to their account balances and transaction histories.

Optimizing operational efficiency

Once business operations have been updated and standardized, and the latest applications deployed, operational efficiency needs to be looked at and improved where possible. Scope for improvement

should be sought in all areas, including enterprise resource planning, financial planning, customer relationship management, supply chain management and human resources. Greater efficiency will improve employee productivity and reduce costs.

Supply chain management

Physical supply chains with suppliers and distributors change over time and become stressed during periods of price volatility, fluctuating demand and slow economic growth. With the right supply chain management software, however, companies can build and operate world class value chains to cope with these stresses and strains and generate profitable growth.

Such software will integrate and automate all key supply chain processes, from design, planning and procurement, through to manufacturing and delivery. It will allow them to anticipate market requirements and risks, adapt and innovate to respond to volatile market conditions and align operations across international networks. A unified data model will provide a single, accurate view of a bank's entire supply chain and enable them to implement lean, demand-driven principle and manage complex global supply chains.

Human resources management

All people-related activities – hiring, salaries, communications, training and development, redundancy and dismissal – need to be managed, preferably from a central hub. Sophisticated human resources management software will be able to handle all of this. It will:

- Automate key processes and workflows to speed up recruitment, budgeting, pay, performance, training and more.
- Provide a single view of staff through a global HR database, including addresses, banking details and other information.
- Manage remuneration, allowing the bank to attract and retain the right people with the right combination of salary and benefits.
- Locate and manage talent globally. This will include hiring and training the most talented people available.
- Integrate business intelligence with HR management, thereby aligning the workforce with corporate objectives.

Simplifying IT infrastructure

Information technology plays a role in virtually every aspect of banking operations. But it is inherently complex, and if it is allowed to get too complicated, its efficiency and effectiveness is likely to suffer, with serious knock-on effects for operational and business efficiency.

The problems are many and varied: too many diverse systems and applications acquired over time, often as a result of mergers and acquisitions; inefficient legacy applications and systems that possibly

should have been retired years previously; and rigid infrastructures. All of this leads to reduced system performance, rising costs and higher error rates.

IT complexity therefore needs to be carefully managed by the chief information officer and his team, in terms of both infrastructure and applications. Simplifying the infrastructure, for example, will necessitate reviewing the following:

- Service-oriented architecture (SOA), which links disparate applications across many different business lines and functions, thereby centralizing and improving process efficiency.
- Middleware, which is also used to integrate disparate applications across the organization.
- Database machines, which provide extreme performance for both data storage and online transaction processing applications.
- Servers and storage systems, which deliver mission-critical, process performance and storage capabilities.
- Cloud computing, which delivers information and services over the internet from an external provider's hardware and software.

Service-Oriented Architecture (SOA)

Integrated applications and centralized processing are essential for modern, efficient banking. To achieve these technological and operational goals, SOA is essential. SOA will interoperate with all parts of the IT architecture to integrate all business applications, moving them on to a common service bus and a common workflow engine.

The key benefits will include:

- Integrating and standardizing all applications in a short space of time.
- Centralizing and improving process efficiency
- Reducing costs.
- Increasing scalability.
- Improving visibility.
- Enhancing security.

Database machines

Banks store massive amounts of data, much of which needs to be accessed quickly, especially for processing online transactions. Database machines – computer systems specially designed for database access, and which are much faster than mainframes – are therefore essential.

The best database machines are a complete package of servers, storage, networking and software that are scalable and secure. They reduce costs through consolidation, they manage more data on multiple

compression tiers, they improve the performance of all applications, and they help executives make better decisions in real time.

Servers and storage systems

Legacy servers and storage systems are not able to provide the same functionality and speed as modern ones. The CIO needs to consider the benefits of today's servers: they are engineered to deliver record-breaking performance, simplified management and cost-saving efficiencies. The best ones are built on open standards that work with a bank's existing infrastructure, include virtualization capabilities, and have integrated SSD Flash storage.

The benefits of modern storage systems should also be explored: they can store huge volumes of data, are easily accessible and have a high levels data security. They have high transaction rates, lower wait times and more throughput. They feature automated caching, data migration and access across multiple tiers. And they have Flash accelerated storage and optimized support for virtualized server environments.

Cloud computing

Instead of using their own hardware and software installed on their own premises or data centers, more organizations are turning to "the cloud" – hardware and software provided by specialist providers over the internet and accessed through web browsers. The cloud can replace many in-house systems and applications, such as those used for enterprise resource planning (ERP) which integrate internal and external management information in key areas – such as manufacturing, sales, transport and finance – across the entire organization.

Cloud computing has its disadvantages, such as a lower level of security, but this can be remedied by opting for "private" rather than "public" cloud solutions. Other possible disadvantages are loss of control over data and software, and higher costs if the services are not used as much as anticipated.

But the benefits of cloud computing usually outweigh the disadvantages: a reduction in the need for software and additional computing power, thus saving on capital investment and reducing IT complexity; no need to maintain or update hardware, software or services – the provider does this; the services provided are generally better, faster, more flexible, more scalable and more reliable because they are provided by large, dedicated organizations which are good at what they do; services can be accessed from any location as they are not stored on the user's servers but on internet servers; and cost efficiency, because of the multi-use of hardware, software and services.

5. Call to Action: Modernize or Fail

In this white paper we started by outlining the challenges that face banks today. They range from the need to generate strong revenues and healthy profits and to expand into emerging markets, though to becoming more customer centric and dealing with the growing regulatory burden.

We went on to say that, in order to meet these challenges, banks need to modernize their business strategies and operating models. If they do not modernize, they are likely to fail – fail to give customers what they want, fail to generate adequate profits, and fail to deliver shareholder value. Writing a new strategy involves, among other things, reviewing the fundamental purpose and function of banking, focusing on businesses that generate the best revenues and profits, and discovering how to differentiate themselves from their competitors.

Modernizing operations includes reviewing all processes and IT systems and software, simplifying organizational structures, enhancing customer service, increasing the speed and effectiveness of product manufacture, and improving governance, risk management and regulatory compliance.

We then explored the technology implications of all of the above – in particular the important role that software and IT architecture plays in any bank modernization program. Legacy applications and systems may still work, but they will not be as effective as the latest versions and models when it comes to executing new strategies and creating new operating structures.

The point we are making, therefore, is that when banks embark on any kind of modernization program, they need to review their technology and make sure it is fit for purpose. Where it is not fit for purpose, it needs to be re-purposed and upgraded. Where existing systems and applications are deemed to be still useful, and are left in place, their suitability and effectiveness must be monitored, regularly.

Organizations cannot undertake the IT aspects of a modernization program on their own. They need the support of world-class IT vendors offering industry-specific applications, middleware and SOA, and technology infrastructure and data storage. They may also need to call in consultants to advise on which vendors to choose, help implement the new technology when it is delivered, and integrate it with existing infrastructure and software.

There are many different possibilities available to banks in terms of new strategies and operating models. But a modernization program will only be truly successful if the technology implications are fully understood and best-in-breed applications and infrastructure are deployed.

Service-Oriented Architecture (SOA)

Integrated applications and centralized processing are essential for modern, efficient banking. To achieve these technological and operational goals, SOA is essential. SOA will interoperate with all parts of the IT architecture to integrate all business applications, moving them on to a common service bus and a common workflow engine.

Further Reading from Oracle

- <http://www.oracle.com/us/industries/financial-services/internal/aite-financial-crisis-impact-wp-165584.pdf>
- The Impact of the Financial Crisis on Core Systems Replacements
- <http://www.oracle.com/us/industries/financial-services/idc-ap772404u-wp-488545.pdf>
- A Platform Approach to Banking Transformation: You Can Have it All
- <http://www.oracle.com/go/?&Src=7053921&Act=48&pcode=WWFI10059546MPP080>
- The Banker MasterClass: Core System Modernization
- http://www.oracle.com/webapps/dialogue/ns/dlgwelcome.jsp?p_ext=Y&p_dlg_id=10854356&src=7247732&Act=20
- Discover How the Smartest Financial Services Firms Manage Their Projects



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Hardware and Software, Engineered to Work Together