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# When legacy is not enough.

Understanding the high stakes game of replacing a bank's core systems



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# A tipping point ?

These days, more and more banks are giving serious thought to replacing their core IT systems. Many banks have been avoiding the issue for decades by investing in quick fixes, narrow point solutions, and homegrown workarounds. But now, a large and growing number are deciding that maintaining this complex patchwork of legacy systems just isn't worth the trouble. It's too expensive. It's too risky. And most important – it's too difficult to keep pace with the rapidly changing needs of the banking business.

Meanwhile, technology advances and new applications have increased the potential benefits of system replacement, making the case for change more compelling than ever. In fact, many banks have reached a tipping point where the cost and risk of doing nothing outweighs the cost and risk of taking action. For them, the biggest obstacle is understanding what to do – and where to start.

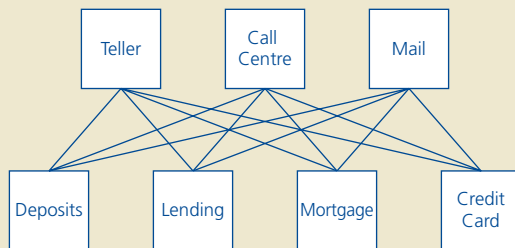
This report looks at the key challenges of replacing a bank's core systems and offers practical advice to help you start moving in the right direction.

# How did we get here?

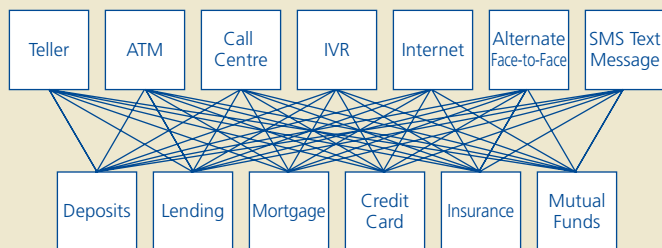
Many of the core banking systems currently in use at large banks were originally developed and implemented in the 1970s and 1980s. These systems provided foundational capabilities – and did so very effectively. However, as bank strategies evolved and products and channels proliferated, these relatively closed, monolithic applications were saddled with layer upon layer of additional functionality.

## Demands on Core Banking Systems have increased over time

### Simple Product/Channel Core System Configuration 1970



### Complex Product/Channel Core System Configuration 2008



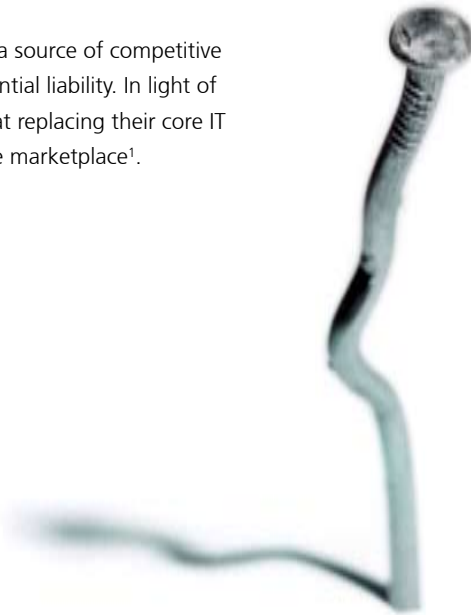
\*Alternate face-to-face includes mobile relationship managers, franchised branches.

# External pressures

The need for core system replacement is also being driven by a number of market forces and external pressures, including:

- **Increased regulatory requirements:** In recent years, financial institutions have experienced a significant increase in regulatory requirements (e.g., SOX, Basel, etc.). To help ensure the integrity of their regulatory reporting, banks must confirm that their systems are properly integrated.
- **Increased competition:** Banks face increasing pressure to bring new functionality and products/services to market quickly. Existing IT systems hinder product development and time-to-market because every new product requires custom coding and significant integration effort.
- **Increased customer demands:** Customers want to purchase products and view accounts across applications, channels, and geographies. The challenge of integrating ancillary solutions with today's heavily customised core systems can hamper a bank's ability to provide customers with a unified view of their financial information.

Proprietary applications, once viewed as a source of competitive advantage, have been exposed as a potential liability. In light of these challenges, many banks believe that replacing their core IT systems can give them a new edge in the marketplace<sup>1</sup>.



<sup>1</sup> "FDIC Quarterly Banking Profile", Federal Deposit Insurance Company, 2007

# Internal pressures

While technology has historically been used to enable productivity improvements, over the past decade this trend has stalled in many areas. Today's unwieldy legacy platforms are quickly becoming an inhibitor of growth and flexibility. Core banking systems are inflexible, complex, and expensive to maintain, to the point that a small change in one application often causes mysterious problems to pop up in other systems. Internal pressures driving banks to replace their core systems include:

- **Need for greater system flexibility:** Expansion into new geographies and new product lines requires a platform that is flexible and easily extensible. Legacy core systems are often heavily customised, which can severely limit a bank's ability to execute its strategies.
- **Outdated and costly systems and processes:** Many banks are still running on technology developed in the 1970s and 1980s. Front and back office staff often face redundant tasks and inefficiencies, including excessive processing, re-keying of information, and slow system response times.
- **Need for improved system stability:** Legacy systems are performing poorly in response to today's complex demands, which include expanded data volumes and proliferation of product lines and channels. In some cases, core system shutdowns have damaged reputations and incurred significant operational expenses.
- **Diminishing legacy technology skills:** Core banking systems are often poorly documented, forcing banks to rely on the knowledge and experience of a generation of workers who are nearing retirement.

To make matters worse, economies of scale have fallen short of expectations. In the 1980s and 1990s the banking industry saw considerable consolidation in many markets. In the U.S. for example, the number of banks and thrifts has decreased by 21% since 1997<sup>2</sup>. This consolidation was expected to improve economies of scale and productivity; however, the industry's efficiency ratio has shown only modest improvement. Similarly, compensation as a percent of total operating expenses continues to rise, with total employment in the U.S. growing by 24% in the last decade<sup>3</sup>. This wave of mergers and acquisitions forced retail banks to either manage or consolidate multiple banking platforms. At the time, many chose to avoid the time and expense of consolidation; however, in the years that followed many learned that maintaining and supporting a complex mix of systems is just as time-consuming and expensive as consolidation – if not more so. In fact, maintenance of core systems can represent 70-80% of all IT spending<sup>4</sup>.

<sup>2</sup> Ibid.

<sup>3</sup> "Core Banking - The Right Set Of Goals",  
The Banker, May 2006

<sup>4</sup> "Competitive Advantage",  
The Banker, May 2006



One size does not fit all





Recent technological advances have established packaged software solutions as a viable alternative to proprietary systems. Over the past several years, a number of new global and regional solutions have emerged and are being adopted by top tier banks such as Barclays, BNP Paribas and Citigroup.

Despite this trend, the decision to replace a bank's core IT systems remains a complex challenge that requires careful planning and consideration. Key issues include:

**Scope: Deciding how much to bite off**

**Deployment strategy: Build or buy? Big or small?**

**Package selection: Picking a solution**

**Business case: Looking beyond the numbers**

**Organisational readiness: Ready or not?**

This is not a one-size-fits-all exercise; decisions will vary from one bank to the next. Let's examine each of these issues in greater detail.

# One size does not fit all

## Scope: Deciding how much to bite off

### **Just what is a core banking system? The answer depends on whom you ask.**

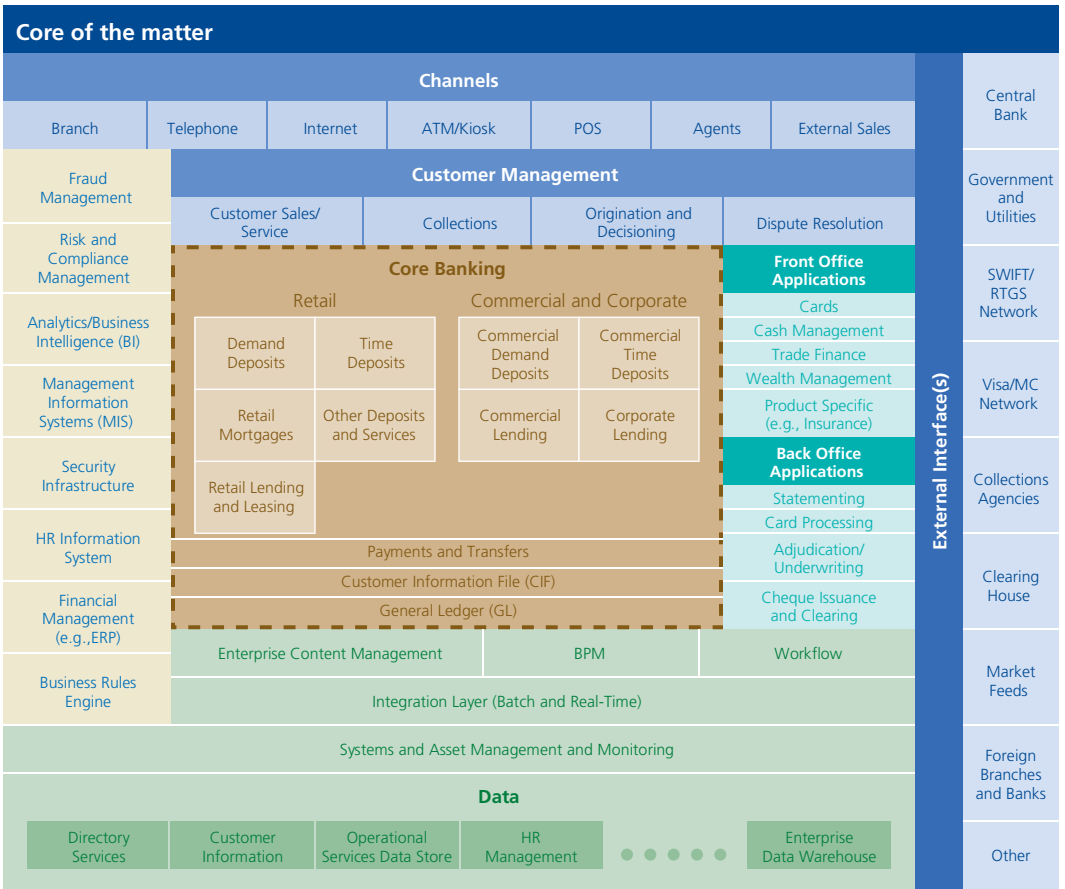
This seemingly simple question is complicated by a dizzying array of products and vendors in the market today. Many vendors describe their products almost entirely in terms of end-state benefits, dangling promises of real-time processing, service-oriented architectures, and “bank in a box” solutions that offer end-to-end integration. Similarly, leading banks that have upgraded their core systems issue press releases touting their implementation accomplishments – the number of products, countries, and users now enjoying the benefits of their new systems – without going into detail about what they actually changed.

As a result, the definition of core banking systems varies widely. Some banks only seek to refresh an ageing CIF (Customer Information File) or GL (General Ledger). Others require an end-to-end replacement within a particular function.

How you define “core banking systems” will drive the scope of your replacement initiative, and help set the right expectations with stakeholders, which is critical to success. The best way to start is by clearly identifying the business issues that need to be addressed. These will determine what areas of functionality must be included as part of the solution, which in turn will define the overall scope.

With this in mind, this report has used a functional lens to define core banking systems within the context of the broader banking infrastructure. As shown in the figure on the adjacent page, the definition includes the components that help a financial institution effectively develop, process, and manage financial products and services, while maintaining a book of record for transactional information. These modules include deposit account systems, loan processing systems, payments and transfers systems, client databases, and the general ledger.

The scope of a core system replacement strategy can encompass one or more of these modules depending on a bank’s priorities and appetite for risk. As noted earlier, one of the keys to success is to clearly communicate the project scope in business and technical terms to each of the many stakeholders that will be involved along the way.



# One size does not fit all

## Deployment strategy: Build or buy? Big or small?

The decision of how to deploy new core systems across the bank has two dimensions: “build vs. buy” and “big bang vs. small steps”. While a significant amount of development in the banking industry continues to be done in-house, there is a clear and steady trend toward vendor-built solutions. As the industry continues to shift its focus towards customer-centric strategies, banks have started to change the way they think about systems. Existing systems, often based on proprietary, outdated technology, are proving to be significant barriers to executing customer-focused strategies. Meanwhile, the vendor landscape has fundamentally changed. Third-party solutions used to be the exclusive domain of smaller banks that lacked the resources to develop in-house. However, vendors have spent the last several years battle-testing their solutions with increasingly large and complex deployments, and climbing the learning curve to work with top tier banks. This trend, combined with hardware advances and new innovations such as service-oriented architecture, has enabled vendors to offer more robust and scalable off-the-shelf functionality with less customisation than before. The proportion of core banking solutions developed in-house has dropped from 91% in 1999 to 75% in 2004, with a number of leading institutions opting for packaged applications as a way to save time and money<sup>5</sup>.

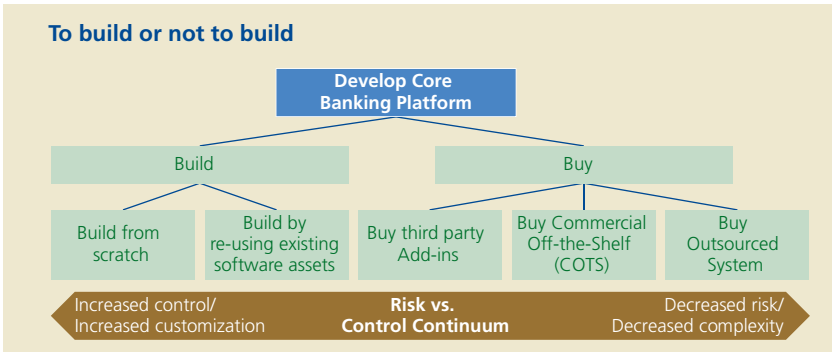
According to many Deloitte member firm clients, third-party solutions can help alleviate the following constraints associated with applications developed in-house:

- **Lack of documentation:** Over thirty years of system enhancements and upgrades – coupled with inadequate process documentation – have amplified the risks involved with in-house development.
- **Lack of resources:** Many banks do not have the time or resources required to develop the systems themselves.
- **Lack of in-house expertise:** Although most banks develop software in-house, few have the competencies or experience to tackle the large and complex task of core system development. A specialised vendor often can do the job better, faster, and cheaper.
- **Solutions that are not scalable or global:** Vendors have begun developing solutions targeted at larger banks that require global reach and extensive scalability.

The build vs. buy discussion can be further broken out into five distinct approaches, as shown in the figure below. Each of these approaches reflects a different degree of reliance on a third-party. At one end of the continuum, building core systems from scratch (Option 1) requires a significant commitment of financial and human resources on the part of the bank. At the other extreme, a fully outsourced approach (Option 5) may only be feasible for smaller banks because the solutions are still relatively immature and a proven shared services outsourcing platform has not yet emerged. Indeed, most banks are focusing on the middle ground, building on existing software assets while assessing third-party alternatives customised to their individual needs.

Each of these options presents trade-offs. “Build” options allow for increased customisation and control, albeit at significant cost and risk. “Buy” options let you share development costs and implementation risk with a solution provider, but with less control and customisation.

The second dimension of a deployment strategy relates to execution – will you deploy the core systems in stages, or go for a “big bang”? The big bang approach involves deploying the selected systems across all lines of business, geographies and products in a single wave. This is appealing because it minimises the need for costly interim solutions such as data interfaces and parallel operation of old and new systems. On the other hand, the risks are much higher, making this approach advisable only for smaller banks with less established legacy applications. Although the right answer varies from one bank to the next, most banks are opting for a modular or phased approach, staging the implementation either by functionality, customer segment, region, line of business, or middleware component.



# One size does not fit all

## Package selection: Picking a solution

If you choose to buy rather than build, it's obviously important to pick the right package. Although the vendor landscape has seen significant consolidation in recent years, new solutions continue to crowd the market. Many of these solutions offer big promises but have relatively short track records. Sorting through the apples and oranges of product roadmaps, architectures, and functionality can be quite a challenge.

Flexibility and scalability to accommodate future growth should be a basic requirement for new core systems. If you merely switch to a bigger box with more horsepower, you are likely to find yourself facing the same problems a few years down the road. Processing power and back-end integration are also key. Don't be fooled by front-end bells and whistles; although they might be appealing to users, fancy front-end features are only one piece of the puzzle.

When all is said and done, the primary job for core systems is to execute mission-critical transactions. Critical capabilities include: transaction throughput, interest and fee calculation, parameterised product setup, transaction clearing, and interfacing with existing systems and transaction sources. Of course, core systems replacement is also being driven by the need for a more flexible architecture that can keep pace with rapidly changing regulatory and compliance mandates. For example, some European banks are leveraging their core systems to support the mandate for Single European Payments Area; others are using their systems to manage Anti-Money Laundering regulations through an integrated view of customer accounts and transaction.

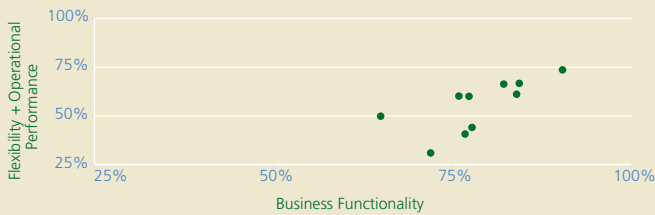
When you select a package vendor, you are entering into a long-term relationship. To make the right decision, establish selection criteria that balance business requirements with technical requirements, and assess each bid both in qualitative and quantitative terms. Your selection criteria provide the basis for an objective evaluation and comparison – a common playing field to rank vendor solutions against one another. The figure on the adjacent page provides a starting point to help you develop criteria that reflects the unique needs of your business. It also includes a sample analysis that shows how the criteria can be applied.

## Criteria for Vendor Selection

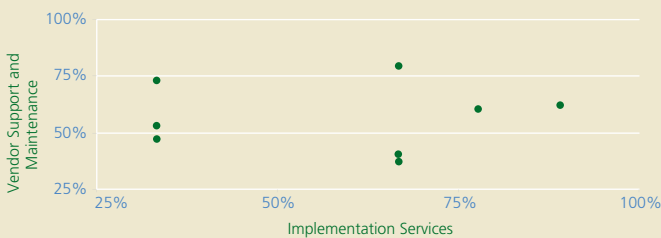
Criteria for Vendor Selection		
Functional Requirements	<b>Functionality</b>	Alignment of the solution with your bank's functional requirements, including current business processes and future growth objectives.
	<b>Flexibility</b>	Solution's ability to respond to changing market and regulatory conditions; technical architecture should limit proprietary integration methods and support data transformation for XML.
	<b>Viability</b>	Viability of the vendor as a strategic partner including the long-term health of the organisation.
	<b>Operational Performance</b>	Production performance of a vendor's solution in terms of scalability, resiliency, and real-time processing capabilities.
Ability to Execute	<b>Implementation Services</b>	A vendor's implementation track record and qualifications, including its project management capabilities, quality assurance programs and management/ documentation of project data.
	<b>Vendor Support and Maintenance</b>	Degree of vendor support and maintenance, including user training, technical support, service level agreements with prioritization procedures, and provision of fixes to repair faults.
	<b>Cost</b>	A solution's return on investment as measured by improved efficiency ratios, business process impact and strategic alignment.

### Sample Vendor Analysis

#### Functional Requirements



#### Ability to Execute



# One size does not fit all

## Organisational readiness: Ready or not?

Core system replacement is a high cost, high risk proposition that requires substantial time and effort. Delays and budget overruns are common, usually due to expanding project scope, changing requirements, and/or unexpected organisational resistance. Given the challenges and risks, it's no wonder so many banks put the decision off until absolutely necessary.

Here are some factors that can help you determine if your institution is ready for the challenge of replacing its core systems:

- **Business/IT alignment:** Core system replacement will affect both front-end and back-end users. However, much of the benefits are generally derived from process efficiency, not reduced IT spending. That's why it's important to develop your core system replacement strategy in conjunction with process rationalisation and optimisation. Also, the business must clearly communicate its needs to IT to ensure adequate capacity planning and budgeting.
- **Governance and stakeholder management:** A robust governance structure is required to conceive, plan, design and execute the core system replacement across multiple business lines (and, in some cases, multiple geographies). This structure should include well defined roles and responsibilities. Effective communication and active management are the keys to mitigating the tensions that naturally arise between front-office and back-office needs, and between regional, national, and global business requirements.



- **Requirements definition:** All affected regions and departments need to define a set of business and regulatory requirements that is clear, accurate and comprehensive. Participation and sign-off from key business stakeholders is essential.
- **Change management and communication:** To pre-empt organisational resistance, banks must clearly communicate key project drivers and ongoing progress to all affected departments and business units. Staff training and active change management prior to the rollout also can help foster cooperation and buy-in throughout the organisation.
- **Risk management:** Core system replacement involves critical changes to a bank's basic infrastructure. The associated large scale risks – which may affect multiple systems, processes and lines of business – need to be actively managed. Banks must anticipate risk at every stage and build contingency plans.



# One size does not fit all

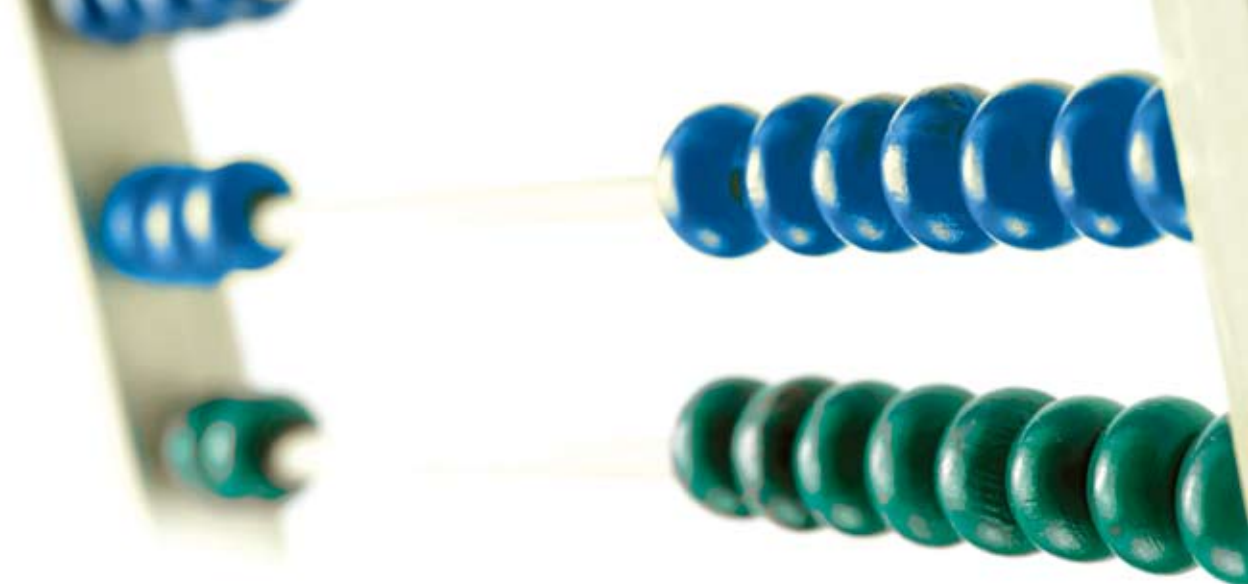
## Business case: Looking beyond the numbers

Most banks spend 70-80% of their IT budget maintaining core systems and applications<sup>6</sup> (and a big chunk of the rest goes to enhancing the core systems to keep up with new regulations). That's a lot of money. Core systems replacement can reduce costs in a number of ways, including:

- **Application rationalisation:** Reducing the number of core applications reduces maintenance and support costs
- **Hardware consolidation:** Lowering demands for hardware processing reduces spend on capacity
- **Back-office integration and automation:** Eliminating manual operational, financial, and product development processes reduces costs and increases resource capacity

Despite these significant savings, the truth is that reduced IT and back-office expenditures – in and of themselves – generally are not enough to justify the investment in new core systems. The cost and complexity of deploying such systems typically push the breakeven point beyond conventional decision thresholds. One-time, upfront costs often include:

- **Implementation:** the cost of selecting, configuring, testing, and deploying the new systems
- **Software:** the cost to purchase software licenses
- **Hardware:** costs for new or upgraded networks, servers, storage, security infrastructure, etc.
- **Training and change management:** the cost of recruiting, training, communications, etc.
- **Severance and redeployment:** personnel costs for IT staff affected by the shift to new technologies



These one-time costs generally outweigh any immediately identifiable cost reduction opportunities. In addition, there are ongoing costs to consider, including:

- **Software maintenance:** the cost to support and maintain the software, as well as ongoing license fees
- **Hardware maintenance and operations:** the cost of operating and maintaining the hardware and IT infrastructure

Although the cost of replacing a bank's core IT systems tends to overshadow the savings and other tangible benefits, there are other critical benefits that must also be taken into account. For example, core system replacement helps a bank respond more effectively to competitive, market, and regulatory pressures. The rationalisation of redundant and manual back-office processes is also a significant driver of cost savings that is difficult to track using a traditional business case. Although these "soft" benefits are difficult to quantify, they are nonetheless very real – and extremely valuable. That's why this report recommends presenting two views of the business case: one that includes only hard benefits and costs, and a second that also includes soft benefits. Although the second may be harder to defend, it may actually be more accurate and can be pivotal in helping the bank make the right decision.

Here are some other things to keep in mind when preparing a business case:

- Assumptions and estimates should be conservative and grounded in facts and historical data
- All assumptions should be clearly documented. Benefit calculations should include both **fixed assumptions** (which are based on factual data validated by the bank – e.g., salaries), and **projected assumptions** (which are inputs or "levers" used to estimate the magnitude of benefits – e.g., percentage decrease in required support)
- The hurdle rate to calculate net returns must align with the bank's cost of capital
- The time horizon for calculating returns should be at least five years, while providing a view on longer-term savings as well (10+ years)

## Where to start?

A successful core system replacement begins well in advance of the actual implementation. The bank must assess its internal and external needs and capabilities, prepare its operations, and define a clear end state. Proper attention and effort to these activities can significantly increase the chances for success.

The figure to the right shows the key work streams for replacing a bank's core systems. Major activities include:

- **Define/clarify corporate strategy.** Develop a long term year plan that clearly defines the bank's future vision and market strategy (e.g., organic growth vs. acquisition). Determine the best way to deliver products and services to customers.
- **Understand current IT capabilities.** Assess the bank's current IT capabilities and identify critical gaps. Assess the suitability of the current systems infrastructure. Define the optimal enterprise architecture and develop a long-term IT and systems strategy.
- **Ensure regulatory compliance.** Make sure current Management Information Systems and regulatory reporting practices are effective and accurate. Improve compliance and risk management practices so the bank can meet expected regulatory requirements for the foreseeable future.
- **Define a target operating model.** Establish a programme management structure and governance model, and assign a project champion at the executive level. Decide whether to build the core banking systems in-house or purchase a vendor solution. Define a Target Operating Model for core banking systems that includes technology, operational, and governance dimensions.
- **Position the bank for growth.** Assess the bank's operational effectiveness and identify opportunities for efficiency improvement. Clean up core banking data to facilitate the conversion process and to ensure consistency of data from different sources. Optimise core banking processes based on business and technical requirements.





All of these activities require significant executive oversight. They also involve many parts of the organisation, not just IT, and require substantial cross-functional effort, planning, and coordination. Given the scope and complexity of core systems replacement, a strong foundation of program and project management is essential.

## Tipping into action

The challenge of replacing a bank's core IT systems has been equated with everything from open-heart surgery to replacing the engine in a moving car. It is without a doubt one of the most difficult and complex challenges a bank will ever face, with implications that cut across functions, products and geographies. As such, it is critical to invest in upfront planning that clearly defines the business needs (as well as the potential solution). Success requires a multidisciplinary approach, including business strategy, technology integration, enterprise risk management, and regulatory compliance. The questions raised here can help you plan for a successful core system replacement – and define a solution that is tailored to your bank's unique needs.

There is no question that the costs and risks associated with core system replacement are high; however, in light of increasing customer expectations and competitive pressures, many banks find that the costs and risks of inaction are even higher. ●

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