Common Sense Core Banking Modernization: Rational approaches to achieving success

IBM Global Business Services, Core Banking Strategy and Innovation Practice
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Introduction
Whether large or small, traditional or non-traditional, regional or global, all banks now face a similar competitive imperative. Short-term survival and long-term success require simultaneous focus on often conflicting priorities: reducing operating costs, driving new sources of revenue and building capital. Growth can be achieved through innovative customer-facing strategies to stem attrition and grow deposits. Banks must also address the increased demand, cost and revenue loss from regulatory changes. This must all be accomplished in an ever changing market with increased pressure from traditional competitors and non-bank entities entering the battle for retail banking services.

Flexible core systems are the essential foundation to realizing strategies to increase deposits, improve loan origination and servicing, offering innovative products quickly and appropriately assess credit risk. Most banks’ fragmented and aging legacy systems are costly to maintain in a business as usual state and CIOs are facing resource challenges related to supporting legacy technologies. CIOs are also faced with a significant investment of time and money required to adapt legacy systems for functionality needed to support new and creative products.

The collective risks of the status quo are too great for banks to ignore. Those who do not invest in modernizing core systems will be crippled in the marketplace. However, it has been difficult for many banks to build a convincing business case detailing the value that will result from core modernization. Executives fail to see that true transformation is not solely driven by technology, but by business strategies and decisions. Banks know that the transformation of core systems is expensive and painful; and the pain is magnified by poor planning and execution in many organizations that have begun to address core systems modernization.

Figure 1 – Banks are dissatisfied with Current Core Systems’ abilities to support their goals

<table>
<thead>
<tr>
<th>Banks’ Dissatisfaction with Current Core Banking Systems’ Abilities¹</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Data Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>43%</td>
</tr>
<tr>
<td>New Product Time to Market</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>40%</td>
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<tr>
<td>Support For CRM</td>
<td></td>
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<td>40%</td>
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<tr>
<td>Integration With Other Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29%</td>
<td></td>
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<tr>
<td>Support For New Products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33%</td>
<td></td>
</tr>
</tbody>
</table>

(¹) Source Datamonitor Group, Forrester and IBM Client analysis
The following principles, together with strong committed leadership, can deliver step-change business outcomes and measurable economic benefit:

- Committed transformation program with board level accountability.
- Roadmap created by business and IT leadership with incentives for shared success.
- Unified vision for a component driven business and operating model.
- Risk mitigation using proven approaches and methodology.
- Optimized infrastructure that leverages modernized architecture and applications.
- Professional project management and delivery capabilities based on a scalable engagement model.

**Core challenge: All paths lead to change**

Banks know modernizing or replacing core systems is extremely challenging, complex and rife with risks. They do not undertake efforts of this magnitude often – many have been running some version of the current systems environment for decades. In our work, we recommend various approaches for core modernization, depending on the current environment, and issues and constraints individual banks face.

There are five legacy footprint models into which all banks, and even non-traditional financial institutions, typically fall. Each model presents formidable challenges to maintaining the status quo while supporting market imperatives of decreased costs and customer-focused innovation.

**Consolidated.** These Banks have single legacy core systems that are either home grown or are significantly enhanced packages. The challenges they face include strong, but disappearing, internal support capabilities along with constrained functionality, flexibility and speed to market constraints due to technology complexity.

**Integrated.** Multiple legacy core systems integrated on the front end, but cumbersome in the back office. These banks also have disappearing internal support capabilities and are typically constrained by reliance on vendors for updates. It takes significant effort to consolidate a single view of the customer and to provide seamless product integration to support the flexibility needed to meet market demands.

**Packaged.** Single solution provider implementations that are maintained in house. These banks typically have strong internal support capabilities; however they still rely on vendors for upgrades. Some have customized the package to a degree that makes an upgrade more than just a trivial task.

**Outsourced.** Single solution provider implementations are outsourced. Banks in this category typically have very minimal internal support capabilities and have a strong dependence on vendors for upgrades. They are also typically running back level versions of software. This limits the bank to implement changes or updates for competitive advantage. Newer platforms for core banking can provide increased ability for end users to implement unique functionality more rapidly.

**New Entrant.** These companies are seasoned financial services firms expanding into retail banking and have no major core banking support systems and limited banking experience (i.e. insurance companies, brokerage firms, credit cards etc.). Although they may have some core supporting systems they can leverage (i.e. payments, statement processing, money market brokerage accounts), they lack anything robust enough to support the majority of traditional banking products – not to mention a more demanding retail consumer base.

Depending on a bank’s legacy footprint, the paths to core systems modernization carry a variety of associated implementation risk (Fig. 2). Most large banks are constrained by Integrated or Consolidated legacy footprints, while new entrants, such as traditional brokerage, wealth management, credit card and insurance firms tend to have outsourced for speed to market issues. These new entrants now face growing fixed costs and constraints due to the outsourcers’ limited abilities to implement competitive changes/updates in a rapid and cost effective manner. These are just a few risks banks must consider when evaluating core systems modernization (Fig. 3).
Figure 2 – Paths to Modernization

<table>
<thead>
<tr>
<th>Type</th>
<th>1 Progressive Renovation</th>
<th>2 Package Replacement</th>
<th>3 Consolidate Applications</th>
<th>4 Update Current Applications</th>
<th>5 Acquire an Existing Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated</td>
<td></td>
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<tr>
<td>Integrated</td>
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<tr>
<td>Packaged</td>
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<tr>
<td>Outsourced</td>
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<tr>
<td>New Entrant</td>
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</tbody>
</table>

Figure 3 – Modernization Approaches – Pros and Cons

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progressive Renovation 1</td>
<td>Builds a flexible, modular and low risk renovation roadmap</td>
<td>• Minimizes risk</td>
<td>• Re-engineering in parallel with the continuing evolution of the operational system</td>
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<tr>
<td></td>
<td>• Composed services using existing “transactions” and new components</td>
<td>• Spreads investment over longer period</td>
<td>• Long duration and sustained executive commitment</td>
</tr>
<tr>
<td></td>
<td>• Usually will include a Master Data Management Approach</td>
<td>• Facilitates quicker ROI</td>
<td></td>
</tr>
<tr>
<td>Package Replacement 2</td>
<td>Removes all components of an installed system and replaces them with new solution</td>
<td>• Flexible and robust functionality</td>
<td>• High upfront costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Disruption to administration and operations procedures</td>
<td></td>
</tr>
<tr>
<td>Consolidate Applications 3</td>
<td>Combines multiple business functions across LOBs and from M&amp;A activities</td>
<td>• Simplifies environment</td>
<td>• May not leverage SOA-based solutions</td>
</tr>
<tr>
<td></td>
<td>• May include Master Data Management Approach</td>
<td></td>
<td>• May not provide customer and pricing flexibility</td>
</tr>
<tr>
<td>Update Current Application 4</td>
<td>‘Stay the course’ strategy seen by banks looking to be acquired</td>
<td>• Least expensive</td>
<td>• Maintains competitive disadvantage or other existing problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Less disruptive</td>
<td></td>
</tr>
<tr>
<td>Acquire an Existing Banks 5</td>
<td>Speed to market by acquiring existing I/T and operations capabilities</td>
<td>• Quick to market</td>
<td>• Possibly burdened with technology issues and operational ineffectiveness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ‘Purchase’ banking experience</td>
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</table>
As banks embark on this journey the first considerations should not be around what software vendor application package meets their needs, but a strong and compelling business case – which needs to be addressed well in advance of software selection. We often see legacy core transformations fail or significantly stall because the business leaders that own processes such as deposits, lending, or marketing are not key business sponsors engaged from the start. We also see large scale projects that are launched by lines of business and then handed over to IT for implementation. Irrespective of how the initial sponsorship was formed the business must stay actively engaged and accountable in order to drive systems modernization that will deliver quantifiable business benefits.

However, no business leader can accept accountability of a program without an understanding of what is at risk. Clear accountability requires clear communication and escalation of issues and how they affect the organization, end users and customers. Firm governance helps surface, track and drive resolution to solve issues and risks across people, process and technology.

Central to successful core systems modernization programs are clear business strategies and goals that drive requirements for the system. For instance, we all understand batch processing times – however what are the businesses KPIs that will be measured to justify realization of the business case (deposit growth, fee income growth, customer retention)? And who is – or should be – responsible to measure these defined KPIs to document the base line prior to the engagement and then demonstrate ROI during and after implementation?

Organizational transformation is a major piece of the core systems modernization – requiring involvement from the c-level, throughout every line of business. Clearly defined roles, accountability, and consequences are essential. An executive steering committee with members that include the President, CIO, Marketing, Human resources and key representatives from impacted lines of business, as well as IT leaders, is needed. High-level business and IT involvement will ensure that shifting business priorities are planned for and addressed throughout the course of longer implementations.

Key questions to ask that can help business alignment and engagement:

- How will we know when we are successful (metrics)?
- Who in the organization owns the realization of business value and / or achievement of the business case?
- Who owns ensuring that IT activities are aligned to business strategy?
- What are the common guiding principles for planning, prioritization and execution that business and IT leaders agree to?
- Who is the final decision-maker?
- How will quick decision-making be facilitated within the program governance?
- How granular does the transformation need to be? ie: Does a firm need to define a finely granular I/T journey or will ISVs provide major functionality components?

**Build a Business Case**

A core banking modernization initiative is a complex and expensive undertaking that requires a thorough and complete understanding of the expected gains and costs of the effort. Preparing a business case involves fundamental business planning and sets the stage for managing and measuring expectations to prepare for the transformational change that will result. The detailed planning required for business case development requires an analysis of all related costs (i.e. people, process and technology) and will stimulate ideas for business process improvements.

Conventional financial measures used to justify IT investments sometimes fall short of producing the desired results. Though always a solid business practice, ROI-based measurements cannot easily accommodate some aspects of the efficiencies gained, and the non-financial (and difficult to quantify) measures that are present in most IT investment decisions, such as:

- Faster new product design
- More creative products
• Improved customer service
• Employee effectiveness and efficiency gains
• Process improvements
• Increased brand value and reputation

These measures are critically relevant in order to justify a transformation investment of the magnitude of core banking modernization. This is especially true when the objective is to intentionally change a bank’s infrastructure in ways that require process change. Transformational change is much more than renewal.

Recent years have seen the development of numerous approaches to assist banking and IT executives with the challenge of justifying large-scale core bank modernization investments. Whichever approach a bank follows, the objectives should remain the same: to help bank management better justify and evaluate the initiative and aid in making the appropriate resource allocation decisions. Ideally, the approach should provide:

• A general model of key factors for the evaluation of organizational success
• Definitions of each of the key factors and their interdependencies
• Specific measures of IT performance
• Examples of how to assign monetary values to non-financial IT benefits and how to calculate the IT payoffs

**Give diligence its due**
During initial planning, pressure to realize near term quantifiable business benefits tends to drive overly ambitious timelines and aggressive dates as opposed to proven “bottom up” estimating methodologies. In an effort to get these large programs off the ground, all parties – the business and IT organizations, software, hardware and services vendors – tend to focus on the end goal, without enough emphasis on what it will take to get there.

The tendency is to time box the installation based on financial planning cycles, or when banks desire new (core system supported) business capabilities to be in place to meet evolving business requirements. Timeline is obviously crucial to winning buy-in and driving business results. However, firms must set aside the appropriate time for planning, with a clear assessment and scope of work to be completed as part of the due diligence process.

Timelines should reflect a clear understanding that as each phase is completed, and more becomes known about the related effort, issues and risks, duration and dates of subsequent phases can and will move out. This is especially true for Consolidated and Integrated legacy footprints – where systems are significantly undocumented, which can lead to missed requirements, and missed delivery dates.

When it comes to functionality, most vendors understand the timeframes involved to deliver “out of the box” functionality. But the bank must also understand the time needed to configure or customize functionality to address their specific needs and include that work in program timelines. For instance, current business rules required for CD/IRA maintenance may be built into legacy systems – but the effort to extract those business rules so they can be used in the new system is often underestimated in the project plan. However, if the required time can not be allocated to document, redesign and deploy these rules into the new system, then the bank may miss the opportunity to produce the desired improvements the original strategic business case was based on.

Another challenge often over looked is the complexity related to integrating new solutions into existing I/T environments. Most large banks have large, complex integration in their back office. It is important for banks to not only address potential business requirement gaps in new solutions, but to also perform significant due diligence on what the integration effort to ancillary systems will be; both from a technology capability and development complexity perspective.
The common sense rule banks must keep in mind is that if it sounds too good to be true, it probably is. Beware of vendors bearing pre-packaged solutions and promising aggressive timelines, without the appropriate assessment of the organization's current state and needs. There is significant intellectual capital that banks have built into legacy systems over the years that must not be lost in a transformation. Without significant due diligence vendors can not size the effort required to capture and replicate functionality or understand attributes of the system that drive differentiation that should be preserved.

Traditional banks should fully understand the underlying metrics vendors and systems integrators have used in building the tasks and timelines in the implementation plan. Due diligence requires leadership to challenge all underlying assumptions that are not clear or appear to be incorrect.

Key questions to answer:

• Who will be involved and how much time will they need to dedicate to the effort?
• How will accountability to delivery dates be handled?
• What is the gap between the current state and the desired end result?
• How will changes to the plan be captured, organized and communicated?

Build requirements right the first time

Over the decades existing core systems have been modified, extended, partially replaced and customized by internal staff and external partners. While each successive patch/fix was required to run the bank, these changes have contributed to a web of customized code. These updates were likely carried out in the fastest and most cost-effective manner possible at the time. But without the rigors of tight governance policies, hundreds if not thousands of tactical changes have conspired to create millions of lines of undocumented code in these applications.

In our work with leading Banks, we have found that these gaps can significantly slow implementations, sour relations between Banks and their core vendors, and can create misunderstandings, mistrust and missed expectations between business and IT leaders. Insufficient time to create requirements is the norm in many failed core system engagements.

In most banks the system functions can be as much as 80 percent undocumented. Creating this documentation is essential to gain a complete understanding of the gap between current and future systems, and how to solve for these gaps with desired impact to the organization, employees and customers. This documentation is also required to set up accurate testing use cases that will drive the baseline measurements for improvements over current state and the end user acceptance of the new system. Finally, without this baseline view, requirements will not be detailed or missed entirely and the solution will suffer.

Requirements gathering is a joint business and IT effort, that should be driven by business priorities and the corresponding capabilities needed to meet planned business goals (i.e. cost savings, employee engagement, customer satisfaction, deposits growth, offer management, relationship growth). In turn, the IT organization must set clear expectations for what new functionality the business will receive and when, to enable preparation and planning for the inevitable changes to business as usual.

Proper alignment creates a realistic timeframe and reduces risk. It is better to spend time on the front end of the project, when delivery dates can be moved without impact to preparation and training of end users. Addressing alignment too late in the project can cause significant disruption to installation and rollout plans. Well planned approaches build on past experiences with implementing strategic programs in which technology is a catalyst for improved business processes.
Key questions to answer:

• Is the legacy system fully documented?
• Can test cases be created from current documentation?
• Can a gap analysis between the old system and new solution be performed?
• Is the organization prepared to empower cross-functional teams to execute the work required?
• Are in-house skills and expertise sufficient to build the system requirements?

Address resourcing with realism

A major reason banks experience so much pain in baseline the current core systems and performing a true gap analysis to the new solution is the shortage of skilled, experienced resources. There is usually a high degree of confidence that new systems are understood by IT, when in reality there may be a significant knowledge gap. For some at the bank this may be the first time they are faced with the reality that a largely undocumented system underlies their current business operations. Further, only a handful of employees may truly know critical facets of the current system – and it is entirely likely there isn’t a single resource who understands the entire system from both an IT and business perspective.

Resources, whether internal or external, may have the best intentions, but due to lack of knowledge and experience they may not be able to discern regulatory necessity from desirable or customary business practices. They may miss requirements, or just as commonly, they may inadvertently “lift and shift” legacy system inefficiencies and redundancies to the new system, thereby limiting the gains and innovations inherent in new solutions. Finally, they may not know what is essential to deliver the expected, or improved, customer experience.

The right resources will understand that although solutions can be technically correct from a regulatory standpoint, they may impact the customer experience or be completely non-competitive. For instance, automatically generated statements and notices may not be required by law, but customer satisfaction may rely on them. Deeper skills and experience bring insights to the table to answer the questions that will drive the right requirements for a contemporary, customer-focused core system.

Key questions to answer:

• What is common in the industry – how have other banks solved similar problems?
• What part of the process impacts the bank, the employee and the end customer?
• What parts of current processes are essential, and what can be left behind in a move toward the future?
• What functionality is necessary to address regulatory issues and customer wants and needs?
• What functionality is necessary to differentiate your bank?
**Getting started**

When it comes to transforming their core systems, banks know failure is not an option. Inability to successfully modernize will cripple competitive capabilities. The imperatives that drive a stronger customer relationship focus may not be inherent in banks’ current organizations.

Wherever you are on your journey, every financial institution has the option of multiple entry points to modernization. Proactively identifying the right entry point and navigating the changing global landscape of solution providers eases the complexities of large cross-functional programs. By tapping into industry experience and leveraging proven frameworks banks can address the issues that would derail the competition (Fig. 4).

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### Figure 4 – Entry Points on the Core Modernization Journey

<table>
<thead>
<tr>
<th>IBM Industry Insights</th>
<th>IBM Methods, Frameworks and Tools</th>
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<tbody>
<tr>
<td>New Entrant</td>
<td>Package Selection</td>
</tr>
<tr>
<td>Outsourced</td>
<td>Acquire</td>
</tr>
<tr>
<td>Packaged</td>
<td>Application Upgrade</td>
</tr>
<tr>
<td>Consolidated</td>
<td>Package Selection</td>
</tr>
<tr>
<td>Integrated</td>
<td>Progressive Renovation</td>
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<td></td>
<td>Application Consolidation</td>
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Many banks may be just beginning to explore their core systems as a means to fuel their growth, or are in the midst of efforts that have gone off track. Smaller projects – such as offer and campaign management, regulatory compliance and mobile banking applications – can uncover the need to identify a core systems modernization strategy quickly. But no matter where they are in the journey, banks need a strategy and a roadmap to navigate the way forward. To explore ways to transform complexity into common sense for your bank, contact...
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