Core Banking Transformation: A Roadmap to a Successful Core Banking Product Implementation

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During the last few years, banks across the world have turned their attention to the need to replace their legacy core banking systems with solutions that are functionally and technologically superior. The importance of program-managing the transformation is demonstrated by the magnitude of such an investment; The Commonwealth Bank of Australia, for example, recently embarked on a vendor-driven core banking solution to replace its legacy systems, with the total cost of the project estimated at AU$580 million.

The key reasons for banks to move to a new core banking solution are:

- Legacy systems do not allow banks to manage the growth in business. This has become an issue of strategic importance in a merger and acquisition scenario.
- A disparate set of application components undermines the efficiency of the overall solution architecture.
- Loss of competitive advantage.
- Governance, risk and compliance issues.

In the last few years, many banks have forged ahead with replacement projects. A close look into the trend reveals that while some of these projects have failed, the majority have succeeded, albeit with cost overrun and schedule slippages.

This article examines, from a bank’s perspective, the key problems faced during the delivery of a replacement solution and suggests measures for mitigating the associated risks.

Sponsorship and Stakeholders

In many instances the primary driver for the replacement project is the technology department. Although this is not in itself a problem, since the replacement project is, after all, a system replacement, buy-in for the replacement needs to come in strongly from the business side. Buy-in from the business side ensures the full involvement of the business and technical users in the project.

A common feature in successful projects is the prominent role played by the sponsor. An effective and successful sponsor:

- Ensures that the requirements are documented by the business and technical groups
- Is actively involved in the solution selection process
- Ensures management support for the project in terms of budgets and resources
- Seeks cooperation of the business users and ensures their full involvement
- Ensures that the project management office and the committees meetings are result- and task-oriented
- Proactively monitor and resolve post-implementation issues for each of the project phases
Provides the necessary direction and guidance from project initiation to closure

The Proposed Target Operating Model (TOM)
Core banking systems replacement transforms the operating model of a bank. When the bank moves out of the legacy environment into a more relevant operating environment, it needs to manage several changes to the business and IT processes, roles and responsibilities, and policies and procedures.

These days banks are increasingly adopting a process-based approach to transformation projects. This is significantly different from the application-centric approach adopted during the last few decades.

It is recommended that this be done in parallel with the requirements definition or RFP preparation. However, the target operating model (TOM) would be ready for internal communication only after the requirements document had been finalized. Some banks prefer to define the TOM after kicking off the replacement project, as the details of the target applications would be known at that time.

The key deliverables of this activity are (a) the business operating model and (b) a custom-built IT governance model based on CobiT/COSO/GAIT/Six Sigma recommendations/standards (see glossary).

The advantages of defining the TOM are:
• The business operating model provides a holistic view of the overall operations of the bank
• It provides an IT governance model that is aligned with business objectives
• It improves processing efficiencies and helps accomplish service level agreements
• It facilitates better operational risk management
• It improves the return on investment

The Requirements Document
It is not uncommon to come across projects that do not have a requirements document or that lack depth. A typical core banking solution replacement project would go through a solution selection process by issuing a request for a proposal (RFP).

This document would provide a detailed list of the bank's requirements. Even if a bank decides not to issue an RFP, it is still necessary to document the requirements of the new solution, as this is a critical success factor for the project. A bank would do well to assign their key business and technical teams to evaluate their existing system on the basis of their objectives and business targets. The impact of business growth on the current systems needs to be documented in formulating requirements for a new system. The target application would need to be aligned to the projected targets and objectives.

A comprehensive requirements document significantly improves the solution evaluation process. It classifies the items according to priorities, paving the way for good change management and cut-over plans. Mandatory requirements typically include regulatory and legal items, performance, security and privacy items, quality expectations and reports.

The benefits of the document are as follows:
• It serves as the functional and technical requirements baseline
• It becomes a common reference document for all stakeholders
• If it is an RFP, then vendor's response becomes an input for change management
• It highlights the mandatory requirements—that is, (a) those mandatory items that are supported by the current system, and (b) those items that are not in the current system but are mandatory for the new system

Change Management
Transformation is all about change, and the success of the project is closely linked to having an effective change management process in place. The impact of change is all-encompassing. Transformation necessitates changes to processes, procedures, policies, controls, roles, service levels and the way of doing business.

The human factor is probably one of the most sensitive and important aspect of change. It is not uncommon to face some business users who are resistant to change during implementations. The bank's user community needs to be able to appreciate the rationale behind management's decision to transform the banking system. They also need to be educated on the operational inefficiencies and associated risks of the new system. In successful implementations, business user engagement starts at the requirement definition stage and the key leads also participate in the solution evaluation process. A good requirement document and an in-depth solution evaluation increase the probability of success, as these contribute to a good scope definition.

Phased Implementation Approach
Many banks prefer to sunset all their old system(s) in a single cut-over. This is referred to as the “Big Bang” approach. All of the old systems are replaced by the new solution on an identified date simultaneously.
It is recommended that the bank analyze the feasibility of a phased production approach wherein the exiting systems are shut down in a staggered manner.

The project can be implemented in three phases. The first phase involves applications that can be operated with minimum integration. An alternative approach is to look at those applications that contribute to a significant percentage of the business (e.g., treasury). The second phase involves all components that form part of the mission critical or transaction processing applications. In the last phase, data warehouse applications that are not of a regulatory nature could be implemented. Even if the business scenario does not permit these phases, an implementation approach of at least two phases should be seriously considered.

The phased implementation approach has several advantages. It is a safer way to realize the investment, it demonstrates progress, and it increases acceptance from stakeholders.

Also, owing to the long duration of a core banking system replacement project, this approach allows for better risk mitigation implementation.

**Data Migration**

Migration of data from the legacy system to the new solution requires considerable effort to clean, map, transform and validate data. The number of source systems identified for data migration and the difference in data structure between old and target solutions determine the effort for the exercise. The bank should ensure that:

- A team with adequate knowledge of the legacy system is assigned to the project. The size of the team should be sufficient to manage the scope of the exercise within the planned schedule.
- Data cleansing/purging is done prior to export of data from source systems.
- Data definitions of both the source and target systems need to be documented. The bank's users and the data migration team would need to be educated on the definitions.
- The mapping algorithm is made. This takes significant effort and, if accomplished with a high level of accuracy, increases the probability of meeting the conversion schedules.
- Business user involvement is required for various tasks in the conversion cycle. Data conversion tends to be seen as an IT exercise, and in many implementations insufficient business user involvement becomes a project risk.
- Validation occurs. This is probably the most important task for the business user group. They need to validate that the data that was exported from the sources systems have been transformed correctly.
- Data are required at various stages of testing. It is important that the data conversion team is aware of the entry criteria for each testing cycle and that they set their completion targets accordingly.

The data mapping between the old and the new systems is a vital process. A key input to this process is the data definitions document and the mapping algorithms. The data migration cycle is aligned with the testing schedule. Poor data quality or insufficient data could undermine the testing efforts.

**System Integration**

It is likely that the target solution comprises several applications in addition to the core banking solution. These could include some front office applications that service the customer, including secure portals, middle office risk management systems, and back office reconciliation and settlement systems.

Further, there are likely several interfaces between the application components. The common set includes interfaces to clearing houses, financial messaging networks, front-end feeds for rates, regulators, ATMs, and cards and Electronic Funds Transfer and Point of Sale terminals (EFTPOS).

The office of the system integrator should be set up with adequate resources at the commencement of the project. This is a specialized function. The system integrator will own the overall integrated project plan and ensure that the end-to-end processes work as per expectation.

**Testing of the Target Solution**

The testing of the proposed solution is the most critical phase of the project, and it is also the phase during which many projects fail. To avoid the common pitfalls at this stage:
• Allow sufficient time for testing, and make certain that it is proportional to the overall scope and changes made to base solution version.
• Make certain that acceptance criteria are discussed in sufficient detail by the project teams during kick-off. (In most contracts the mutually agreed acceptance criteria are included.)
• Define clearly the entry and exit criteria for each testing cycle. The business and IT teams need to define the scope of testing, the approach, the data required, the dependencies between mock conversions and application testing schedules.
• Ensure link between vendor’s software unit and the bank’s development servers. Business users and the testing team should provide data required for each testing cycle.
• Numbers of test cases classified by application module/banking product or service, number of logical days of testing should be core test planning items. Ensure sufficient time for the review, and resolution of the testing results.
• Plan stress and a performance tests in the production environment. This would require the full support and cooperation of all the software and hardware vendors. A high number of interfaces, to accomplish straight through processing, is a likely scenario in Core Banking transformations. A typical target architecture could have a high number of application components. A bank would need to plan their testing in such a way that it is easy to identify the performance bottlenecks. A common practice is to test logical groups of application and then test selected end-to-end processes. The banks’ users normally expect the performance to be at least the same as the old architecture, even if the volumes are higher in the target solution. Banks would need to mention the stress and performance expectations in the Requirements document.

In the last few years, banks in matured markets and elsewhere, Tier-1 banks, have begun to engage third-party testing vendors. The bank’s management may want to carefully evaluate the testing outsourcing scenario by ensuring that:
• The business users are involved in the testing process
• The testing company supplements the effort of the business users
• The ownership of the testing phase and the eventual sign-off is with the bank’s business divisions
• The bank’s staff does not lose out on the knowledge gained during the testing of the proposed solution
• The monitoring and control of the testing process, involving the bank, the testing company and the vendors work harmoniously

Production Stabilization Period
A bank would do well to include a production stabilization period in their overall plan and also the associated costs in the budget. It would be necessary for the bank to have postimplementation reviews after the bank has gone “live” with the new system. During this period the banks would need to resolve issues, particularly the high-impact ones, without any disruption to the regular operations. This would require the support of the vendors involved in the project. In a multiphase project the bank would need to have a stabilization period for each phase and the period would be proportional to the scope of the work that has been taken into production.

Conclusion
Core banking replacement is a significant investment, and the probability of the success of the project is significantly increased if the banks manage the above-mentioned issues in a planned and proactive manner.

References

Glossary
CobiT — An ITG framework and tool developed by the Information Systems Audit and Control Association (ISACA). The latest version is CobiT 4.0.
COSO — Committee of Sponsoring Organizations of the Treadway Commission, a nonprofit commission in the United States that in 1992 established a common definition of internal controls and created a framework for evaluating the effectiveness of internal controls.
GAIT — The guide to the assessment of the IT General Controls Scope based on risk. These guidelines were issued by the Institute of Internal Auditors (IIA), USA, in 2007.
Six Sigma — A set of techniques for process quality measurement and improvement. It was originally developed by Motorola and focuses on the control of a process to the point of ± six standard deviations from the mean.
About the Author
Kannan S. Ramakrishnan is a project director with i-flex Solutions and is based in Singapore. He is a chartered accountant and a banking solutions specialist with more than 21 years of experience in providing solutions to banks across the globe. Mr. Ramakrishnan has worked with Standard Chartered Bank and with leading banking solution vendors. He has managed several large product implementations, application development and system migration projects. Mr. Ramakrishnan is also a project management professional, a certified information systems auditor (nonpracticing) and an anti-money laundering specialist.

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