Business Process Management for Successful Core Banking Implementations

To successfully apply BPM when implementing core banking systems, banks must think through and conquer four major challenges: human processes, systems processes, business rules engines and business activity monitoring.

Executive Summary
The discipline of business process management (BPM) leverages digital tools to create models that enable organizations to optimize key business processes. While this approach may be adequate to cover many IT requirements, it is insufficient for the complexities of implementing a core banking system. For core banking, it is therefore necessary to apply a much wider definition of BPM.

This white paper examines the business drivers for a successful core banking system implementation. It then addresses four relevant dimensions of BPM:

- **Human Processes:** The business processes performed by the bank’s users, customers and other human stakeholders.
- **System Processes:** System workflows, system interconnections and human/system interactions.
- **Business Rule Engines:** Business rules that can be automated in a system.
- **Business Activity Monitoring:** Visibility of the system processes currently in use.

Business Drivers for Core Banking
Core banking systems are implemented to address one or more of the following business requirements:

- Mergers or acquisitions by a bank.
- Need for greater flexibility in an increasingly competitive market.
- Regulatory changes that cannot be adequately handled by legacy systems.

Enhanced Customer Experience
Mergers or acquisitions tend to complicate the bank’s business portfolio, adding a slew of products and services – many of which overlap with one another. The same goes for IT infrastructure, where multiple core-banking systems collide by offering redundant systems and processes. Without a rationalization and harmonization of the product portfolio and IT systems, it is difficult to achieve any cost efficiencies or a proper integration between the two blended entities. In this situation, it is common to choose a “to-be” core system, which may emerge from selecting one of the two legacy systems or creating a new advanced system. The success of such an imple-
mentation can usually be measured in post-merger cost savings in IT and business operations.

Many legacy core systems were built in an age when a new product launch could take years and inevitably cause business disruption. With increasing sophistication in the front office, bank IT departments have supported these operations by using a "surround" strategy where additional systems like customer relationship management systems, loan origination systems, channel systems, etc. envelop the core system and require minimal changes to application logic.

With the advent of entrants from outside the banking industry, traditional banks are finding it difficult to compete in an environment where a new product is launched within days rather than weeks or months. Core systems are being replaced to bring added flexibility. One provider of core banking systems, Temenos, recently launched a highly modular architecture in its T24 environment that supports rapid deployment of product variants without costly development efforts. Similar features are increasingly available in other core banking systems. The success of these implementations depends on the agility of business post-implementation.

Regulators are increasingly requiring banks to use modern technology to ensure that regulatory compliance requirements are effectively met. Upgrading legacy systems often leads to prohibitively expensive coding corrections that can be more effectively resolved using core banking systems which are built from the ground up to address regulatory compliance issues. Moreover, many compliance mandates are at odds with legacy systems. Examples of new regulations that require additional IT investments are: RDR compliance in the UK; FATCA compliance in the U.S.; mandatory chip cards in Canada; etc. The cost of implementing these regulatory changes in legacy systems can be as expensive as implementing a new core system that already has the technology to support these regulations. The success of such implementations is usually measured by a reduced risk of compliance failures.

Many of these business drivers cannot be addressed by studying only the systems that are being replaced or by analyzing the new and old system differences. To succeed, the implementation process must cover multiple dimensions of business process – human processes, system processes, business rules engines and business activity monitoring.

Considering the millennial culture and its increased reliance on mobile and Web tools, banks have to rely heavily on effective core banking solutions that include multiple sources of accessing customer information – including IVRs, Internet banking, ATM access, etc. These and other such means enhance the overall customer experience and help banks compete in the market and deliver an enriched experience to customers. With enhanced core banking solutions, banks typically provide greater analytics. This leads banks to better understand their customers, thus helping them provide what the customers want rather than what the bank has to sell.

**Human Processes**

Over the last decade, core banking systems have grown in complexity and features. Today, a core banking system not only has traditional back-office functions but also extends to cover interactions between the front office and back office. Core system implementations that continue to focus only on back-office functions tend to face challenges in integrating front-office systems.

**Core Banking Beyond Back Office**

As a leader in core banking, Temenos has attempted to circumvent this challenge by enhancing its product catalog and introducing the acquire-retain-cross-sell (ARC) framework. This framework brings together a suite of front-office functionality that can be delivered from its core banking system, T24.

Another leading quadrant player, Oracle Financial Services, has created the Flexcube Connect framework, which allows easy interconnectivity of legacy front-office systems to Flexcube, Oracle’s core banking system. This integration feature is extremely valuable to banks that have already invested in a surround strategy around their legacy core banking system. Migrating from a legacy system to Flexcube can be accomplished without disturbing the entire IT landscape, thereby significantly reducing risks in a core banking implementation program.

Over the last decade, international standards have started focusing more on process rather than procedure. ISO 9000:2000 saw a far more
With increased coverage of core banking, it is necessary for banks to have a view of how their human stakeholders perform their tasks - not only in the systems but even on manual processes outside the systems.

Human Processes Vs. Procedures
Most medium-size and large banks have fairly detailed documentation around their policies and procedures. But there is very little in the form of human process documentation. One of the common challenges in documentation and analysis of human processes is the risk of losing track of the distinction between human process and procedure. A practical way to differentiate between the two is as follows:

- “Human process” describes what the human stakeholders in an organization do.
- “Procedure” describes how the human stakeholders accomplish these processes.

Documenting Human Processes
The first step in analyzing and improving human processes is to document them. Based on our experience, a core banking implementation in a mid-sized bank typically impacts 400-plus processes. It is therefore extremely expensive to create “as-is” process documentation, followed by “to-be” documentation for all 400 processes. A pragmatic approach is to use the following steps:

- Select a tool and terminology that is easy for banking operations staff and front-office sales staff to understand. As an example, event-driven process chains (EPC) have terminology that is easier to understand than the business process model and notation (BPMN) standards. Software AG’s ARIS is an excellent tool, in our experience, to capture the human processes in EPC format.
- Invite stakeholders from all departments involved in a process to the business process workshop. It is also important to keep the number of people in a workshop to a reasonably small group to allow the free flow of thoughts. In our experience, a group with more than 10 persons in a room leads to inordinate cross-talk and minimal output. Break up large complex processes involving multiple departments into smaller processes to keep the team small.
- Send invitations to workshops early and share pre-reads to familiarize everyone with the methodology and terminology to be used in the workshops. It is also useful to have pre-workshop sessions to help participants understand workshop objectives and terminology. Encourage participants to reach out to other team members and become familiar with all aspects of the as-is process.
- Use the workshop to define the to-be human process. The as-is process continues to remain in focus during discussions, but the final output should revolve around the to-be process. This cuts down the cost of human process documentation by at least 50% (sometimes more, if there has been a recent merger).
- Have visual representation of the to-be process created during the workshop. (Sticky notes work; white-boards and computer slides are effective as well.) This allows the participants to become familiar with the eventual output, reducing challenges during sign-offs. This also reduces dissonance during the eventual implementation of business change management during implementation.
- Ensure that all stakeholders understand that the documentation of to-be human processes is an iterative exercise and may need two to three iterations before it is finalized. Encourage them to attend multiple workshops, if needed, on the same subject.
- Get early feedback on the visual models for to-be processes as they are built rather than waiting for them to be completed. Use appropriate tools to ensure success of this feedback phase. As an example, Software AG has the ARIS Publisher, which allows the model design team to publish its models to a wider team for feedback.

Optimizing Human Processes
The eventual aim of documentation of the human processes is to optimize these processes and reduce the number of hand-offs across departments. This kind of optimization should be done by a team that has adequate experience in both the banking domain and the core banking system.
that will eventually be implemented. This will ensure that they will recommend changes with higher benefits than costs.

Given this synergy, most of the leading core banking vendors have their own framework and team to model human processes. Temenos uses its proprietary TOPS methodology using ARIS. Oracle has its Process Framework for Banking, which uses Oracle Business Process Architect (derived from ARIS).

However, a product vendor on its own is usually not the best choice to handle overall optimization as it is unlikely to address challenges outside its product. It is recommended that the bank should engage a system integration partner to conduct the optimization process, with active involvement of the product vendor. This will allow the bank to learn from worldwide best practices of the SI partner while keeping in mind cost considerations that can be addressed by the core banking product vendor.

**System Processes**

From our perspective, system processes fall under four types:

- Processes that involve interaction of humans with systems.
- Processes that are contained within a single system.
- Processes that involve interfaces between two or more systems.
- Processes that require interfaces with external systems.

**Processes for Human-System Interaction**

The optimized human processes can be used as an initial guide to identify the interaction points between humans and systems. Using ARIS (or a similar tool), it is easy to depict system interactions with humans in the same EPC models by attaching the systems to the functions being performed by a human within a process. Reports can be pulled to provide a clear indication of the number of touch points where user interfaces are required. The reports also depict which systems will require direct usage by customers and which systems are used only by the bank’s own employees. It is also possible to identify systems that can be opened up to business partners of the bank (e.g., credit bureaus, title search agents, advocates, etc.) to improve turnaround times and reduce costly physical document transfers across organizations.

**Processes Contained Within a Single System**

Once a system is selected, it is useful to look at the processes supported by the system to depict these processes rather than trying to define the system processes. This approach reduces costly changes to the system. However, it is useful to make some changes for better management of the system:

- Link the human processes with the system processes (e.g., depict each system process by a function box in the human process, showing the human-system interactions). Ensure a common terminology (i.e., follow the bank’s terminology rather than the system vendor’s terminology in the system process).
- Use a tool that will allow ease of maintenance (e.g., Software AG’s ARIS, or the core banking system vendor’s chosen toolset).

**Processes for Interface Across Two or More Internal Systems**

A core banking system implementation project usually involves significant changes to other systems within the bank and multiple application interfaces from the core banking system to these other systems. It is useful to define a standard manner of interfacing across all the systems instead of trying to design point-to-point interfaces. Standard techniques can be used like service-oriented architecture and/or middleware to connect all systems together. It is common to use BPMN notation to depict the system processes, especially workflows, which can be implemented in standard BPM tools.

Most core banking systems support native workflow tools. While these are not as powerful as standard BPM products, they are quite useful for medium to small banks which may not have the need or the experience to support a BPM product. It is important to remember the trade-offs between the two approaches and arrive at a decision that is useful to the bank in the long run.

Process modeling for the bank’s system processes will be helpful in either situation, and therefore can be started in parallel to the selection process for workflow tools. The process models can be used effectively as starting points for proof of concepts that can be requested as part of the tool selection process.
Processes for External Interfaces
A core system implementation requires development of interfaces with several third-party systems. The most common external systems are payment systems and check clearance systems. Interfaces with these systems require careful analysis of interface specifications provided by these external entities and developing interface adapters for the core systems.

Core banking vendors increasingly prepackage these adapters with their system for easier integration. Temenos has standard adapters for SWIFT messages. It also has country-specific adapters in the form of country model banks that support interfaces with the common third-party systems. As an example, its Canada model bank makes it extremely easy to interface with credit union centrals, Interac and other Canada-specific entities.

Business Rule Engines
Business rule engines are at the heart of any calculus associated with banking operations and form a core element for most back-office systems in a typical banking environment. Rule engines involve calculations, which are sometimes extremely complex. It is one area where there is much sensitivity, as well as lots of cross-departmental interests. For example, a rules engine may scan a loan lifecycle trying to first evaluate if an application needs to be filtered or can be processed, if qualified, for the eligible loan amount, tenure, rate of interest, etc. In a typical banking scenario there could be different departments handling this. While the evaluation may be done at the front end, the actual loan amount, tenure and rate may be decided by the back office. Hence, there are cross-departmental interests involved, making this process extremely delicate from an implementation perspective.

More often, rules engines are black boxes for users since there is little to no documentation available. One of the most common experiences is to expect reverse engineering of the code and documentation by bank SMEs before evaluating whether the rules should be used as is from the previous system. A significant amount of time will likely be consumed before all stakeholders agree to any changes/deletions/additions to the business rules.

Business rules engines are normally not associated with BPM in a conventional sense. However, it is extremely important to look at frameworks for rules engines as part of the core banking system implementation. Standard toolsets are recommended for large implementations. But for smaller banks, it is extremely important to evaluate the proposed benefits that are expected to be achieved by purchasing separate systems for these activities. In many situations, it is more cost-effective to use tools provided by the core banking system vendor rather than purchasing additional tools.

Business Activity Monitoring
Business activity monitoring (BAM) is a combination of business processes with operational intelligence (see Figure 1) that can help in three distinct ways:

- Comparing activities in the day-to-day processing with established standards and providing alerts in case of variances and deviations.
- Providing online help in the form of trend analysis and operational intelligence by performing data mining that can enable a user to respond to the alerts during day-to-day operations.
- Gathering information during daily operations and feeding it back for trend analysis and data mining to enable stakeholders with data that can aid strategies and plans for the future.

BAM is complementary to data warehousing (DW) and business intelligence (BI) solutions and is not meant to replace them. Most DW and BI solutions help create data points based on past experiences that can help prevent errors in the future; however, BAM helps create data points in real time, thereby enabling error-free processing in real time.

Simply put: a BI and DW engine helps provide periodic alerts, while BAM helps to deliver them in real time.

Most core banking systems run a large number of batch jobs during their end-of-day processing. With increased competition, it is necessary to reduce the time window available for such processing. Planning for an effective BAM solution early in a core banking implementation...
allows for an efficient run-time management of
the system (see Figure 2). Once again, there are
choices available between standard BAM software
packages such as Systar and the core banking
vendor’s built-in mechanisms for monitoring
business performance. For any bank with an
ambition to operate in more than one time zone,
it is useful to deploy a solution that includes both
the core vendor’s internal monitoring tools and
standard BAM software.

Most standard core banking product vendors
allow banks to purchase additional modules
so that the core banking system can continue
to process financial transactions even during
batch runs. This is a powerful feature that
allows banks to run their ATMs, mobile banking
systems and Internet banking systems 24 hours
da day, seven days a week. But this increases the
complexity of the IT infrastructure and dependen-
cies on end-of-day processing significantly. It is
imperative to use independent software for BAM
in such a complex situation.
Conclusion
We have seen how critical the processes are for implementing a core banking solution. Increasingly, banks and product companies are moving towards a process-led implementation approach more than the traditional feature-driven approach. The approach will help banks significantly reduce key challenges that are faced during implementation.

Footnotes

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