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An important aspect of core banking transformation is the migration of legacy applications to the new core banking platform. There are two main objectives from a business-IT perspective that banks need to address in this transformation. First, the applications that will continue to exist, post-migration, on the new core banking platform needs to be identified. Second, a method to integrate the legacy applications that will be migrated to the new core banking platform needs to be designed. Using application portfolio analysis framework, a well structured approach to analyzing the current legacy application’s portfolio can be created while developing a migration path to the new core banking platform.

This paper describes a portfolio analysis framework that uses a business-IT approach to help banks gain insights about their current legacy application’s landscape and facilitate the transformation to the new platform. The framework also provides a comprehensive view of the existing legacy applications and the functionality that they support to prepare for the core banking transformation.
The importance of portfolio analysis

Banks are increasingly seeking a flexible IT architecture that can help them grow globally, launch new products, and improve the efficiency of their business operations. A key pain point for banks, however, is the inflexibility of legacy systems running their core banking operations. Banks are responding to this challenge and transforming their core banking platform.

An important aspect that banks must consider when undertaking this transformation is that completely replacing their existing applications is impossible. Some of the applications may have to be retained and integrated with the proposed core banking platform. Banks need to identify which of the existing applications will be retained, for how long, and how will they integrate with the new core banking platform? A critical enabler when answering such questions is knowledge of the existing legacy applications. With such information, identifying applications that need to co-exist with the new core banking platform is enabled. A portfolio analysis approach facilitates migrating to a new core banking platform by identifying applications that need to co-exist with the new core applications and integrating such applications with the new core banking platform.

A portfolio analysis approach

Application portfolio analysis is a systematic approach following a three-stage process – Build, Investigate, and Transform.

In the “Build” stage, information about all the legacy applications constituting the core platform of the bank is captured in a repository. Also, technical and functional information about all the applications is collected to create a holistic view of all the legacy applications that are part of the core banking operations.

The information captured includes the technologies used in the application, the hardware platform, the functionality of the application, the processes driven by the application, the interfaces of the application, information on sub-systems, batch processes

### Three Stages of Application Portfolio Analysis

<table>
<thead>
<tr>
<th>Build</th>
<th>Investigate</th>
<th>Transform</th>
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</thead>
<tbody>
<tr>
<td>Application Repository</td>
<td>Functional Match</td>
<td>Core Systems</td>
</tr>
<tr>
<td>• Create a repository of existing legacy applications</td>
<td>• Compare the current process to application map with the process to application map of the new platform</td>
<td>• Identify applications that need to be retained</td>
</tr>
<tr>
<td>• Capture technical and functional information on all core and satellite applications</td>
<td>• Analyze the health &amp; flexibility of applications that need to be retained</td>
<td>• Identify the approach for integrating retained applications with new platform</td>
</tr>
<tr>
<td>• Build a business process/function vs application map</td>
<td>• Study the interfaces and methods for integrating applications that need to be retained in the new platform</td>
<td>• Prepare the implementation roadmap for transforming the core banking platform</td>
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</table>
Banks benefit from using portfolio management frameworks to drive an end-to-end process – from data capture to analysis and transformation. They help multiple stakeholders get a holistic view of all the existing legacy applications and facilitate the execution of all the steps in the transformation. Three important aspects of the portfolio analysis approach are

1. Identifying legacy applications that are retained in the new core banking platform
2. Analyzing the retained legacy applications to validate its alignment with the new core banking platform
3. Analyzing requirements and techniques for integrating the retained legacy applications with the new core banking platform.

Analyzing the customer account management portfolio of a retail bank

The customer account management portfolio maintains the account and transaction information of customers. The key functionalities of the applications in the portfolio include maintaining customer and account information, posting transactions to accounts, calculating interest and fees, and generating account statement and other reports. The bank is evaluating the portfolio in the context of a proposal to implement a new core banking platform. The summary of the applications in the portfolio and the analysis findings are given in Exhibit 2.
## Summary of Analysis Findings

<table>
<thead>
<tr>
<th>Application</th>
<th>Application Description</th>
<th>Portfolio Analysis</th>
<th>Recommendations</th>
</tr>
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<tbody>
<tr>
<td>Master Account</td>
<td>It is a mainframe batch system that maintains the details of over a million retail customer accounts for the bank.</td>
<td>Review of the application repository and the business functions supported by the application indicate that Master Account will be replaced by the proposed core banking platform.</td>
<td>Replace with the core banking platform.</td>
</tr>
<tr>
<td>Scoring Overdraft Limit</td>
<td>The application sets scores to customers and also calculates ideal overdraft limits to customers.</td>
<td>The application is of good health and flexibility. It aligns well with the proposed core banking platform architecture.</td>
<td>Retain as-is. Review the data interface for consistency with the proposed core banking platform.</td>
</tr>
<tr>
<td>Collecting Debt</td>
<td>It is used to assist collections in out of order accounts. It receives a night feed from Master Account with customer and account details.</td>
<td>The application is very poor in flexibility and does not align with the proposed core banking platform architecture.</td>
<td>Replace with a new custom built application. A data level integration with the proposed core banking platform is required.</td>
</tr>
<tr>
<td>Customer Profiling</td>
<td>The main objective of Customer Profiling is to record and maintain a profile of all customers.</td>
<td>Review of the application repository and the business functions supported by the application indicate that Customer Profiling will be replaced by the proposed core banking platform.</td>
<td>Replace with the proposed core banking platform.</td>
</tr>
<tr>
<td>Auditing Credit</td>
<td>It is used to extract samples for internal auditing of lending officers.</td>
<td>The application is of good health. It is a small and low critical application.</td>
<td>Retain.</td>
</tr>
<tr>
<td>Application</td>
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</tr>
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<tr>
<td>Lending</td>
<td>The system enables the setting up of lending and processing customer applications.</td>
<td>The application is not flexible enough to meet the reporting requirements of business users. The front end technologies used in the application do not align well with the proposed core banking platform architecture.</td>
<td>Replace the application with the reporting tools used in the proposed core banking platform.</td>
</tr>
<tr>
<td>Reporting Exceptions</td>
<td>It is used to report exceptions in account master. Loads unpaid items for manual processing.</td>
<td>The application is of good health and flexibility. It aligns well with the proposed core banking platform architecture.</td>
<td>Retain as-is. Review the data interface for consistency with the proposed core banking platform.</td>
</tr>
<tr>
<td>Analyzing Customer Payment</td>
<td>It is used for analysis of the fees being paid by customers.</td>
<td>The application is of good health but does not align well with the architecture of the proposed core banking platform.</td>
<td>Re-engineer the data interface with Master Account database in the proposed core banking platform.</td>
</tr>
<tr>
<td>Asset Finance</td>
<td>Bookkeeping system for asset finance deals.</td>
<td>Review of the application repository and the business functions supported by the application indicate that Asset Finance will be replaced by the proposed core banking platform.</td>
<td>Replace with the proposed core banking platform.</td>
</tr>
<tr>
<td>Statements of Account</td>
<td>Supply retail and corporate customers with account statements and transaction reports.</td>
<td>The application is of good health. There are modules of the application that are dependent on systems which are part of the corporate banking portfolio.</td>
<td>The data interface with Master Account must be replaced. However, the application needs to be analyzed in combination with the corporate banking portfolio.</td>
</tr>
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Identifying applications that are retained

Portfolio analysis facilitates the identification of applications that need to be retained in two steps. In the first step, the information captured in the application repository is reviewed to identify legacy applications that must be retained. This helps identify satellite applications whose functionality is not supported in the proposed core banking platform. In the second step, the business process information captured in the application repository is used to build a business process to application map. The map is used to compare the processes and functions supported in the proposed core banking platform. The comparison identifies specific business functionalities that are not supported by the new core banking platform, and helps identify the existing legacy applications that need to be retained.

The review of the application data in our sample portfolio helps identify the core applications whose functionality will be supported by the proposed core banking platform. The applications – Master Account, Customer Profiling, and Asset Finance are rendered redundant by the implementation of the proposed core banking platform.

Analyzing legacy applications that are retained

The remaining legacy applications in the portfolio are further analyzed to identify a modernization strategy. The analysis gives insights about how good the application is in its current state and how well it will fit with the new core banking platform. The analysis is based on a well structured framework that takes a balanced view of technology and business requirements. This helps decide whether the legacy applications have to be retained as-is or modernized to co-exist with the new core banking platform. The technology assessment includes factors like reliability, scalability, flexibility, and interoperability. The business value assessment is based on whether the application is supporting all the required business functions, and whether the intended business benefits are being delivered by the application. The assessment also validates whether the application is aligned to the architecture principles of the new core banking platform under consideration. Exhibit 3 provides a snapshot of the decision matrices in our sample portfolio that help analyze the legacy applications that are retained after the first step.
Analyzing integration requirements

Once the decision on retaining a legacy application is made, the next important decision is to finalize the approach for integrating the legacy application with the new core banking platform. Portfolio analysis facilitates this step by identifying the key requirements for the integration. Data level integration is required when there is a need to access the data in the legacy application. Application level integration is required when there is a need to access the business logic in the legacy application and when there is a need to execute transactions with the legacy application. Process level integration is required when there is a need to have a tight integration between the legacy application and the new core banking platform to facilitate a process or workflow execution.
Portfolio analysis will be very helpful irrespective of whether banks want to custom build their core applications or replace the core applications with a third party package. Portfolio analysis will also help banks in choosing between a big-bang or a step-by-step approach to transformation.

**Conclusion**

The key benefits of portfolio analysis are:

- Providing the necessary knowledge about the current legacy applications and facilitate the core banking transformation program
- Identifying the legacy applications that must be retained
- Identifying techniques that are suitable for integrating the retained legacy application with the new core banking platform.