

Core Banking System Replacement

Building a Business Case for Core Banking Systems Renewal

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The Issues

Core banking system replacement is the most challenging IT projects that a Bank can face. Such implementation projects typically require substantial:

- Business resources
- IT resources of the bank
- Budget (CAPEX and OPEX)

Given the costs and risks associated with such projects many Banks struggle to articulate a business case that drives the renewal. In certain cases this delays any decision until action becomes a necessity and the Bank has no other options available but to devote significant resources to implement a new core within a very compacted time frame.

The purpose of this Advisory Note is to define a Business Value of IT (BVIT) framework within which banks can start to build a business case for CBS renewal in an objective manner which is linked to the strategic direction of the Bank and the benefits that a new core will bring. The approach however does not solely focus on a core renewal and the alternative of retaining the status quo. Rather the approach is more holistic in that it identifies a wide range of feasible options and compares the options against the BVIT framework.

Key Recommendations

- Build a business case for core banking system renewal when the idea is first discussed – the results may or may not indicate that a renewal is desirable for the bank at that moment in time
- Consider more options than replacing the core or retain the status quo – there may be other viable options for the bank
- Use a defined framework within which to build the business case
- Ensure that there is a clear understanding of the benefits that are expected to be realised from the CBS renewal as this is a key input into selecting the vendor

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BVIT Framework

The BVIT framework is a methodology developed by Optimize to carry out IT investment appraisal and to prove the business value of IT.

The BVIT framework is build around the following five pillars:

- Strategic alignment
- Payback
- Architecture
- Business process transformation
- Risk

For a more detailed explanation of the BVIT framework please refer to the advisory note Achieving Real IT Benefits DOC ID: 092101013.

Overall Approach

The overall approach comprises of the following steps:

- Define the various options that are available to the bank
- Evaluate the various options – each will have its own specific strengths and challenges:
 - Use the BVIT framework to build the qualitative benefits that are to be expected for various scenarios
 - Quantify the benefits identified into defined scores for each valid scenario
- Develop a high level AHP model around the BVIT framework and the number of valid scenarios (e.g. retain status quo, Upgrade, CBS renewal)
- Define weight of each of the criteria in the framework by the Senior Management team
- Input the defined scores into the AHP model to provide a ranked list for each of the scenarios

We recommend that a combination of business and IT drive the evaluation scenarios and score each of the valid scenarios. Weighting the BVIT criteria should be done by Senior Management of the Bank as this team is best placed to define the strategic direction and risk appetite (note they may need to be given some education sessions on the frameworks by the team).

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Definition of the Viable Scenarios

When looking at CBS renewal there are at least two scenarios which must be considered, namely:

- Retain the status quo
- Total CBS replacement

These are at opposite ends of a spectrum but in fact there may be other viable scenarios which may have a better risk/reward trade off. For example while assisting a client in developing a business case we developed the following scenarios:

- Retain the status quo with additional development for major pain points
- Develop a new branch front end
- Upgrade the existing core
- Implement new satellite systems (for example loan origination)
- Implement a new retail solution
- Total core systems replacement

Naturally these options scored very differently for each BVIT criteria. However if a bank does not document and evaluate a full range of viable options then the business case will be incomplete.

Evaluation of the Viable Options Using the BVIT Framework

The strengths and challenges of each identified scenario should be evaluated on the basis of the BVIT framework criteria. The following are the high level BVIT criteria but there are many factors to be evaluated under each pillar and here we have provided some examples:

- Strategic alignment
 - For example from a strategic alignment perspective we need to understand how well the option fits current and future business requirements. This may vary quite dramatically between the options. For example a Bank with a Corporate focus (and a core customised to Corporate business) in a specific geography looking to move into retail will have very different scores for strategic alignment between retaining the status quo (potentially low) and implementing a new universal core (potentially high)
- Payback
 - This is always the most difficult evaluation criteria. In some cases there may be clear CAPEX and OPEX cost savings for specific options. For example in one case a client had a highly customised mainframe environment which was expensive both in terms of vendor costs (hardware, operating system etc.) and internal software maintenance. A move to a more open platform had some medium term direct cost savings. However in other areas (for example quality, productivity, employee performance) it can be difficult to estimate the payback in monetary terms but there are ways of doing this
- Architecture (technology change, flexibility)
 - From an architectural point of view the various options may have significant issues both in terms of the inherent architecture of the package as well as the overall architecture of the bank. For example the option of retaining the status quo

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may involve maintaining a complex integration architecture with multiple point to point links and data duplications. Conversely a new core may provide many architectural benefits including flexible channel integration, straight through processing and automated workflows

- Business process re-design
 - Many existing core banking systems are legacy and inflexible. They do not support streamlined business processes (i.e. STP) nor do they allow flexible workflow which can be changed as business processes change. In contrast modern cores provide a flexible process platform. The key question is whether the existing business processes are adequate or whether they are inefficient and contain many unnecessary steps. If the current processes are inefficient then implementing around the defined process in a new core may significantly reduce any customisation cost. If the processes are seen as a competitive advantage and are currently well supported by the current system then retaining the status quo may have merit

- Risk
 - Risk must be evaluated for all the options considered. Even the option of retaining the status quo may have some risk associated with it (e.g. high level of operational risk). Key factors which need to be considered when evaluating the risk include:
 - Project scale and organisation scope. A complete core replacement is a very large project and touches almost all aspects of the Bank's processes from origination to payments. Other options may have less of an impact but clearly: the more impact on the Bank, the more risk
 - Organisational readiness for change. Banks do not typically go through core changes often and therefore there is usually little institutional memory of pain of a core replacement project. In certain cases the need to change may not be uniform throughout the bank and people may see no value in the change from their perspective
 - Vendor stability. If the current core is from a vendor does the vendor provide an upgrade path, is the vendor stable? There are many examples of acquisitions of core banking system vendors which have resulted in forced upgrades
 - System stability. For example is the current core maintainable in the medium term if it is in-houses developed (in many cases we find skills sets have eroded over time) or is the vendor withdrawing support and forcing an upgrade (we recently had a case were the hardware vendor was withdrawing support for the core platform)
 - Time scale. The longer the timescale without producing any tangible results the greater the risk. This dramatically increases the risk of a new core option which can take 24-36 months

Core banking renewal projects are complex and risky. Any impetus to change must be driven by the failings of the existing core: these should be analyzed in some detail in order to understand what benefits any other options will bring. In other words, the status quo must be used as the benchmark against which the other scenarios are evaluated. Not evaluating the existing system in some detail can lead to de facto decisions for core replacement where in fact given the time and risk of such a project, retaining the status quo or other options may be better. We came across such a situation recently where there seemed to be a widespread consensus within a Bank that a core replacement was required. However a systems audit identified that the issues were primarily around branch automation and retail loans/deposits. Without this audit the scenarios of implementing a new branch front end or a new retail system would not have been considered. Neither should the implementation of a new core be viewed as a panacea to all the Bank's functionality issues. To successfully implement a new core

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without major and costly customization requires a major adaption by the Bank to the processes the core supports.

The evaluation of each of the options should be as objective as possible. However the BVIT framework is such that payback is only one of the criteria, other criteria tend to be more subjective in their nature. As such the evaluation is heavily focused on a qualitative analysis at this step. In the next step an attempt must be made to put quantitative scores on these criteria.

AHP Model

The Analytic Hierarchy Process (AHP) is a structured technique for organizing and analyzing complex decisions. AHP first decomposes the decision problem into a hierarchy of more easily comprehended sub-criteria, each of which can be analyzed independently. Within this context we use the BVIT frame as the decomposition. In the example provided here we have only decomposed the criteria into a single level. However further decomposition is necessary when a more complex model is required. For example strategic alignment can be broken down by business line (corporate, treasury, trade finance, retail etc) while payback can be broken by direct payback, productivity etc.

The table below provides a sample AHP framework where 4 strategic alternatives were identified.

Table 1 – Sample Core Banking Strategic Options AHP Framework

| Criteria | Weight | Status Quo | | New Branch Front End | | New Retail Core | | New Core | |
|---------------------|--------|------------|----------|----------------------|----------|-----------------|----------|----------|----------|
| | | Raw | Weighted | Raw | Weighted | Raw | Weighted | Raw | Weighted |
| Strategic Alignment | 0 | | | | | | | | |
| Payback | 0 | | | | | | | | |
| Architecture | 0 | | | | | | | | |
| Business Process | 0 | | | | | | | | |
| Risk | 0 | | | | | | | | |
| Total | | | | | | | | | |

The next step is in many ways the most difficult in that the qualitative analysis developed in the previous step needs to be given a quantitative score under each of the BVIT criteria. At the highest level this can be quite daunting but if the model criteria are decomposed to a second and third level it is easier to compare the alternatives.

NB: this full model should be defined prior to the evaluation step as the evaluation of the options must be done within the framework of the fully decomposed criteria.

Table 2 shows a sample model where quantitative scores have been applied to each of the criteria for each option based on the specific context of the Bank.

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Table 2 – Sample Strategic Options AHP Scoring

| Criteria | Weight | Status Quo | | New Branch Front End | | New Retail Core | | New Core | |
|---------------------|-----------|-------------|----------|----------------------|----------|-----------------|----------|-------------|----------|
| | | Raw | Weighted | Raw | Weighted | Raw | Weighted | Raw | Weighted |
| Strategic Alignment | | 1.5 | 0 | 2 | 0 | 4 | 0 | 4.5 | 0 |
| Payback | | 4 | 0 | 2 | 0 | 0.5 | 0 | 1.5 | 0 |
| Architecture | | 2 | 0 | 2.5 | 0 | 1 | 0 | 4 | 0 |
| Business Process | | 3 | 0 | 2.5 | 0 | 1.5 | 0 | 1.5 | 0 |
| Risk | | 4 | 0 | 2.5 | 0 | 2 | 0 | 1 | 0 |
| Total | 0% | 14.5 | 0 | 11.5 | 0 | 9 | 0 | 12.5 | 0 |

For the final step Senior Management of the bank need to weight each of the BVIT criteria to come up with a ranked list of options. Again this can be difficult as different parts of a Bank may have very different views on how the various criteria should be weighted. Typically we see the final weights being decided in a workshop setting using either a consensus based approach or alternatively taking an average across the senior management team. Table 3 shows a sample of a completed model which provides a ranking of the various options.

Table 3 – Sample Strategic Options AHP Weighted Scoring

| Criteria | Weight | Status Quo | | New Branch Front End | | New Retail Core | | New Core | |
|---------------------|-------------|-------------|------------|----------------------|--------------|-----------------|------------|-------------|------------|
| | | Raw | Weighted | Raw | Weighted | Raw | Weighted | Raw | Weighted |
| Strategic Alignment | 50% | 1.5 | 0.75 | 2 | 1 | 4 | 2 | 4.5 | 2.25 |
| Payback | 15% | 4 | 0.6 | 2 | 0.3 | 0.5 | 0.075 | 1.5 | 0.225 |
| Architecture | 10% | 2 | 0.2 | 2.5 | 0.25 | 1 | 0.1 | 4 | 0.4 |
| Business Process | 15% | 3 | 0.45 | 2.5 | 0.375 | 1.5 | 0.225 | 1.5 | 0.225 |
| Risk | 10% | 4 | 0.4 | 2.5 | 0.25 | 2 | 0.2 | 1 | 0.1 |
| Total | 100% | 14.5 | 2.4 | 11.5 | 2.175 | 9 | 2.6 | 12.5 | 3.2 |

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In Brief

A core banking system replacement is the largest project most banks face. A considerable amount of work must be done to build a business case which justifies or otherwise the core change. We have seen situations where the business case was totally informal. However we do not think that this is wise. A solid business case is required to justify the expenditure as well as the pain that the Bank will go through with a core transformation. A solid business case for core transformation can be used as a communication tool to educate all the Bank's employees about the desirability of such a transformation project. Our approach to building a business case is based around the BVIT framework built into an AHP model. There are other approaches which can be as effective but the key issue is to formally document the business case so that it is actively discussed before any decision is taken.