

Review Article

Analytics and Project Management in Investment Banks

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Abstract - In the post-Great Recession era, investment banks have invested in analytics for managing critical projects. This has not only streamlined executive reporting to regulators and key stakeholders, but it has also paved the way for high-quality command and control. Projects involving the decommissioning of legacy banking applications have long suffered from a lack of comprehensive future state planning and poorly vetted execution strategies. The usage of analytical modeling and tools aims to solve some of these challenges.

Keywords - Project Management, Portfolio Management, Investment Banks, Analytics, Application decommission.

I. INTRODUCTION

Project managers in US investment banks have traditionally used analytics to predict budgets, costs, timelines, and benchmark progress. In and around the Great Recession, the focus on gathering and using metrics followed a rather Laissez-Faire approach due to the relaxed regulatory environment within the banking and a strong emphasis on speedy execution and time to market, as opposed to adherence to stricter protocols. Dodd-Frank and MIFID, other SEC, PRA regulations, and EBA regulations eliminated the market-driven approach to project reporting. They mandated several strict protocols that have turned in over the past decade to industry standards.

II. EMERGENCE OF ANALYTICS

Analytics, in general, is either data-driven or decision-driven. Data-driven analytics leverages large amounts of data and tries to identify patterns and implicit factors [1]. Decision-driven analytics, on the other hand, starts with a decision and leverages domain knowledge and subject matter expertise to model relationships. Because project management often requires starting with a problem and working backward [2], the decision-driven approach is better suited for its purpose [3]. More specifically, investment banking landscapes encourage a more creative approach to solving project management problems and often do not subscribe strongly to historic precedents in managing risks and coming up with solutions. Additionally, in the pre-Great Recession era, technology teams and, by extension, project managers largely operated in silos, driven by trading desk priorities across New York,

London, and Frankfurt [4]. Tighter investment banking budgets and a heavier focus on regulatory projects during the Obama administration era resulted in adopting decision-centric analytics in conjunction with new technology to stay competitive.

III. PREDICTIVE ANALYTICS

Project managers in investment banks usually do not draw cause and effect relationships between forecast parameters and project outcomes. This is large because historical data usually is a very poor predictor of project execution outcomes [5].

Deloitte [6] has come up with a Predictive Project Analytics framework which uses quantitative models to provide predictive insights on risk management across five stages: (1) Inherent risk and complexity assessment, (2) interviews and structured document review, (3) predictive analytic project review, (4) analysis and synthesis and (5) reporting.

The cornerstone of this approach lies in step 3, where background information gathered in steps 1 and 2 are fed into a proprietary predictive tool which produces a correlation between project complexity, controls, and success using a database of thousands of projects, followed by incorporation of softer factors such as leadership and decision-making. The predictive tool is based on detailed information on over 2,000 completed projects, categorized by product type, complexity, management approach, and outcomes. The framework suggests a correlation between project complexity and failure to deliver, further indicating the importance of astute project management and rigorous control. While this model aims to help organizations create better control processes to pre-empt key initiatives failures, investment banks have come with their processes to tackle the problem.

IV. PROCESS-DRIVEN APPROACH

In the Dodd-Frank era, Investment banks have spent sizeable money on standardizing project lifecycle management and reporting. This includes focusing on detailed business requirements, usage of transparent metrics to measure quantifiable business outcomes, rigorous procedures on the identification and escalation of project risks, and development of metrics on tracking



accrual of project benefits, such as revenue recognition cost savings realization.

While this process-driven approach has resulted in more transparency, the better quality of project artifacts, more rigorous reporting standards, and top-down accountability, it has not been able to make much of a difference to the biggest roadblock of all – decommissioning of monolithic legacy applications and replacement with modern and more streamlined banking applications.

V. LEGACY APPLICATIONS

Most large investment banks are saddled with their fair share of legacy applications across trade capture, data warehouses, settlement applications as well as books and records. Most of these applications were designed and commissioned in the 90s and were designed with standards that were in existence at the time. Although most of these applications were built in-house, almost all of them suffered from a lack of design documentation and, in some cases, even source code. To make matters worse, several regulatory frameworks were also built on top of these applications over time, making them almost impossible to deconstruct for decommissioning initiatives.

Some of the largest challenges in decommissioning legacy banking applications [7] include identifying and replicating data model relationships and reverse-engineering built-in business logic.

VI. ANALYTICS-DRIVEN APPROACH

A. Data Management Strategy

Regulatory guidelines around data retention require investment banks to retain historical data for specified periods [6]. This often presents unique challenges in the choice of data migration strategies with the ultimate aim of secure and cost-effective retrieval and storage. Modern-day analytics could be applied in solving such problems by tapping into prescriptive optimization models using acceptable assumptions and data points [7] [8].

B. Lack of legacy system expertise

Investment banks lost a very large portion of long-tenured employees in the years leading away from the Great Recession due to major drawdowns in technology investment and compensation. This left major knowledge gaps in siloed technology divisions, which were never truly addressed. While such gaps cannot be tackled with analytics alone, the development of suitable metrics on key unknowns and vetting with relevant architects and stakeholders could help develop a delivery strategy that tries to mitigate some of these risks.

C. Executive Committee Support

Executive and steering committees often heavily depend on metrics and analytics, defining and comparing the value of a project vis-à-vis competing initiatives across businesses and the entire firm [7]. This often sets the tone

for prioritization in terms of strategic importance to the firm and budget allocation. Legacy application decommissions initiatives are often presented in conjunction with strategic technology replacement initiatives, which add sizeable short- and long-term value to the firm. The winning propositions usually include replacement initiatives as part of bigger strategic moves to give the firm an edge against the competition.

D. System stakeholder support

Detailed analytics defining the succession strategy for applications set up for decommission often goes a long way in reinforcing stakeholder confidence on such projects and removes roadblocks for cross-functional sign-offs [7]. It also aids rational project decisions with analytical certainty.

VII. PROPOSED APPROACH

In addition to existing analytical methods already discussed and in use in investment banks to aid project management of key initiatives, this paper discusses an approach that could supplement existing investment bank project management frameworks to solve known problems and improve overall execution efficiency. Figure 1 summarizes an analytics-driven approach to managing application decommission projects with significant impact within investment banks.

A. Project objectives and Data Collection

Within investment banks, project sponsors and stakeholders often have conflicting views on the project objectives. Documentation of assumptions, understanding of system usage, and conversations with sponsors and stakeholders should be recorded. Driving a consensus about the problem statement at the start of the project often saves a lot of time and frustration. Data collection is also advisable [1], especially on usage of the application chosen for decommission, dependencies on upstream and downstream applications that would exist in the future state, and process-related data would require replication.

B. Building a model

Several options could be employed at this step, depending on the complexity of the undertaking. A descriptive model could be built to explain the current usage of an application designated for decommissioning. A predictive model could be used to project usage patterns of a replacement application, including scalability concerns. An optimization model could look into architectural fits for the replacement application.

C. Development of solution

This step would involve taking all data and assumptions and coming up with a useable result [1]. The model may be derived wholly from data or logic or a combination thereof.



Fig. 1 Use of analytics in application decommission projects in US investment banks

D. Testing and Validation of Model

Testing the implementation model of the application decommission project is a key step to ensuring that it aligns with the project objectives, outlined in section A. Testing should be independent and comprehensive [1], to imbue confidence in its ability to withstand review. Validation of the model would follow testing, and it would involve full coverage of all assumptions.

E. Usage and deployment

Once the deployment model for application decommission is tested and validated, it could be presented to stakeholders and sponsors for final sign-off as a final step or set up for periodic review and re-baselining on the emergence of new information or shifting priorities. Sometimes, this leads to an iterative process of refinement and redeployment, allowing project managers to make modifications as necessary in each step of the process.

VIII. CONCLUSION

Analytics has helped project managers decipher complex information for better decision making and aided their quest for sticking to schedules. However, legacy application decommissioning projects have often either failed to take off or failed after tee-off within investment banks. The use of analytical models to try and solve some of the teething problems around data management, lack of documentation and standards, and also a sustained lack of executive and stakeholder support, in conjunction with the use of existing metrics, could go a long way in creating a more sustainable and viable competitive advantage. As investment banks emerge from a decade of financial regulatory reform and tapered technology spending, especially on revenue growth initiatives, some of the rapid growth of project and product management functions has been possible because of strong analytical tools that straddle project initiation execution and governance. This has resulted in better risk management and understanding of assumptions made before initiating key projects, leading to a much lower failure rate.

Projects that involve decommissioning major legacy applications within investment banks could benefit from deeper analytics-driven analyses and tooling embedded in existing project management frameworks.

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