

A Systematic Approach of Application Portfolio Rationalization in Pharmaceutical & Healthcare Domain

Anurag Singh Bisht

Abstract: *In recent years, organisations have increasingly heard concerns from their pharmaceutical and healthcare customers regarding challenges within their application portfolios. These challenges commonly include legacy systems, obsolete technologies, application redundancy, lack of standardisation, limited agility and scalability, poor functional alignment, high total cost of ownership, elevated maintenance risks, and substantial licensing and support costs. Application Portfolio Rationalization (APR) is a structured approach designed to address and mitigate these challenges. The primary objective of application portfolio analysis is to evaluate customer-centric applications across multiple dimensions, including technology, risk, and functional alignment. This paper gives a view that how APR provides a systematic framework for developing comprehensive application inventories and making informed disposition decisions aligned with current IT strategies and evolving business requirements.*

Keywords: Application Portfolio Rationalization, Application Assessment, Risk, Disposition

1. Introduction

Organisations across life sciences, healthcare, and other industries typically manage extensive application portfolios. Depending on organisational size, complexity, and geographic spread, these portfolios can comprise hundreds or even thousands of account-level applications. This raises a critical question- are all existing applications truly within scope and essential for effective business operations? Common challenges observed within such application landscapes include limited integration with other enterprise assets, fragmented ownership across multiple IT solutions, and significant redundancy within the portfolio, resulting in substantial cost overheads.

The implementation of Application Portfolio Rationalization (APR) enables organisations to address these challenges and unlock key opportunities. These include upgrading applications to current versions, decommissioning redundant systems, mitigating vendor risks, replacing high-cost applications with more cost-effective alternatives, consolidating local applications into global platforms, and adopting modern, industry-standard solutions. Through APR, organisations gain clarity on their existing application landscape and are better positioned to identify applications that warrant prioritised focus and investment to support future business objectives.

2. APR Engagement Methodology

The Application Portfolio Rationalization (APR) engagement follows a structured methodology comprising four key phases i.e. planning, data gathering, assessment, and recommendation. While these phases are typically executed in a sequential manner from an overall engagement perspective, activities within each phase may be performed in parallel for individual applications. For example, application inventory collection and stakeholder interviews for a specific application can be conducted concurrently, enabling efficiency without compromising assessment quality.

These activities and their sub tasks have been shown in Fig 1

- **Project Planning-** This is the initial phase of the Application Portfolio Rationalization (APR) initiative and focuses on establishing the foundational structure required to initiate the engagement. This phase involves defining the overall scope, engaging with key application stakeholders, and developing standard templates and planning artefacts to support execution. A key activity during this phase is application clustering, which can be performed based on appropriate criteria such as functional domains, business capabilities, or process areas. This structured segmentation helps to organise the application landscape and enables more effective analysis. Project planning also includes resource allocation, ensuring that the required functional-area-specific Subject Matter Experts (SMEs) are identified and engaged to support subsequent phases of the APR process.

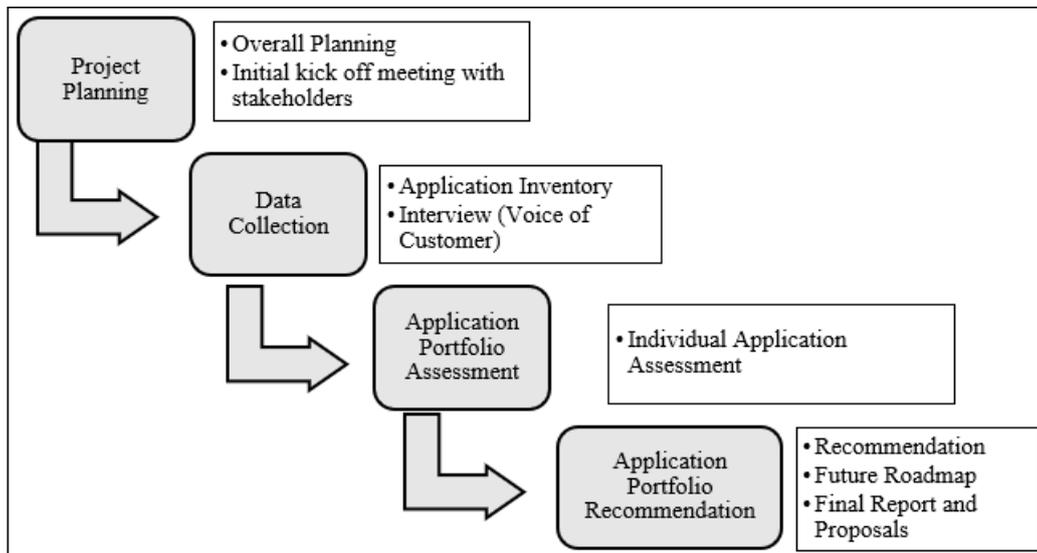


Figure 1: APR Engagement Activities

- Application Data Gathering-** In today's data-driven environment, high-quality data is a critical enabler of successful outcomes. The effectiveness of an Application Portfolio Rationalization (APR) engagement is highly dependent on the accuracy, completeness, and consistency of the underlying data. Consequently, it is essential to collect application portfolio information through well-defined data templates complemented by structured stakeholder interviews. Many organisations maintain Configuration Management Database (CMDB) systems that provide baseline application data, including core application attributes. In addition to these standard attributes, further data elements can be tailored based on the specific objectives of the APR engagement. For instance, when architectural analysis is a key focus, attributes related to architectural maturity and standards compliance can be captured during this phase. Such insights are typically derived from stakeholder interviews and the voice of the customer. The collected data must be validated to ensure it is accurate, complete, and consistent, thereby making it fit for purpose for the subsequent assessment phase.
- Application Portfolio Assessment-** It forms the core of the Application Portfolio Rationalization (APR) process. This phase focuses on analysing the data collected during earlier stages to evaluate applications and determine their appropriate future disposition. Assessments may be conducted across multiple dimensions, including functional alignment, architecture, risk, and cost, depending on the specific objectives and requirements of the engagement. In many cases, organisations also seek a modernisation-led approach, where the focus extends beyond rationalisation to include alignment with current market expectations, adoption of best-of-breed solutions, and future-ready capabilities. To support informed and defensible disposition decisions in the recommendation phase, it is essential that all relevant assessment dimensions are comprehensively captured and analysed, providing a clear and well-substantiated rationale for each recommendation.
- Application Portfolio Recommendation-** It represents the outcome phase of the Application Portfolio Rationalization (APR) initiative and focuses on defining

actionable recommendations for applications within the portfolio. These recommendations are articulated through application dispositions, which outline the intended future state of each application. Typical disposition options include Retain, Replace, Consolidate, and Retire. The proposed dispositions are reviewed in collaboration with application owners and key stakeholders to ensure alignment with business priorities. Final decisions are made based on feasibility considerations such as budget, timelines, risks, and overall business impact. For example, if the assessment concludes that Application ABC should be replaced with Application XYZ, the project team evaluates the associated benefits, constraints, and trade-offs before proceeding with the recommended course of action.

Recommendation can also be provided in terms of TIME model which is a strategic framework provided by Gartner. This framework helps to identify in making decision about which applications to maintain, enhance, replace or decommission. TIME signifies Tolerate, Invest, Migrate, Eliminate.

Tolerate- Applications that sufficiently support current business operations despite known limitations. While they may be based on legacy or aging technologies, the cost and effort to change them are not currently justified by the benefits. These applications are maintained as-is until a clear business or technology trigger necessitates action.

Invest- Applications that deliver high business value or support competitive differentiation. These applications require ongoing investment to improve functionality, scale effectively, and adapt to evolving business and market needs.

Migrate- Applications that need to be changed due to outdated technology, evolving business processes, or new market demands. This may involve upgrading to a newer version, moving to a different platform, or adopting a modern solution with equivalent capabilities.

Eliminate- Applications that no longer provide sufficient business value. These may be redundant, infrequently used,

or costly to maintain relative to their benefits. Retiring them helps reduce complexity and free up resources.

3. Key Tasks in APR Process

- Planning, governing, and monitoring the overall Application Portfolio Rationalization (APR) initiative to ensure structured execution.
- Driving the APR assessment in a phased manner by applying appropriate methodologies aligned with the defined rationalisation approach.
- Ensuring the engagement remains aligned with agreed objectives, scope, and outcomes throughout its lifecycle.
- Compiling and validating a comprehensive inventory of applications across in-scope product families.
- Managing stakeholder communications and facilitating meetings and workshops to ensure effective collaboration and alignment.
- Gathering detailed insights into customer business processes and application landscapes through structured data inventories and stakeholder interviews.
- Conducting stakeholder interviews and developing interview playback documents to capture key findings and insights.
- Developing actionable recommendations, solution options, and concise reports, tailored to customer needs, capabilities, and constraints.
- Reviewing and validating deliverables to ensure timely and accurate delivery in accordance with the agreed outcomes of the APR exercise.

4. Benefits of APR Implementation

Application Portfolio Rationalization is not solely focused on reducing the size of the application portfolio; rather, it enables organisations to unlock strategic business opportunities and maximise value from their existing IT landscape. The APR process helps organisations assess the degree of alignment between applications and current business requirements, ensuring that technology investments effectively support business objectives. APR is applicable across multiple industries, including Life Sciences, Healthcare, Telecom, Retail, Banking, and Financial Services. The cumulative outcome of an APR initiative is a more optimised, business-aligned application landscape that contributes to improved operational efficiency and enhanced customer satisfaction.

5. Key benefits of adopting APR include

- Reduction in the overall Total Cost of Ownership (TCO) across the application landscape.
- Standardisation of applications, resulting in a simplified portfolio that is easier to support and maintain.
- Validation of the existing application portfolio to enable more effective utilisation of IT budgets.
- Elimination of redundant applications and enhancement of application services through modernisation.
- Consolidation of smaller or point solutions onto appropriate enterprise platforms, improving visibility and governance.
- Development of a balanced and lean application portfolio aligned with evolving business requirements.

- Identification of opportunities for end-to-end process automation.
- Minimisation of technical obsolescence across the application ecosystem.
- Improved risk mitigation through proactive management of technology, vendor, and operational risks.

6. Outcome/Deliverables of APR

APR engagements typically result in a defined set of deliverables. Throughout the engagement, emphasis is placed on ensuring that these deliverables comprehensively address all relevant dimensions while meeting high standards of quality. The nature and scope of deliverables may vary based on specific customer requirements and engagement objectives. Below are some deliverables (but not limited to) depends on the customer requirements.

- Application inventory document- It comprises application details that comes under dimensions like application information, functionality, interfacing application, platform technology, architecture, risk and operation. Based on the project portfolio or industry, dimension can be amended. Data can be gathered either from CMDB system or from the interview. Success of this deliverable depends on the iterative interaction for correctness and completeness of data, with the respective application manager/system owner.
- Interview playback- This document is the backbone for the recommendation document. It comprises the outcome of interviews held with application owners (business, system etc). APR team can get various information of individual application from this playback document. Information like application business functionality, architecture information, planned initiatives, pain points, cost, support, application usage can be taken from this deliverable.
- Assessment and recommendation document This is the one step ahead of the interview playback. Based on the interview playback application assessment followed by application recommendation can be suggested. This can be helpful to provide Functional, Risk, Cost, Architecture, and other assessments. Based on the assessment a disposition (like retain, replace, retire and so on) can be suggested. Why a particular disposition has been given can be supported by a proper rationale. Apart from that, application recommendations and their benefits can be suggested in this deliverable. These recommendations can be short term or long term based on the duration and assessment criteria.
- Management summary- This is the final deliverable of the process which provides the executive summary. It provides visual representation of the overall activity that helps the business to understand the engagement and take the further step.

7. Challenges in APR

Application Portfolio Rationalization is not the responsibility of a single organisation or function; rather, it is a collaborative initiative that requires coordinated effort across multiple stakeholders to ensure success. The implementation of APR presents several practical challenges, including the following-

- APR engagements require extensive involvement from diverse stakeholders, including application owners, business owners, and system owner representatives. Stakeholder interviews play a critical role in capturing insights into application usage, challenges, and future needs, which directly influence disposition recommendations. However, ensuring the availability and timely participation of these stakeholders is often a significant challenge, requiring considerable coordination and effort by the APR team.
 - Application Portfolio Rationalization is sometimes perceived as application portfolio optimisation, which can be misunderstood as an initiative aimed solely at reducing or eliminating applications. This perception may create apprehension among application owners, leading to resistance or limited engagement and, consequently, reduced information quality. This challenge can be mitigated through clear communication and upfront briefings that emphasise the objective of APR as reducing pain points and improving value, rather than indiscriminately removing applications.
 - Data quality represents another critical challenge in APR initiatives. While Configuration Management Database (CMDB) systems can serve as a valuable source of baseline information, the data contained within them may be outdated, incomplete, or inaccurate. As a result, CMDB data must be carefully validated and supplemented through stakeholder interactions to ensure accuracy and reliability for assessment and decision-making.
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Author Profile

Anurag Singh Bisht, Business Analyst in Life Sciences and Healthcare Domain Strategic Consulting Group of TCS, is an accomplished professional having over 15 years of experience. He holds BTech in Electrical Engineering from GBPUA&T Pantnagar University Uttarakhand and MTech in Engineering Management from NSIT (University of Delhi) Delhi.

Ramprasad Subramanya, Consulting Partner in Life Sciences and Healthcare Domain Strategic Consulting Group of TCS, is an accomplished professional having over 20 years managerial and enterprise architectural experience. He holds BE in Industrial Engineering from Bangalore University and Post Graduate Diploma from IIM Bangalore.

Pankaj Gupta, heads strategy and transformation consulting in the Life Sciences business unit of TCS. He has over 25 years of experience in IT and digital strategy and architecture consulting, IT-led business transformation, business value engineering, global IT project delivery and program management, software product development, SAP consulting, production engineering, and plant automation. He holds a BTech in electrical engineering from IIT(BHU), MTech in software systems (data analytics) from BITS, Pilani.

8. Conclusion

Application Portfolio Rationalization enables organisations to focus on areas that deliver the highest business value. The visual representation of outcomes facilitates quicker insights and more informed decision-making. While APR implementation is inherently complex and requires extensive coordination among multiple stakeholders to achieve a lean and effective application portfolio, a successful execution delivers significant benefits. These include a harmonised application landscape through the reduction of functional duplication, as well as a modernised portfolio aligned with current and future business needs. Strong management sponsorship is a critical success factor for APR initiatives. Active support across strategic, tactical, and operational levels ensures smoother execution and sustained alignment with organisational objectives. A well-defined APR approach further enables organisations to support future initiatives, including modernisation, introduction of new services, consolidation, and digital transformation.

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