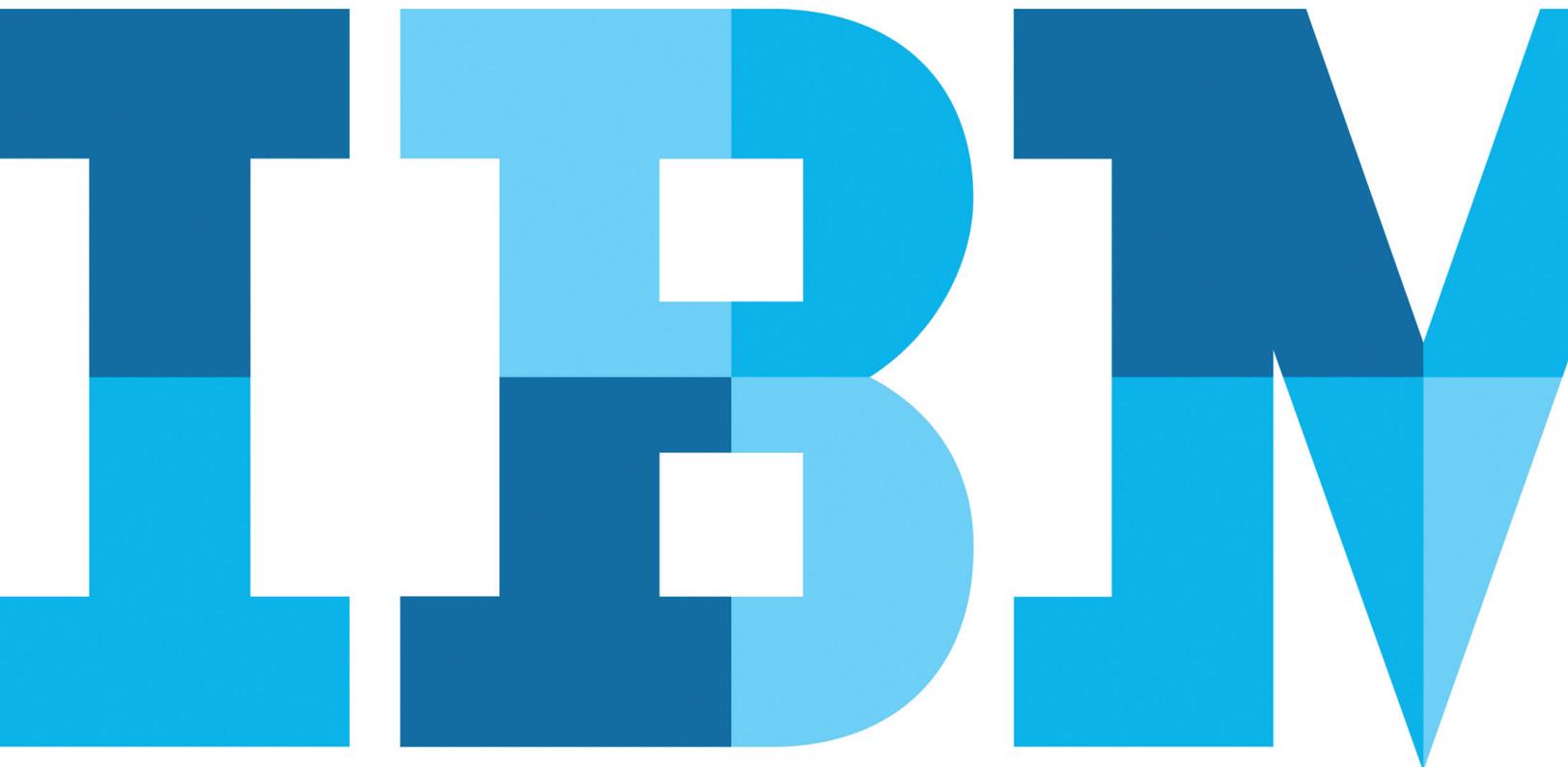


# Empowering the CIO: Enabling smarter decisions with Application Portfolio Management

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As software plays an increasingly critical role in the business performance of corporations, IT faces considerable pressure to support new business initiatives *while cutting costs*. Over the last 30 years, billions of dollars have been invested in software applications, but typically these investments are poorly leveraged. Too often, a complex and poorly understood application portfolio consumes a large percentage of IT funds, leaving corporate business and IT leaders challenged to find the funds needed for business innovation.

As a partial remedy, some organizations are turning to application portfolio management (APM) to stay competitive, to trim and modernize their portfolio, and to better align application investments with business needs. The first half of this paper will explain the business case for APM, and provide a number of example scenarios illustrating how implementing APM can help organizations optimize their IT investments. The second half explores how IBM Rational® products can be used in various APM implementations, and offers key justifications for adopting APM to increase the likelihood of success.

### The compelling case for application portfolio management

As companies struggle to fund new applications to support the business’s competitive needs, CIOs and other technology leaders are beginning to view IT budgets from a larger perspective. We frequently see three cascading problems related to IT budgets in mature companies. First, a substantial percentage of IT funds are spent on maintaining and operating an application portfolio that is growing and becoming increasingly stale. If you do an Internet search on the terms “70 - 80 percent spent on maintenance,” you will find numerous citations across many industries regarding the high cost of simply keeping the lights on, especially in the IT arena. In IBM’s experience, the 70 - 80 percent figure is roughly correct; little funding is left for innovation (see Figure 1). Second, the growing and aging application portfolio leads to reduced business agility, since it takes too long

for updates to these systems to yield any effective response to an emerging business or marketplace need. Third, the aging portfolio exposes the company to multiple risks, including compliance risk, risk of losing people with critical skills or application knowledge, and risk associated with using old technology.

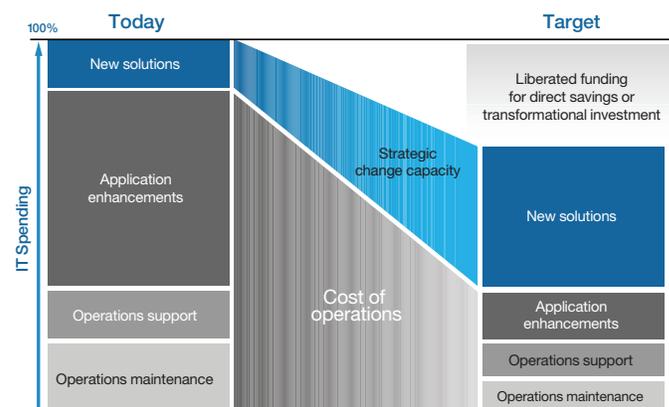


Figure 1: Keeping lights on consumes too much money, preventing companies from developing new capabilities that provides a competitive edge.

It appears that our industry has gotten the 80/20 rule wrong. Over the last decade, IBM has observed many large and medium sized companies who have invested in transparent and objective project portfolio management processes that typically provide good governance over the 20 - 30 percent of IT funds spent on new projects. Few companies, however, have a similar governance process for the money spent on basic operational and maintenance expenses.

This is where application portfolio management can make a difference.

Application portfolio management is the practice of continuously assessing the applications that run your business in terms of their business value, enhancement potential, cost, and risk. APM enables teams to make decisions about what actions to take with each of the portfolio elements. It provides a transparent and objective process for managing investments in existing applications and can help teams make better and faster decisions by using information gathering and analytics capabilities (see Figure 2).

In most organizations, information about the application inventory, the associated technology, financial performance, business value, technical debt and service quality is distributed across discrete and isolated organizations, a myriad of spreadsheets and systems, or in people's heads. This prevents meaningful comparison and analysis of this information to enable timely decision making. When companies take up an APM initiative, they produce an application inventory that contains the information and analytics needed, for example, to determine which applications can be discontinued or which enterprise modernization approach will be the most favorable for an application. APM feeds the project portfolio management process with project proposals for taking action to address the cost of management and maintenance. Actions can range from discontinuing or modernizing applications to replacing them with packaged applications.

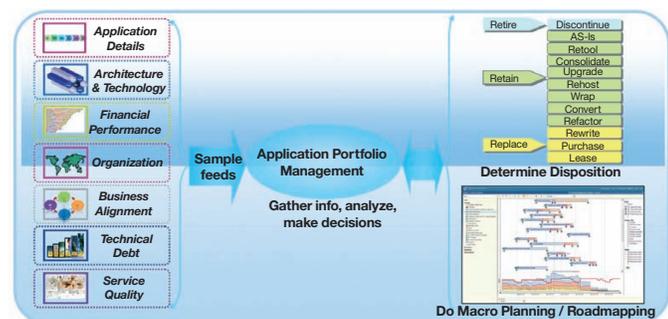


Figure 2: APM is focused on collecting the right information and providing the right analytics to enable effective decision making.

## Application portfolio management usage scenarios

Application portfolio management can be adopted in a variety of usage scenarios. Let's have a look at some typical scenarios, including what drives companies to adopt them, the benefits offered, and the typical payback time.

- 1. Consolidation.** Consolidation is often driven by mergers and acquisitions, and growth of duplicate applications as a result of organizational silos. Many organizations start with a consolidation and simplification of their application portfolio, since this approach can provide a fast payback time, allowing savings to be reinvested in further optimizations of the portfolio. Using this approach, organizations can achieve significant reductions of the application portfolio over a time period of a few years. For example, the IBM CIO office, as a part of their first wave of APM adoption, reduced their application count by 55 percent, thereby reducing application maintenance costs by 40 percent<sup>1</sup> over a three year period. The goal is to reduce the application count by an additional 50 percent by 2015 and reduce charge back costs by 30 percent.
- 2. Modernization.** Enterprise modernization can have a significant impact on the long term performance of a company. Benefits include the ability to reduce hardware, licensing, and maintenance cost, improve business agility, open up new business opportunities, and reduce risk associated with aging skills and technology. Most companies have huge mission-critical investments in existing applications and often find it difficult to capitalize on those investments because they do not know how to prioritize the modernization efforts. APM can help companies prioritize their legacy assets to highlight those that could yield maximum returns with an enterprise modernization program.

3. **Investment management.** Investment management is an objective and transparent process for aligning funds spent on application maintenance and renovation with organizational priorities. This includes establishing an investment model based on facts, and an effective process for prioritizing competing needs within a constrained budget. It provides an effective means of driving the desired changes to the cost structure of the organization over the longer term, especially when combined with some of the other approaches to APM.
4. **SLA optimization.** Consolidating the number of service level agreements (SLAs) you use can help you simplify operations. Better alignment of SLAs with the business criticality of an application can help you optimize operational spending. An IBM customer in the financial services industry used IBM's APM solution to reduce the number of SLAs from 17 to 4, while avoiding the assignment of high SLA levels to non-business critical applications, consequently reducing operational cost.
5. **Compliance.** Once an application inventory has been established, it is easy to extend its use to manage regulatory and industry compliance. For example, the bulk of information in the IBM CIO office's application portfolio is related to compliance.
6. **Cloud.** Leveraging the cloud is on top of many CIOs' minds, but which applications should be moved to the cloud first? By adding a survey to the APM repository, looking at factors such as seasonal fluctuations in load and technology alignment with the cloud operating environment, a prioritized list of the portfolio can be made with reference to cloud deployment of each asset.
7. **Rightshore/Outsource.** Similar to the cloud scenario, a survey can be added to determine which applications would be the most appropriate to move to a lower cost country or be outsourced. This survey could include factors such as expected feature churn or mapping required to available skills.

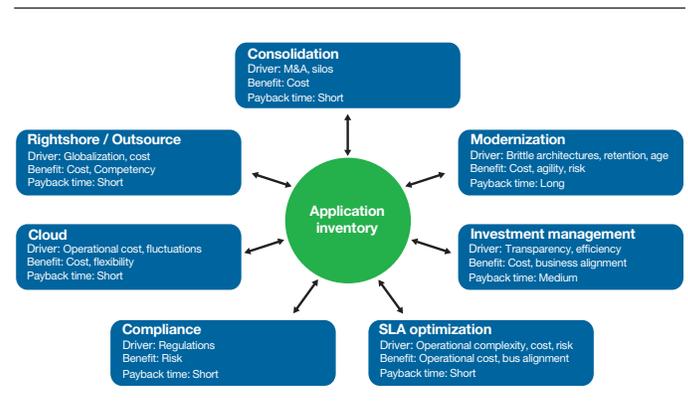


Figure 3: APM can drive a variety of IT optimization scenarios, each with its unique benefits.

## The IBM Rational integrated solution for application portfolio management

In our discussions with various industry leaders, we have found that of the organizations doing APM, many are using Microsoft Office productivity tools such as Microsoft Excel. However, the respondents of the survey observed that these tools do not scale well for managing an inventory of more than 50 applications. The remaining organizations use tools that fall into one of three capabilities, depending on the culture and heritage of the organization: Traditional project portfolio management (PPM), enterprise architecture (EA), or application mining and analytics.

Both PPM and EA provide a top-down perspective, which looks broadly at the business functions in play and drills down to discover what applications support those functions, focusing on cost-benefit analysis. The application mining and analytics approach provides a bottom-up perspective, which looks at each application in use, based on technical analysis. In our experience, bottom-up solutions have a high likelihood of failing to deliver the value of APM, since they do not properly evaluate the business context of an application before diving into a detailed technical analysis. PPM solutions have also frequently disappointed customers by providing a “blank sheet” as a starting point, thus forcing the customers to figure out for themselves what information to collect and what analysis to make.

EA-driven approaches are often hard to customize to an organization's needs, cumbersome to adopt, and they have a long time to value, often leading to the adoption of a model that requires overly extensive information gathering and analysis before critical decisions can be made. Nevertheless, teams that have successfully adopted EA tools are more likely to succeed with an EA-driven approach to APM.

There is a need for a simple APM solution that scales beyond basic productivity tools and provides an out-of-the-box information model and process that is business focused. To address this need, IBM has evolved an **APM information model**, which draws from lessons learned while working with partners and customers. This information model is delivered using **IBM Rational Focal Point™ software**, which is a decision support tool. The combination of Rational Focal Point software and the APM information model is designed to deliver the following capabilities:

- A customizable information model suggesting what information to collect for each application. The information model includes pre-defined elements to facilitate quick start-up.
- A robust, web-enabled solution for maintaining an application inventory, with rigorous security and change tracking capabilities.
- Web-survey and role-based views helping stakeholders provide the application information that the system prompts them to collect.
- Ability to automatically collect information from other information sources (using Microsoft Excel, CVS file format, SOAP and web-services interfaces).
- Workflows supporting the application gathering, assessment, and decision making process.
- Analytics supporting score carding and rapid and objective decision making (see Figure 4).
- Collaborative decision support helping a team set priorities and evaluate options based on agreed-to priorities.
- Support for project identification and definition, project road mapping based on resource and financial constraints and project selection based on desired selection criteria.
- Financial analysis, including ability to do what-if assessments for estimating return on investment (ROI) reflecting the inherent uncertainty in cost and benefit analysis of future transformation projects.

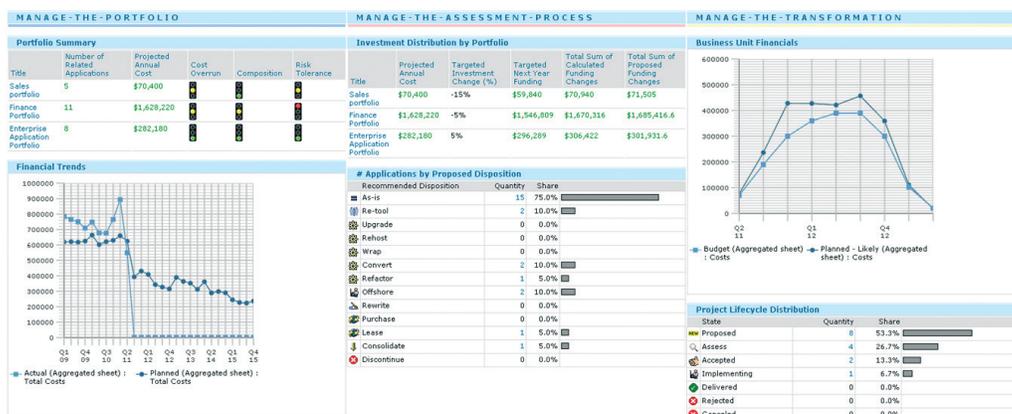


Figure 4: This sample out-of-the-box dashboard provides the ability to a) manage the portfolio by understanding financials, composition and risk associated with each portfolio, b) manage the assessment process by understanding if the budget targets for the next year are met, and how many applications are targeted for what disposition, c) manage the transformation by understanding the current status in the approval process of identified transformation projects, and if they can be executed within budget constraints.

As companies mature and require a more advanced solution, their entry-level investments can be incrementally upgraded to combine enterprise architecture and application analytics capabilities within a single APM solution. The APM effort can be initiated as a top-down business-driven effort and, if needed, complemented by a bottom-up perspective to help teams determine the optimum usage of all applications in the portfolio.

The integration of Rational Focal Point software with IBM Rational System Architect software can help the APM team reach application decisions based on information acquired from technical impact analysis. It also helps teams develop architectural roadmaps to complement project transformation roadmaps in Rational Focal Point software. For example, consider a set of applications that need to be refactored into a service-oriented architecture. A multiyear architectural roadmap can be defined in Rational System Architect software for this refactoring effort, with solution alternatives that can be compared based on detailed technical analysis and establishment of architectural heat maps. A corresponding project roadmap can be defined in Rational Focal Point software for identification of the right transformation projects, operating within given budget and resource constraints. The combination of an architectural roadmap in Rational System Architect software and a resourced project roadmap in Rational Focal Point software enables decision making in Rational Focal Point software to be based on technical realities, that is, what is possible to achieve given specific business priorities and constraints.

Application analytics tools such as IBM Rational Asset Analyzer software and CAST Application Intelligence Platform (available with CAST Software, an IBM Ready for Rational partner) play an important role by facilitating decision making using Rational

Focal Point software. These tools offer a rich understanding of applications, their structure and interdependencies and quality based on static analysis of the application's source code. As teams do deeper analysis of which modernization alternative may be the most appropriate, this type of information becomes essential.

Application portfolio management decisions require effective execution to provide value. After you determine which applications to modernize or consolidate and approve associated projects, you need to execute those decisions. The integration between Rational Focal Point software and IBM Rational Team Concert™ software, a key component of the Rational cross-platform ALM solution, can help you in the execution. Teams can jump start their development using Rational Team Concert software with information from approved projects in Rational Focal Point software and then feed status information back to Rational Focal Point software for monitoring of the execution.

To summarize, IBM can help companies get high value from an APM solution with relatively less effort by providing a rich APM information model. This model is evolved using a top-down solution delivered by Rational Focal Point software and is easy to customize and adopt. This solution can be extended with additional enterprise architecture (using Rational System Architect software) and application analytics capabilities (using Rational Asset Analyzer software and CAST Application Intelligence Software). Our cross-platform ALM solution can help in the effective execution of resulting consolidation and modernization projects.

## Adopting application portfolio management concepts in your business

Adopting application portfolio management involves technical, process, and organizational challenges and requires careful planning. Key considerations include:

- Incremental scope.** A common mistake is to start with a too big, too wide, and unfocused effort. IT teams should start small and expand. This principle cannot be overstated. You may focus on a combination of several criteria: For instance, a geographical region, a business unit, a certain set of technologies, applications with more than \$500K annual maintenance spend, and so on. But keep the number of target applications small, because you can always expand. Also, make sure that you are crystal clear regarding the end goal, such as: “We want to consolidate applications within our finance department, starting with applications that cost more than \$100K annually. We expect 100 applications to be within that scope. Our goal is to reduce the number of applications by 50 percent over three years, with a 30 percent reduction in charge back costs.”
- Start with a simple solution.** Over time, you may want to integrate your application repository with your configuration management database (CMDB), financial system, application analytics software, and many other systems. You do not need a high level of complexity and sophistication to enable some critical decision making, especially as you get started. Start by focusing on what decisions you need to make, and what dashboard instruments you need to support those decisions. What data do you need to collect to populate the dashboard, and how do you ensure high data quality to enable good decision making? With a limited scope, you will need a limited set of views, and limited data, and you can put simple processes in place to ensure high data quality. After you have driven some initial successes, you can grow the sophistication and reach of your solution.
- Manage organizational change.** APM is about providing an objective and transparent process for the management of your application portfolio. But, as with many broad or even company-wide initiatives, politics will play some role in the initial effort. Most people will pay lip service and salute the goals of APM, but experience shows that people will fight the transparency made possible through APM, since it spotlights their decisions made in the interest of their own group versus those made in the interest of the broader organization. In general, it is human nature to resist change. To succeed, you need to follow a proven organizational change process; for example, John Kotter’s eight-step process for leading change<sup>2</sup> is one of the more broadly adopted organizational change frameworks. His steps include building a sense of urgency, establishing a guiding coalition, and generating short-term wins, all aided by the recommendation to limit the initial scope and deploy simple solutions.
- Benefit from the right expertise.** We recommend that you identify and use people experienced in APM, especially those experienced in top-down, business-driven approaches to APM, to enable a quick win. If that expertise is not available in-house, there are many large and small systems integrators with the right experience. And you can avoid becoming a long-term captive audience to their expertise by insisting on a commercial solution for capturing the application inventory and doing the associated analysis, versus relying on spreadsheets and back office analysis which disappear with the consulting organization. You can also lower cost and generate short term wins by using an APM information model as a starting point.

## The Opportunity

Years ago, IT budgets allowed for development of newer, innovative applications for running the business more creatively and efficiently. But as those budgets have been slashed to focus solely on application maintenance, IT managers must find ways to invest in new, innovative solutions that fuel business growth and evolve current application assets into a flexible business architecture.

Adoption of APM is a key step towards a gradual move to enhance time-tested business capabilities with modern hardware and software, without disruption to revenue, supply chain activity, or operational goals. Within this overall modernization framework, an APM strategy can be used for a broad spectrum of efforts, from basic application assessment, to business planning, to a fully fledged enterprise architecture where APM constitutes one of many workstreams that keep the architecture highly flexible.

In today's business climate, quick wins are of the essence, and deploying a simple but robust solution with the right out-of-the-box APM information model can get you those quick results. At the same time, you need to make sure that the solution scales with increasing needs and a maturing APM process. IBM offers such a solution to get you started and subsequently expand as needed to encompass enterprise architecture, application analytics, advanced metrics warehousing capabilities and necessary integrations with existing systems.

### For more information

For more information on how APM solutions from IBM can help organizations optimize their IT investments, please visit our website at: [ibm.com/software/rational/offerings/ppm/portfolio.html](http://ibm.com/software/rational/offerings/ppm/portfolio.html) where you'll find more on APM and related products.

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<sup>1</sup> Application Portfolio Management: From assessment to transformation, by IBM Global Services, <http://www-935.ibm.com/services/uk/igs/pdf/esr-application-portfolio-management-from-assessment-to-transformation.pdf>

<sup>2</sup> See <http://www.kotterinternational.com/kotterprinciples/changesteps>



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