

Transform software delivery for better business results



Rational software

Business innovation and transformation

Governing the business process of software and systems delivery



Today's organizations are growing increasingly dependent upon software.

They rely on it to run their business processes. They use it to turn out sophisticated electronic products. Often software *is* the product—or a critical product component.

At the same time, software has steadily evolved away from a monolithic application model. Today, enterprises can power their operations and production by assembling capabilities from modular components, systems and services built by multiple creators, using an array of standards and platforms. To stay competitive, most organizations are continually creating and updating these heterogeneous applications to help them meet business imperatives, including:

- Capacity for commerce on a global scale.
- Flexibility to respond to changing marketplace demands and agility to deliver high-quality software quickly and cost-effectively.
- Ability to address mandates and manage risk.



Beyond development: new demands to deliver value

These trends have brought new responsibility to teams that create, deliver and maintain software. Their work may now involve:

- Creating reusable services.
- Acquiring and integrating new applications.
- Adding new functionality to existing applications using open source.
- Integrating packaged applications and customized third-party packages.
- Linking disparate data to provide meaningful, accessible information.
- Modifying systems to improve performance and reliability.
- Improving application security to reduce business risks.

Because the resulting software has greater strategic value than ever, the processes for accomplishing these activities have become critical as well. Creating value through software means having processes that:

- Align technology with business.
- Effectively manage risk and address compliance mandates.
- Improve responsiveness and increase efficiency.

This responsibility demands team management approaches that increase accountability without stifling creativity; that reduce time spent on administrative

tasks; and that provide quick access to required information, while automating routine tasks.

All of these demands add up to a need for better governance that encompasses the lifecycle of the software and systems delivery process. In today's world where teams and functions are organizationally distributed around the globe, good governance can help ensure strategic alignment with business objectives; role and responsibility clarity; and continuous visibility into project plans and progress—no matter where the work takes place.

What is good governance?

Governance consists of two components:

- Establishing chains of responsibility, authority and communication that empower people to take action.
- Establishing measurement, policy and control mechanisms that enable people to effectively carry out their roles and responsibilities.

Effective enterprises have interlocking governance structures at all levels. Within a software and systems delivery organization, such a structure helps ensure that projects, people and processes are aligned with business objectives, and that the end product will be of high quality and delivered on time. It also enables managers to allocate and control project resources effectively and help ensure the best possible return on investment.

IBM offers a comprehensive portfolio of processes, products and services to support the transformation of organizations from cost-based software development to managing and measuring software delivery as a core business process.



Alignment, control and efficiency

The fundamental objective of such a transformation is to align every business process with the enterprise's strategic goals. Whereas traditional project approaches to software development often focus on a given business silo, in a well-governed environment, managers are driven by priorities. IBM Rational® solutions help them identify and prioritize new projects; analyze business and technology requirements; perform impact analysis on existing systems; and scope projects appropriately.

Once a project is under way, the constant changes that stakeholders request pose an ongoing challenge to maintaining alignment with strategic priorities. A well-governed development and

delivery process can mitigate this risk by providing managers with built-in measurement and iterative processes. From initial investment through deployment and assessment, IBM Rational solutions provide continuous visibility into project changes and progress, as well as superior decision support, with:

- Real-time analytics linking financial and software information.
- Real-time resource management.
- Comprehensive dashboard reporting and drill-down capabilities.
- Comprehensive lifecycle traceability and quality management.

These coordinated management controls result in greater efficiency throughout the development and delivery organization.

Achieving business imperatives

Let's look more specifically at the role that good governance at the software and systems delivery level can play in helping the enterprise meet those business imperatives we noted earlier.

Capacity for commerce on a global scale

The complexity of operating global businesses today impacts how organizations deliver software and resulting services and products. Governing geographically distributed projects is an essential component of increasing global business capability. Organizations need to:

- Accurately assess the best distribution of project resources.
- Enable effective collaboration among teams in different time zones, countries and companies, including external vendors.
- Keep multisourced projects aligned with changing business requirements.

Rational solutions support judicious resource allocation by giving organizations an aggregated, portfolio-style view of their software-related resources, assets and investments. Applying objective measures, organizations can continually check alignment with business goals, assess project value and prioritize resources accordingly.

As complex software projects morph their way through development, the automated control and communication infrastructure keeps multiple teams

on top of changes. Every member can assess the potential impact of these changes on other projects—even those on different continents or in different parts of the enterprise.

Flexibility to respond to changing business demands and agility to deliver high-quality software

Creating modular systems is one of the most cost-effective ways that software delivery organizations can support business flexibility and agility. These systems enable reuse of existing technology assets and processes in new ways. Those based on open computing standards maximize interoperability and scalability, so that organizations can react quickly to new marketplace opportunities. They afford maximum flexibility for specifying development solutions. Organizations can make the best possible use of available technologies, open source and talent and choose the most cost-effective development strategy for their needs—whether it's buying new functionality, evolving an existing application, building custom code or integrating a complete packaged solution.

However, as companies look to take full advantage of modular technology, including service-oriented architectures (SOAs), there is an even greater need to put better governance mechanisms in place. Steps in the process include:

- Identifying core business areas that could use modular technology most profitably, and then designing or modifying those areas' business processes to support it.
- Assembling software development and delivery teams with multiple skill sets, encompassing knowledge of new standards as well as legacy systems.
- Measuring and managing the lifecycle of services to help ensure quality, performance and reusability.

IBM provides what companies need to enable, automate and continually improve software delivery processes. We offer comprehensive process modeling and guidance based on best practices harvested from more than 25 years of in-depth, real-world experience. Managers can start by capturing current activities and workflows across the enterprise and then can simulate alternative scenarios to determine where technology



improvements would deliver the greatest business value. This modeling capability makes it easier to prioritize new initiatives in the context of existing projects as well as other internal process improvement needs.

And for organizations looking to implement SOA, IBM offers a full complement of products and services optimized for effective SOA governance and lifecycle management, based on IBM expertise in process modeling and best practices.

Ability to comply with mandatory regulations and manage risk

Most financial services companies must deal with the impact of hundreds of regulatory changes every year. Today's software delivery organizations must be able to support:

- Internal policies and controls.
- Government legislation specific to every industry and country in which their company does business.

Compliance can be particularly challenging for organizations that outsource

project deliverables to partner companies in multiple countries. IBM Rational helps organizations meet this complex challenge by providing ways to specify and track changing regulatory requirements across the entire development and delivery lifecycle. This lifecycle traceability is supported by built-in auditing and reporting capabilities.

From asset discovery through deployment, IBM Rational solutions can provide a holistic view of an evolving technology to all stakeholders, including:

- The line-of-business organization that drives business strategy.
- The software delivery team that enables the strategy.
- The services delivery team accountable for day-to-day operations.

This top-down and bottom-up visibility into project progress, quality and operations is supported by a consistent set of correlated data. Business and technical managers can pinpoint issues and facilitate rapid resolution—to ensure that the project will achieve expected business benefits.

During development, stakeholders

can engage in effective, collaborative decision making based on objective measures. Once a solution is in production, comprehensive monitoring capabilities empower operations teams to effectively resolve problems in complex, multitiered environments.

Dynamic provisioning automates the time-consuming and error-prone task of updating application software and middleware across multiple servers, clients and pervasive devices. And business-process-monitoring capabilities allow teams to compare expected results with actual business results. With the IBM Rational process framework, each process iteration combines a mix of analysis, design, construction and testing activities, and results in a demonstrable form of software that can be validated and refined by users. Producing multiple iterations helps reduce project risk by providing tangible checkpoints along the pathway to a complete solution.

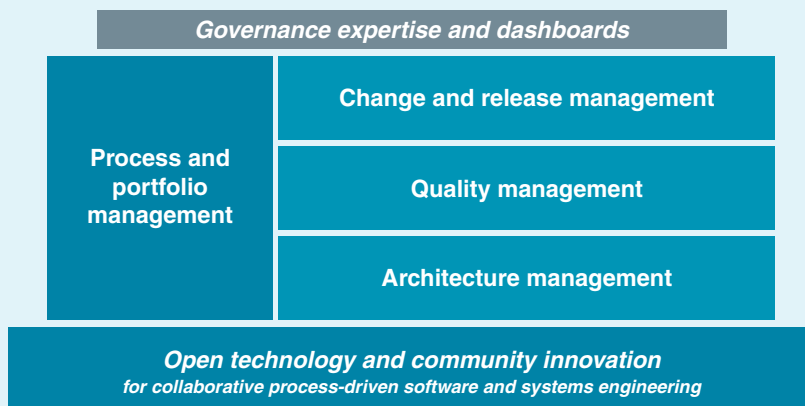
IBM Rational Software Delivery Platform

The foundation for better governing software and systems delivery, this comprehensive, open and configurable solution provides transparency across the lifecycle and enables extended team members to collaborate and communicate effectively.

The IBM Rational Software Delivery Platform is:

- **Comprehensive.** It provides automated lifecycle support for every member of the development team as well as business and operations stakeholders.
- **Open.** Based on standards spanning the Microsoft® Windows®, UNIX® and Linux® operating systems and mainframe environments, the platform supports a wide spectrum of programming languages, integrated development environments (IDEs) such as Eclipse, and cross-development environments for real-time and embedded-system developers.
- **Modular.** An integrated product that's adaptable to unique team and technology environment requirements, the platform allows organizations to choose the exact capabilities and customized adoption path suited for their needs.
- **Proven.** Based on field-tested technologies and best practices used by thousands of high-performance software teams, the platform is also optimized for key software business processes including:
 - Global development and delivery.
 - Development compliance.
 - SOA governance and service lifecycle management.

An extensive IBM partner ecosystem provides additional industry- and technology-specific capabilities. These include Ready for IBM Rational software Business Partner solutions that provide both product and consulting expertise to accelerate initiatives.



Profiles in transformation: Hotel and hospitality

An international hotel group faced a barrier to continued profitability and growth: an aging online reservation system that could not keep up with the company's growing customer base and lacked the personalization and native language capabilities required to compete globally.

IBM Rational solution

Using the IBM Rational Software Delivery Platform, the company's development team built a reliable, services-based infrastructure that integrates multiple legacy systems and scales to handle spikes in traffic and continued growth. Customers can now book reservations in multiple languages and benefit from personalized access to rewards programs.

Business value

- Gross Web bookings more than tripled—from US\$800,000 per day to US\$2.5 million per day—over 18 months.
- An additional US\$350 million in revenue came from new customers alone.



An iterative approach to the business process of software and systems delivery



At the core of the IBM Rational Software Delivery Platform is the IBM Rational Unified Process®, or IBM RUP®, solution. It enables companies to use an iterative business process based on harvested best practices that results in early, demonstrable results and more effective measurement of real progress. Using RUP helps to reduce the risk of project failure and promotes consistency, predictability, productivity and efficiency organization wide. Following is a brief description of what a RUP iteration might encompass, supported by other components of the IBM Rational Software Delivery Platform.

Evaluate transformation initiatives

Capture current business activities and workflows, and simulate alternative scenarios to determine the best opportunities for business transformation.

Identify a solution and analyze requirements

Identify a possible solution and generate financial analyses for it. Then, document both business and technology requirements. Model user interactions with the Unified Modeling Language (UML) to give teams a common and precise understanding of your proposed changes.

Design and construct

Use your choice of code-based, model-driven and rapid application development solutions to create your application. Find IBM Rational products optimized for your technology environment, team skill level and development paradigm.

Integrate and test

Validate your solution to ensure that it functions as designed and at acceptable performance levels.

Deploy

Plan and execute migrations to your production environment. Automated provisioning and configuration management capabilities ease the implementation of coordinated changes to business processes and IT systems.

Monitor and assess

Monitor applications and essential system resources across your multiplatform environment to detect potential problems and automate recovery from critical situations. Use a performance-based feedback cycle to compare the projected value of an investment against actual results.

Profiles in transformation:

Public sector

A midwestern state benefits council was using a labor-intensive, manual process to administer and manage benefits for 36,000 state employees in 100 agencies. An outdated system and small staff were causing errors, processing delays and problems in meeting growing demands.

IBM Rational solution

The council implemented an online enterprise application that gives employees access to information through a Web portal, providing timely services, faster response, less paperwork and integration of all processes. IBM Rational Software Delivery Platform products provided common requirements management, automated testing, and defect and change tracking support to help produce this reliable, high-quality software solution.

Business value

- Savings of US\$100,000 per year with automated processing
- Data now available on demand, 24x7
- Virtual elimination of printing and mailing costs



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