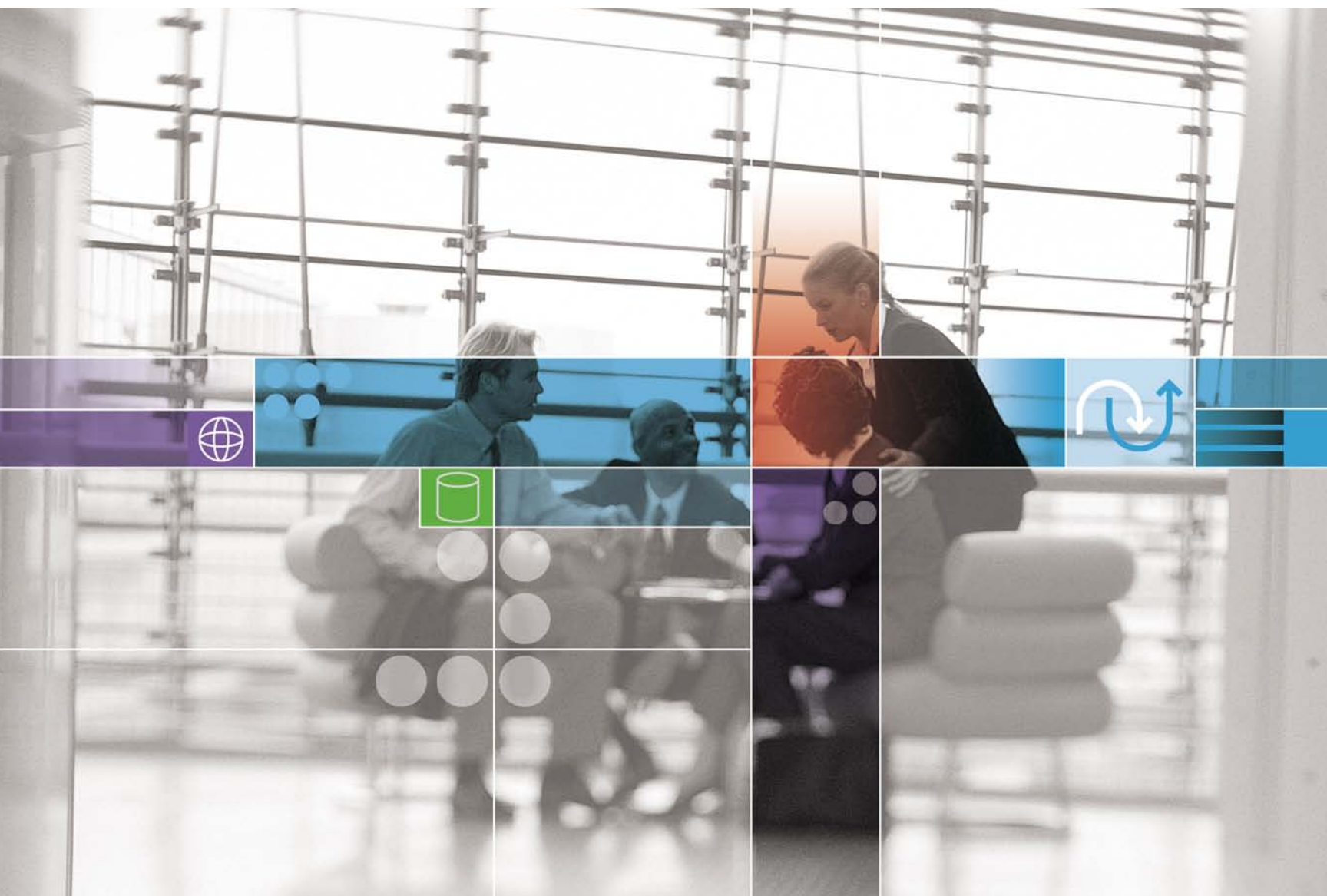


Building your business with the IBM Software Development Platform



Middleware is Everywhere | Can you see it?



An on demand business is an enterprise whose business processes—integrated end-to-end across the company and with key partners, suppliers and customers—can respond with speed to any customer demand, market opportunity or external threat. This new wave of enterprise transformation requires tighter coupling of applications and business processes, more collaborative business relationships and an enhanced emphasis on software development.

Better software equals better business

The drive to differentiate

Today's on demand enterprise thrives on continuous business differentiation. This differentiation is driven by business practices that:

- *Consistently deliver innovative products*
- *Improve operational efficiencies.*

Peek under the covers of virtually any product, service or system that sustains competitive advantage and you'll find software in action. Whether applied to a legacy system transformation, packaged application implementation or new development project, software development is the not-so-secret weapon that allows organizations to codify their unique business knowledge and set their products and services apart from the competition.

By improving their software development capability, organizations fundamentally improve their ability to compete in an on demand world.

The high rate of failure

Software development is a team-based activity. Business stakeholders, information technology (IT) organizations, and operations teams all work together towards a common goal. But all too often, these extended teams fail to produce meaningful results. Often the best business ideas are not discovered or adequately communicated to the technology team. But even when they are, execution failures are rampant, causing over 60 percent of projects to miss their mark.¹ Changes are overwritten, test failures are not recorded and dependencies poorly understood. These inefficiencies cause delays, frustration, and ultimately, a loss of business agility.

A strategic business process

By recognizing software development as a strategic business process—a series of related activities that should be integrated and automated—organizations can transform their software development activities into a source of strategic advantage. In so doing, they join an elite rank of organizations that have successfully embraced a business-driven software development process that yields both top-line business benefits and bottom-line productivity improvements. These organizations use software development to drive their business success.

The business-driven development organization takes a holistic approach. It recognizes that software development automates other business processes. It also knows that it is a strategic business process in itself, composed of multiple interrelated activities: requirements and analysis, design and construction, software testing, and so on.

Software development benefits from the same type of horizontal integration commonly applied to other business processes, such as supply chain management, customer relationship management and human resources management. The business-driven organization delivers software with the power to transform, create new revenue sources and drive business results.

IBM Software Development Platform: Complete, open, modular and proven

Key to the on demand enterprise

For business and technology leaders who recognize the importance of software development in creating business value, IBM offers a proven foundation: the IBM® Software Development Platform.

This complete and configurable solution automates software development by integrating disconnected development activities into a unified whole. Its common toolset, vocabulary and workflow are shared by all software development team members.

The IBM Software Development Platform is:

- *Complete. It supports every member of your development team as well as business and operations stakeholders to drive business value throughout your software lifecycle.*

- *Open and extensible. You can leverage existing assets and choose from a wide array of development languages, deployment platforms and partner technologies—including Microsoft® .NET, BEA and Oracle solutions.*
- *Modular. You can choose the exact tools and adoption path that best fit your needs.*
- *Proven. It's based on tools and best practices that are the choice of thousands of high-performance software teams.*

The IBM Software Development Platform spans Windows®, UNIX®, Linux and mainframe platforms. It supports a wide spectrum of programming languages, integrated development environments (IDEs) and more than 100 cross-development environments for real-time and embedded system developers. With 18 core products and dozens of complementary and technology-specific extensions, the IBM Software Development Platform allows you to choose the optimal solution for your team, role and technology environment.

Profiles in transformation: Hotel and Hospitality

WHY BECOME ON DEMAND:

An international hotel group was facing a barrier to continued profitability and growth due to its aging online reservation system. The system couldn't keep up with the company's growing customer base, and lacked the personalization and native language capabilities required to compete on a global scale.

SOLUTION:

The company set out to streamline business processes and integrate with business partners by modernizing its existing systems. It built a reliable services-based infrastructure that integrates multiple legacy systems and offers the scalability required to handle spikes in traffic and continued growth. Customers can now book reservations in multiple languages and benefit from personalized access to rewards programs. The team used tools in the IBM Software Development Platform to meet the technical and business requirements of the project.

BENEFITS:

- *With a new services infrastructure, the company's gross Web bookings have more than tripled—from \$800,000 (USD) per day to \$2.5 million (USD) per day over 18 months.*
- *Increased usability of the new system has driven an additional \$350 million (USD) in revenue from new customers.*



What is software development?

Software development is a strategic business process that integrates and automates other business processes, such as supply chain management and customer relationship management. Businesses engage in software development whenever they:

- ***Integrate*** existing applications, either internally or with customers or partners
- ***Modernize*** existing applications
- ***Extend*** packaged applications with custom code
- ***Build*** new applications
- ***Deploy*** applications to a production environment.

A complete team solution

IBM tools allow each member of your team to perform their specific role and share their work as it progresses through the project lifecycle. Your team will appreciate best-in-class tools that allow each role to work more productively, at the right level of abstraction. Every investment of time and effort—from understanding a business process to finding and fixing a software defect—is fully leveraged for the benefit of the entire team.

- **Project Managers** manage project process, scope, change control, task assignment, scheduling and requirements to ensure on time and on budget delivery of software that meets business needs.
- **Architects** define the overall structure, layout and security of your operating environment, to ensure that your infrastructure, systems and solutions are well positioned to meet evolving requirements.
- **Developers** take advantage of frameworks, patterns and rapid application development techniques to quickly build quality applications.
- **Data Architects** design and model database schema to support information needs in an on demand environment.
- **Testers** leverage automated testing tools to ensure the functionality, performance and reliability of applications under construction.
- **Operations Managers** efficiently integrate changes into production environments and monitor their impact on the health of the IT infrastructure.



The IBM Software Development Platform helps:

- **Business Executives** improve return on investment (ROI), reduce project risk and promote project visibility and transparency across both technology and business organizations.
- **Business Stakeholders** ensure business needs are understood, communicated and optimized through full participation in an iterative development lifecycle.
- **Business Analysts** understand, simulate and monitor business processes in order to identify and implement the greatest opportunities for business optimization.

Profiles in transformation: Financial Services

WHY BECOME ON DEMAND:

One of New Zealand's leading financial service providers was at risk of losing business to competitors with more customer-focused Internet offerings. It needed to quickly develop more innovative currency applications and customer-focused Internet offerings in order to meet market challenges and maintain customer loyalty.



SOLUTION:

The bank decided to bring development of applications in-house with tools from the IBM Software Development Platform. The flexible solution integrated both new and existing IT assets into a coherent development infrastructure that enabled the bank to quickly deploy new and differentiating Internet-based offerings.

BENEFITS:

- Added 40,000 new users
- Increased profits by 17 percent
- Reduced customer support calls.

The Eclipse advantage

The IBM Software Development Platform is built on a foundation that enables unprecedented automation and team collaboration throughout the development lifecycle: the Eclipse architectural framework.

Eclipse is both an open source software development project—with over 100 active vendor participants—and a rich foundation for providing shared services across your tooling environment. Part of the Eclipse project is the Eclipse Modeling Framework (EMF), which offers essential capabilities for code generation, editor support, tool integration and meta-data management.



With Eclipse at its core, the IBM Software Development Platform:

- **Provides custom views of common projects.** Role-based user interfaces enable your team members to work in a view that is optimized for their unique needs and perspective of the broader development project.
- **Reduces latency across tasks.** Unlike previous-generation development environments, Eclipse views share the same underlying data—only the perspective changes. Whenever anything under construction changes—a new business process, user requirement, test result or deployment configuration—team members can instantly assess the impact of that change. This gives teams the immediate feedback they need to accelerate success.
- **Enables a rich partner ecosystem.** The Eclipse framework makes it easier for both IBM and other vendors to integrate their products by mapping meta-data to a shared set of models. You benefit from a vibrant tools and services ecosystem that is supported and extended by a broad community of developers, partners and independent software vendors.



Profiles in Transformation: Public Sector

WHY BECOME ON DEMAND:

A Midwestern state benefits council was using a labor-intensive, manual process to administer and manage benefits to its 36,000 state employees in 100 agencies statewide. An inefficient, outdated system and a small staff of people was causing errors, processing delays and problems in meeting growing demands. It needed a streamlined, simple, cost-effective approach that would integrate disparate systems and increase responsiveness.

SOLUTION:

The council implemented an online enterprise application that gave employees access to information through a Web portal, providing timely services, faster response, less paperwork and integration of all processes. Software quality was the key to the solution. Key products from the IBM Software Development Platform provided common requirements management, automated testing, and defect and change tracking support.

BENEFITS:

- *Automated processing yielded savings of \$100,000 (USD) per year*
- *Data previously available in days is now available on demand, with 24x7 availability*
- *Printing and mailing costs virtually eliminated.*

The business-driven development process

Successful business transformation requires the close collaboration of three sets of stakeholders:

- *The Line-of-Business organization that drives business strategy*
- *The Software Development team that enables that strategy*
- *The IT Operations team accountable for day-to-day production operations.*

The IBM Software Development Platform provides a common discovery-through-deployment experience that unifies all three domains. The result: a technology environment that leverages your organization's collective strength to achieve breakthrough results.

Model the Business Process

Successful business transformation requires both knowledge of existing business processes and the ability to visualize alternatives. IBM solutions enable you to capture current business activities and workflows and simulate alternative scenarios to determine the best opportunities for business transformation.

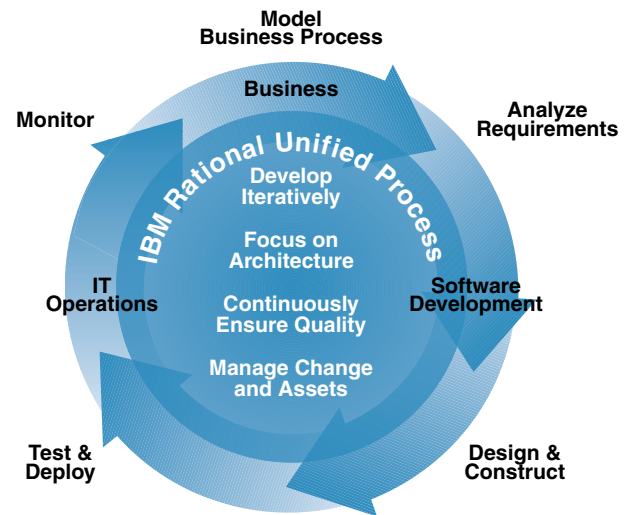
Analyze Requirements

Once a solution has been identified, the next step is to define its supporting business and IT requirements. IBM solutions help you generate a financial analysis for your proposed solution and document both its business and technology requirements. By modeling user interactions using the industry-standard Unified Modeling Language (UML), your team will share a common and precise understanding of proposed changes.

Design & Construct

The next step is to translate requirements into technology solutions. Because no single tool fits all team needs, IBM offers the broadest spectrum of code-based, model-driven, and rapid application development solutions for developing high quality software. Your team can choose the tool optimized for their technology environment, skill level, and development paradigm.

The business-driven development process



Test

Each iteration is validated to ensure that it functions as designed with acceptable performance. IBM testing tools accelerate quality assurance activities as they build a valuable foundation of reusable test artifacts.

Deploy

IBM deployment tools support a managed approach to planning and executing migrations to your production environment. This holistic approach eases the implementation of coordinated changes to both business processes and IT systems.

Monitor

Successful organizations not only automate business processes, but also monitor their execution and dynamically adjust them in response to real-time feedback. A performance-based feedback cycle allows you to compare the projected value of an investment to actual business results, and make the necessary adjustments to maximize business value.

Imperatives for successful software development

IBM has been privileged to work with hundreds of the world's leading development teams. As a result of this work, IBM has identified a core set of principles that are highly correlated with project success. The IBM Software Development Platform provides a richly supportive environment that encourages teams to adopt these four fundamental principles.

Develop iteratively

An iterative development process yields increasingly improved versions of a software system until it is ready for deployment. Each iteration includes a mix of analysis, design, construction and testing, resulting in a demonstrable form of the software that can be validated and refined. With the IBM Rational Unified Process® methodology at its core, the IBM Software Development Platform provides all team members with a common understanding of how software is created in an iterative fashion.

Focus on architecture

A properly designed architecture ensures that your application will meet business needs, perform acceptably and be adaptable over time. IBM solutions encourage the adoption of service-oriented architectures, architectural building blocks that allow teams to selectively combine and expose functionality without compromising overall system integrity.

Continuously ensure quality

Too often, software development organizations do not test for software quality until late in the project lifecycle. By continuously ensuring quality from the beginning, teams are better able to deliver expected results at lower cost. IBM software quality solutions span development, testing and operations teams to forge a united, quality-aware organization that can reduce organizational downtime.

Manage change and assets

The on demand enterprise thrives on controlled change. IBM change management solutions help you implement a managed approach to change that also guards against corruption of assets. With their outstanding support for team collaboration and parallel development, IBM solutions have been at the forefront of making virtual and distributed teams more productive.

For more information

To learn more, contact your local IBM Representative or visit our Web site at:

Developers

ibm.com/developerWorks/platform

IT Managers/Executives

ibm.com/software/developmentplatform

Strategic software development capability enables an enterprise to be “poised and ready” — able to respond to market, supplier and customer demands by realigning business capabilities to meet new challenges.

—Saugatuck Technology, *Why Software Development Matters: Competitive Advantage and the On Demand Enterprise*, March 2004



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1 Standish Group, *2003 Chaos Chronicles*, 2003



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