Six capabilities of a development platform that deliver a greater return on investment

IBM

Although companies were once able to invest in resources that promised a return on investment (ROI) in months or even years, times have changed. Smart organizations need to invest in solutions that increase efficiency and decrease costs every day.

To thrive in a business climate that demands responsiveness and rapid time to value, an IT organization must accelerate application development and compress the time it takes to deliver targeted business value. It needs to easily evolve applications to keep pace with user needs and expectations—without disrupting IT resources and budgets. Faced with a dizzying array of application development platforms, IT organizations must be smart about choosing tools that empower them to innovate, integrate and extend their existing systems—instead of introducing new layers of complexity that impose development and maintenance headaches.

Respond to challenges and opportunities with the right development tools

The fast pace at which businesses and marketplaces move and change can be exciting, overwhelming, and full of both challenges and opportunities. To remain competitive, organizations need to respond quickly to these changes—but with budgets and spending under near-constant scrutiny, they need to get more out of existing assets, make wise investments and enable employees to work smarter.

The mantra of "do more with less" applies to every business practice, but especially to IT and custom application development. Today's developers are expected to quickly create and deliver intuitive, modern applications that enable line-of-business users to be more productive and collaborative and to meet the changing needs of their customers. But, because of stagnant spending, many developers are stuck with limited development tools and environments that require time-consuming hand coding for every functionality, integration and modification.

To respond to the needs of its organization and marketplace, developers must have tools that support leading technologies and extend existing assets—while offering the best potential for flexibility, growth and integration. In short, they need tools that leverage the best elements of an IT infrastructure in a way that can evolve with the business.

Accelerate time to value and ROI with a versatile development platform

IT organizations can improve the productivity of both end users and developers by adopting a rapid application development and deployment (RADD) platform for collaborative or workflow-driven business applications. RADD platforms dramatically improve the efficiency and productivity of developers by enabling continuous improvement through agile, iterative development processes. Rapid, iterative prototyping allows developers to quickly get feedback from application owners and to help ensure that they are delivering what the business users need. Traditionally RADD has required some compromises in usability, features and execution speed to provide quick deployment and business process support. However, recent advances enable developers to create robust applications while still saving time.

These advances include leading-edge capabilities and versatile tools that help ensure an accelerated ROI and proven value practically at first use. There are six in particular that have proven to complement the RADD approach and are as follows:

- Streamlining development with a comprehensive platform
- Integrating with best-in-class tools and capabilities using an open platform
- Accelerating and standardizing builds with automated development capabilities
- Using one application model that can be quickly tailored for different user experiences
- Making the most of existing investments with modernization and mashup capabilities
- Offering collaborative capabilities to developers and end users.

1. Streamlining development with a comprehensive platform

Many IT organizations have taken a piecemeal approach to consolidating their development environments, through a process of accretion. However, tacking disparate tools and components onto multiple platforms requires time-consuming point integrations and often creates an unmanageable development environment.

Investing in a comprehensive development platform that is designed as one cohesive architecture improves productivity and usability because developers don't have to force components to work together. It speeds application development and allows developers to use tools optimized for the programming model and platform services.

A truly comprehensive platform should include a robust data store, an integrated replication and a directory, as well as business continuity and failover capabilities. An open and extensible framework based on Java™ and Open Service Gateway Initiative standards can help maximize flexibility. To expedite development of Web 2.0 applications, a JavaScript™ framework—such as Dojo, which includes Ajax services—should also be included. It should be tightly integrated with messaging services to route information to individuals or to support applications that feature customized business logic.

A very important component of an inclusive platform is a granular layer of security that is built into the architecture. Such a holistic security solution enables developers to easily incorporate security at a micro or macro level or to encrypt data within a document, without having to leverage other security tools. Moreover, including security in the core design makes it much easier to build and maintain applications that use permissions and roles, which help maximize the ability to share what is appropriate, while protecting what is sensitive.

2. Integrating with best-in-class tools and capabilities using an open platform

Proprietary application development platforms and tools lack the ability to easily incorporate other assets or services. Utilizing an open and extensible platform means developers can enhance their development environment and run-time platform as needed. Moreover, open source and third-party libraries contain a wealth of valuable information that should be leveraged rather than duplicated.

Two important assets that help maximize developer productivity are extensible integrated development environments (IDEs) and a strong tools community. By basing a development tool on an extensible platform, developers can tailor their development environment to meet their needs. In particular, Eclipse developers derive value from a platform that is constantly enhanced by the largest development tool community in the world. They can accelerate and cut the cost of projects by building, sharing and consuming reusable user interface (UI) artifacts—such as widgets and web, Ajax or JavaScript frameworks—contributed by a peer.

Moreover, a standards-based web development programming model can support several common programming languages—such as HTML, XML, CSS and JavaScript—at novice and expert skill levels.

3. Accelerating and standardizing builds with automated development capabilities

Developers benefit when the development tool they are using supports quick code generation and reuse of existing assets. A RADD IDE that can drag and drop controls and define their behaviors by setting properties enables a developer to quickly iterate through multiple designs and not spend time writing low-level code. Over time, developers can establish a library of reusable UI assets and business logic that help ensure a consistent experience and maximum productivity. An IDE that supports application skinning and theming allows developers

to tailor an application's look and feel for consumers. The ideal development environment would also enable developers to create application templates to simplify the deployment and maintenance of application instances.

Additionally, an important accelerator is sample and templated code. By using a development platform that offers out-of-the-box application templates and prebuilt tools, businesses can shrink development costs and time. An end user-style Web 2.0 development interface with drag-and-drop technology can also help developers quickly create collaborative applications, regardless of their language expertise or skill level.

4. Using one application model that can be quickly tailored for different user experiences

With the right platform, developers can easily deploy and maintain applications at all stages of their life cycles: from preproduction to deployment, including regular iterations that result from changing needs and opportunities. To achieve the broadest possible usage, a platform must have robust deployment services to deliver new applications and roll out changes to existing applications, as well as a single, unified application model that supports desktop, web and mobile experiences. The platform should enable developers to quickly tailor an application for a variety of user experiences, each with its own intuitive UI.

Furthermore it must accommodate multiple deployment modes, including the cloud. This reuse of underlying architectures results in cost savings, higher productivity and better use of time and resources. And deploying applications to many models allows companies to meet the varied end user expectations for applications that users increasingly expect.

5. Making the most of existing investments with modernization and mashup capabilities

As end users take the slick interfaces of social media and other popular consumer applications for granted, business applications become outdated. Familiar and intuitive UI constructs smooth the learning curve and increase satisfaction. A development platform that can modernize existing applications with a more user-friendly interface can extend the life span of tools that have already proven their value and effectiveness in production environments. Organizations can avoid the risk and cost of retraining staff by refreshing rather than rewriting the code.

Moreover, a platform should empower developers to easily integrate, mash up and automate existing applications from across IT systems—so end users can quickly obtain the information they need, when they need it. This integration allows people to have information and actions available at a glance or within a mouse click.

6. Offering collaborative capabilities to developers and end users

Finally, a modern RADD environment demands built-in collaborative capabilities, which can enable developers to be more efficient and end users to be more productive. Social and collaboration software can enable developers to share code, models, prototypes and knowledge more easily. The ideal environment will also include collaborative capabilities for end users that can be built into new or existing applications. By enabling developers to quickly infuse applications with intuitive collaborative capabilities, they can easily add collaborative features and functions to practically any application. End users can reach the people they need through the most effective form of collaboration.

- Email and calendaring—Communicate efficiently and see coworkers' availability at a glance
- Instant messaging—Contact colleagues in real time instead of waiting for a return email or phone call
- Project management—Store all project-related information in one convenient platform
- Document and file sharing—Update content in real time and reduce versioning issues
- Knowledge sharing—Heighten the level of knowledge and education across the enterprise
- Content management—Easily organize, find and share practically all kinds of content
- Blogs and wikis—Share information and create web content together

- RSS and feeds—Receive real-time content updates to a desktop or reader
- Online meetings—Collaborate regardless of where team members are located
- Teamrooms—Access and interact with the people, information and project materials

Protect investments to be competitive today and positioned for tomorrow

Although it is important to achieve a rapid ROI in today's fast-paced business climate, it's critical to invest in proven technology that provides continued returns. IT organizations should make investments that will be protected over many years. IT architects should evaluate the advantages as well as the costs of new technologies as they become available. The platform should be extensible, so it can accommodate new capabilities and programming models for use in existing applications. Extensibility helps eliminate the dreaded rip-and-replace cycle that forces developers to constantly rewrite the same solutions, rather than solving new business problems.

Moreover, stability lends itself to investment protection and value. A development platform that can create a stable application that runs for ten years, while continuously being adapted to new user needs, delivers an incredible ROI. By trusting an established solution provider, developers can be confident that their investments will be supported well into the future.

The IBM solution for RADD

Based on many years of application development for collaborative and business logic applications, IBM offers best-in-class tools, experience and strategies to help companies obtain near-immediate gains and ROI for custom business solutions.

The open standards-based IBM Lotus® Domino® platform features XPages technology, which provides one programming model for developers to build applications for desktop, browser and mobile experiences. This comprehensive platform integrates secure and semistructured data storage, application-level security, robust user directories and built-in messaging services that support human-facing workflows.

The IBM Lotus Domino Designer tool facilitates an iterative development process in which business requirements can be quickly prototyped, tuned and deployed to provide a compelling Web 2.0 experience. The graphical drag-and-drop, Eclipse-based environment allows developers to rapidly build web, Lotus Notes and Lotus Domino applications. The tool includes XPages technology, which is built on JavaServer Faces (JSF). XPages technology provides a layer of abstraction on JSF, allowing developers to build online or disconnected applications using HTML, CSS and JavaScript skills, along with a set of modern web controls, Dojo and built-in Ajax services.

Developers use the Lotus Domino platform to support industry-specific development objectives with built-in, customizable frameworks and templates. And they can build an application once, launch it on practically any deployment model—including the cloud—and make it accessible through the web, mobile devices and rich clients.

IBM designed the Lotus Domino and Lotus Domino Designer solutions based on world-class research and development, as well as Eclipse open standards, helping ensure interoperability with other open standards projects. IBM continues to contribute to community open standards development and its own open projects, such as IBM Project Vulcan, which is designed to allow developers to create new generations of applications powered by collaboration. In support of IBM Project Vulcan, Lotus Domino software provides Representational State Transfer-based interfaces to data and services, simplifies widget frameworks to increase reuse of UI assets, and extends support for mobile applications to deliver native-like experiences.

IBM Lotus Domino platform enables a company to raise US$18,000 for disaster relief in two days

To rush aid to earthquake victims in Haiti in January 2010, a healthcare company with a strong philanthropic philosophy needed a way to streamline its expression of natural generosity and compassion. It was able to quickly build an application on IBM Lotus Domino software that gave employees an easy way to donate financial aid, which the company matched with its own contributions.

The Lotus Domino development environment facilitated the lightning-fast delivery of a custom application, designed to meet urgent needs for emergency aid. The platform's data store, integrated web authentication and security model helped the company handle financial contributions in accordance with corporate guidelines. The application's browser interface provided employees with easy access, from wherever they are located. Because the application was immediately available and offered a convenient donation channel, it helped bring in over 600 contributions from employees, totaling approximately US$18,000, only two days after the disaster.

For more information

To learn more about how the IBM Lotus Domino platform can enable you to quickly create feature-rich collaborative applications, explore our wikis, tutorials and other technical resources at: **ibm.com**/developerworks/lotus

Developers can download a no-cost version of the IBM Lotus Domino Designer tool and start developing collaboration and workflow applications today at: **ibm.com**/developerworks/lotus/downloads

To view solutions that complement the IBM Lotus Domino platform, visit the IBM Lotus and IBM WebSphere® Portal Business Solutions catalog at: http://catalog.lotus.com

Additionally, financing solutions from IBM Global Financing can enable effective cash management, protection from technology obsolescence, improved total cost of ownership and return on investment. Also, our Global Asset Recovery Services help address environmental concerns with new energy-efficient solutions. For more information on IBM Global Financing, visit: **ibm.com**/financing

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