The Mainstream
An article from the IBM @server zSeries software newsletter

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You say you want an evolution? Enterprise transformation bridges current and new IT assets

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For today's IT executives, the good news is that corporate earnings are up, and purse strings are finally being opened for investment in the organization's technology platform. The bad news is that it probably isn't nearly enough to overhaul a system and start from scratch.

The fact is most IT executives today are being challenged to do more with less—to upgrade their systems to compete in an e-business on demand world, but with the caveat of maximizing current IT assets before they invest in new technology.

Of course, there's good reason to hold on to existing or traditional applications. Over the years, a good deal of knowledge, business logic and business rules have likely been programmed into the current system—rules that run virtually every aspect of the business. Trying to recreate these in new applications can be difficult, and even risky.

With that in mind, companies are looking to slowly evolve their systems from legacy to Service Oriented architectures, and to integrate these services with other systems. In the vernacular, it's called "enterprise transformation."

At its core, enterprise transformation is about taking existing IT assets and programmer skills, and cost-effectively and efficiently integrating them into the new world of e-business on demand.

Business demands and enterprise transformation

Enterprise transformation is not an IT-driven process. Rather, it's driven by business needs—and the need to develop new business processes to meet those needs. In order to stay competitive in an increasingly e-focused world, business leaders are finding that their organizations must be more streamlined, more integrated, and more responsive to the customer.

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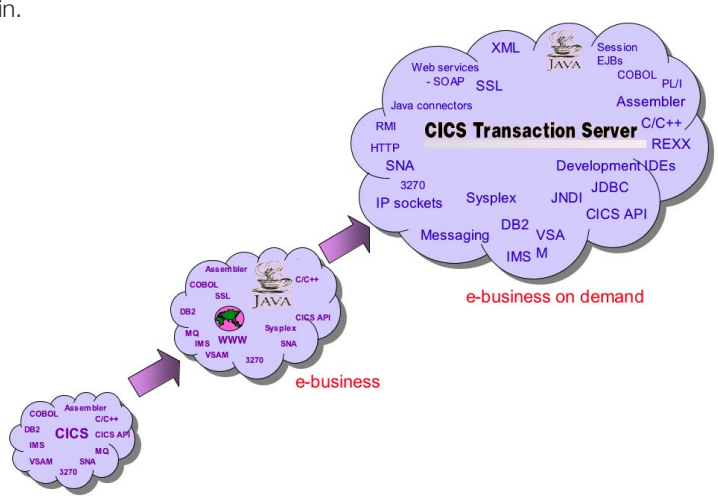
When customers purchase a product online, for instance, they should be able to immediately determine if that product is in stock. For that to happen, a customer-facing ordering system must be integrated with an inventory application. Many e-commerce sites are doing this today… and those that don't are risking falling behind the customer curve. That's just one example of how today's businesses are transforming their processes to be player in the e-business game.

The e-business functionality challenge is being passed on to IT executives, who are being charged with aligning technology resources with business priorities. The mandate: Improve systems' resiliency, security and flexibility, to continually adapt to rapidly changing market demands and business goals.

The asterisk in that mandate, though, is that technology professionals are not receiving a blank check to make this happen. So they must be resourceful. They must leverage and integrate traditional applications with new ones. They must improve developers' productivity. And they must reduce unnecessary complexity across systems.

Three business strategies, three IT strategies

On the path to e-business on demand, an organization typically starts at one of three points. The most rudimentary is optimizing processes within a business unit or division. The second is optimizing processes across an entire enterprise. The third, and most sophisticated on the scale, is not only optimizing processes from within, but also integrating those processes with suppliers and customers—creating end-to-end communications among all partners throughout the value chain.



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IT systems take a similarly progressive, three-step approach to achieving e-business on demand capabilities. The first is point-to-point, in which discreet IT systems are developed for individual, "silo-ed" business units. The second is "integrated," wherein business units are integrated so that their IT systems can communicate with each other and share applications and data.

The third step—that is, nirvana—is achieved at the "dynamic" stage, in which an organization's systems are linked to their suppliers' and customers'. Here, systems intuitively communicate with and react to each other, and use flexible logic to not only share information, but also make business decisions based on information with which they are presented.

Speed bumps on the road to system upgrades

Many legacy systems can make it difficult to adapt quickly and flexibly to newer e-business functionality, for three primary reasons:

- *Traditional applications* cannot easily be integrated into today's modern workflows, so applications being developed from scratch cannot integrate with an application or data on a legacy system.
- *Application development teams* are saddled with a sub-optimal combination of tools and application interfaces, so that COBOL® and Java™ developers, for example, cannot pool resources in pursuit of a single goal.
- *Organizations* must somehow integrate applications from three different sources: packaged/customized applications from software vendors, existing applications from legacy systems, and newly coded applications for the e-business on demand.

IBM®, a longtime leader in application integration, is well positioned to provide the capabilities that IT executives require to cost-effectively evolve their legacy systems for e-business on demand.

> *IBM enables businesses to adapt their processes quickly and flexibly by reusing existing applications and data.*

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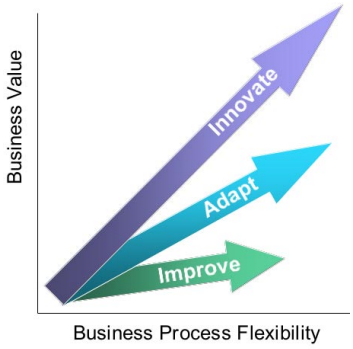
Offering "requirement to retirement" application development solutions, IBM enables businesses to adapt their processes quickly and flexibly by reusing existing applications and data. Developers can unite and leverage their skills in disparate programming languages and work within a single development environment.

With application integration solutions from IBM, organizations can achieve higher user productivity, create new differentiated solutions, and expand relationships with customers, suppliers and partners. The result: a quick return on their IT investment.



Three stages of enterprise transformation

Not all enterprise transformations are created equal. Organizations typically choose one of three stages of transformation, and migrate over time to more advanced stages.

1. Improve the user experience. For situations where application interfaces are difficult to use and user workflows are outdated, organizations are taking action to improve their customers' or end users' online experience. Typically, this means improving the user interface—upgrading from old "green screens," improving site navigation, providing a simple Web-based, point-and-click interface, and adding a pre-filled fields function, so that online customers need to enter boilerplate information, such as a billing address, only once during a session.

This "Improve" stage of enterprise transformation provides an impressive win-win-win-win set of benefits:

- For end users, it enhances the online experience.
- For IT, it reduces development costs by avoiding rewrite of legacy applications.
- For the business side, it increases productivity, reduces costs and delivers a rapid return on a rather modest investment.
- For ISVs, it brings new value to software products, with cost-effective tools for upgrading and extending the user interface.

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2. Adapt for enhanced relationships. Where legacy applications cannot easily be integrated into modern workflows, organizations are adapting their applications to participate in today's e-business on demand workflows—without incurring the risks of replacing an entire platform.

This may involve "wrappering" business functions existing back-end applications, in order to seamlessly incorporate them into a new workflow with other applications. So, for example, a function such as a customer purchase history can be transparently added to a site without regard to the application in which it's created.

By integrating legacy applications for richer, differentiated interactions, this "Adapt" stage of enterprise transformation typically helps businesses to develop new and stronger partnerships with customers, partners and suppliers. On the IT side, it helps reduce development costs, as well as providing a standards-based framework for integration of applications with other Web technologies.

3. Innovate for new capabilities. For situations where it's difficult to adapt mission-critical processes to changing business or market conditions, organizations are using their legacy applications to create totally new solutions. By understanding what's in their existing mission-critical applications, they can restructure and "componentize" those applications, and integrate parts of them into new, differentiated solutions and a service-oriented architecture.

In essence, then, the "Innovate" stage of enterprise transformation enables an organization to build new, strategic solutions by modifying their current applications, avoiding the expense

Organizations can build new, strategic solutions by leveraging their existing applications, avoiding the expense of developing a new application from scratch.

of developing a new application from scratch. A business can adapt its processes to new marketplace imperatives quickly and at low cost. And IT professionals can improve the development process and productivity across the complete application cycle.

A key benefit of this Improve-Adapt-Innovate triad of transformation is that an organization can migrate from one stage to another, depending on a given project. IBM tools make it easy to move up the continuum.

How IBM solutions address each stage

Since so many businesses are employing the Improve-Adapt-Innovate model of enterprise transformation, it only makes sense that IBM's enterprise transformation tools can be similarly categorized. To wit:

1. In the "Improve the user experience" stage…

IBM WebSphere® Host Access Transformation Services (HATS) converts traditional "green screen" interfaces on-the-fly to a Web interface, enabling organizations to easily improve workflow and enhance the user's online experience. It offers the tools to quickly and easily extend 3270 and 5250 applications to business partners, customers and employees as HTML through Web browsers and WebSphere Portal. It also offers an easy to implement solution for creating Web services from existing legacy applications.

IBM Host Access Client Package enables businesses to continue using "green screen" applications while migrating to a Web-based user interface. It allows developers to evolve to Web-to-host technologies at their own pace, as well as create custom e-business applications with a comprehensive set of application programming interfaces (APIs).

2. In the "Adapt for enhanced relationships" stage…

IBM CICS Transaction Gateway is a Java 2 Platform, Enterprise Edition (J2EE™) connector for CICS applications. It enables you to use your CICS applications in comprehensive and sophisticated J2EE and Web services solutions hosted on powerful application servers, such as IBM WebSphere Application Server.

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IMS Connect links a JCA connector to IMS®, enabling developers to create customized "wrappering" tools that add new e-business functions and capabilities to existing applications. Improving TCP/IP access and enabling easier access to IMS applications and data from the Internet, it's regarded as a must-have tool by many IMS shops embarking on e-business on demand initiatives.

IBM SOAP for CICS is a no-charge, separately orderable feature of CICS Transaction Server Version 2. It enables new or existing CICS applications to be accessed as Web services within a service-oriented architecture (SOA). The feature also enables CICS applications to invoke Web services hosted on other systems, providing another form of connectivity appropriate for business-to-business (B2B) applications

IBM SOAP for IMS. The IMS SOAP Gateway—currently in Technical Preview Status—is an XML-based oconnectivity solution that enables existing or new IMS applications to communicate outside of the IMS environment using SOAP.

IBM WebSphere MQ and IBM WebSphere Business Integration Mainframe Adapters enables businesses to easily exchange information across different platforms, integrating existing business applications in the process. They assure reliable delivery of messages, dynamically distribute workload across available resources, and help make programs portable.

3. In the "Innovate for new capabilities" stage…

IBM WebSphere Studio Asset Analyzer (WSAA) lets organizations understand, maintain and extend their existing IT assets while supporting new e-business requirements. MVS and distributed application artifacts can be analyzed, application assets can be queried and viewed in graphical form, impact can be understood, and code changes can be made with more confidence, greater speed and less risk. The application even helps identify business logic code for components and with creating connectors for Web-enabled applications.

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IBM WebSphere Studio Enterprise Developer (WSED) gives Java 2 Platform, Enterprise Edition (J2EETM) capabilities, rapid application development and team support to diverse enterprise application development organizations. It brings the power of J2EE, rapid application development (RAD), and Java, COBOL and PL/I support to diverse enterprise application development teams. With WSED's comprehensive development tools for creating, deploying and maintaining enterprise Web, Web Service, and SOA based applications, developers from different technical backgrounds can easily team up on e-business projects.

IBM WebSphere Studio Workload Simulator (WSWS) helps assess a Web-serving environment's ability to handle production-level loads, by simulating large numbers of "virtual users" and the associated Web and Web Service traffic they would create. It enables Quality Assurance personnel to conduct tests on load, performance and capacity planning.

IBM WebSphere Studio Application Monitor (WSAM) can resolve performance problems with J2EE applications running on the IBM WebSphere for z/OS™ and for WebSphere distributed platforms, without requiring modification to the application code. It helps application developers understand application behavior and pinpoint bottlenecks and problems to a specific area in an application, in realtime, under real stress conditions. It also monitors connectivity and application processing from J2ee to CICS environments.

The next best thing to utopia

With IBM enterprise transformation tools bridging the gap between legacy and new technology, today's organizations are creating new and differentiated e-business applications, yielding a richer experience for their online customers, suppliers and partners.

By enhancing existing applications for use in modern e-business on demand architectures, they're avoiding the risks of IT replacement strategies. And in the process, they're also reducing operating costs by enhancing applications and extending them to employees, partners and customers, while achieving dramatic IT cost savings through reuse of current software assets.

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In a perfect IT world, e-business-minded organizations would be amply funded, and rebuild their technology platforms from scratch. Utopian visions aside, though, the next best thing is to fully leverage existing platforms for new business functionality. That is what enterprise transformation is all about.