

Rapid innovation, real business results

Software is your greatest strategic asset



The invisible thread of innovation

What do an airplane, a digital music player, a traffic system, and an e-commerce platform have in common? It is software—the *invisible thread* of innovation woven through systems, products, and services.

Not long ago, companies used software to run basic processes. Today, software is often the brains of the business or core to its solutions. Increasingly, software is a powerful weapon for gaining a competitive edge.

The best and brightest companies use software to propel innovation, connecting customers, suppliers, systems, and a host of business modules in a single intelligent, adaptive network. In many cases, software is a critical component of a larger system, such as an automobile or fighter plane. These systems can connect to other systems—a global positioning system (GPS), for example, or a smart grid—to form a “system of systems” enabling an intelligent fabric of new capabilities.

Rethinking software value

No longer simply a way to automate business functions, software has become a strategic business asset, the focus of competitive differentiation, and the heart of innovation. For many companies, software *is* the business. Think of Amazon, Google, salesforce.com. These businesses would not exist were it not for groundbreaking software designed to integrate business processes end to end.

But it is not just within online businesses where the world is seeing software-driven innovation. In the aerospace and defense industries, software is making large, complex airframe designs practical. In healthcare, real-time functional magnetic resonance imaging (fMRI) software is driving groundbreaking research into human behavior and disease mechanisms. In the automotive industry, more than 80 percent of car innovations come from computer systems.¹ Imagine: a car that syncs with your smart phone to let you lock or unlock the doors, download data to the car’s embedded GPS, and intelligently attach the car to the smart grid.

This wave of dramatic innovation requires a different approach to software and system design, development, and delivery. We must give it the same attention we have long given other mission-critical business processes.

Enabling a comprehensive music experience through software



Think about it. You dock your MP3 player into your PC—a physical activity. But then the software takes over. A browser opens; it links to a music store’s website and logs you in. Data mining software recognizes the artists and types of music you like and serves up snippets of songs you might want to purchase. When you decide to buy, a wholly different kind of infrastructure kicks in to access your account information and bill your credit card before downloading selections to your computer. You can even take the experience a step further by docking your device into your car radio. When you hear a song you like, you simply push a button to place a software tag on your player. Back home and docked on your PC, the software on the music store’s website reads the tag and brings up the song for you to purchase. Basically, a disconnected device becomes one part of a larger system, and it’s the software that delivers the innovation.

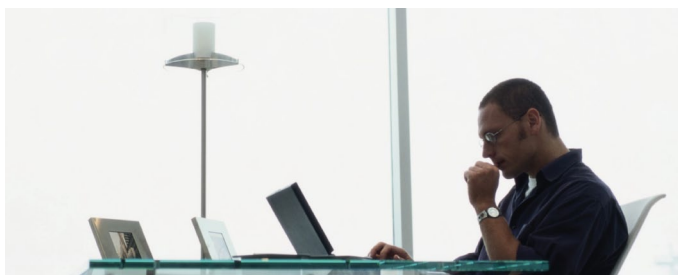
Barriers to success

Most organizations struggle to leverage their software investments for competitive differentiation. Business priorities are often poorly aligned with software capabilities. What’s more, the sheer complexity of managing the extended software supply chain—including an increasing number of stakeholders—can stifle innovation. In product development, complexities lie in linking software components to the mechanical and electrical environment. Burgeoning requirements, security needs, and compliance mandates keep both IT and product management teams up at night.

How do you measure the value and risk of a dynamically evolving system? How do you manage software investments and foster collaboration across a complex array of partners and suppliers? And how do you decide to go forward with your *next* project or investment? The challenges can be frustrating, especially when you see marketplace opportunities you know you could exploit if only your software and systems teams were ready.

Releasing your potential

Unlocking software innovation requires an approach that integrates people, processes, and technology within an economics discipline where value can be measured in terms of the bottom line. A discipline where, instead of simply completing planned activities, management teams steer projects toward business results—the true measure of success.



A fully optimized software delivery environment allows you to collaborate across the complexities of the software supply chain, among stakeholders and team members, regardless of geographic location. When you optimize and modernize enterprise assets, you are better able to innovate—to measure progress toward business goals, deliver smarter products and services through collaborative embedded techniques, and transform software and systems development into a vital, integrated business capability.

All this helps ensure your business's survival and long-term success by helping you:

- Reduce risk.
- Improve security and compliance management.
- Enhance quality.
- Achieve faster time to market.

General Motors (GM) designs and engineers the Chevrolet Volt in record time



GM wanted to quickly deliver a new car with an innovative propulsion system designed to reinvigorate the automotive industry. The company selected IBM Rational® solutions to help it develop some of the Chevrolet Volt's critical electronic controls for the vehicle's battery system, electric drive unit, and cabin electronics. These solutions were used around the world to help improve team collaboration and manage change throughout the product development process. As a result, GM was able to compress the delivery cycle for this innovative vehicle design, reducing the development timeframe from a 5- to 10-year industry average to just 29 months while significantly improving efficiency, productivity, and quality. Watch the video on YouTube at www.youtube.com/watch?v=CjjASGV36mw.

IBM: sustained commitment to business results

Clearly, software and systems delivery has the potential to become your greatest strategic strength. IBM can help.

We stake our reputation on business process improvement. Whether you are a systems engineering organization or an IT shop, large or small, the IBM Rational organization can assist in optimizing your capabilities. We've learned much about what works and what does not. And we recognize that some companies are ready to make large-scale changes to their software delivery models while others need to take smaller, incremental steps toward adopting a new approach.

The depth and breadth of our offerings—built on IBM Jazz™ technology, an open-standards-based platform, and our extensive services capabilities—make us distinctively suited to helping your teams improve. We can assist you in delivering to your highest potential using cost-saving technologies and methods.

We are passionate about the strategic value of software. Business innovation and differentiation through improved software delivery may not be the “last frontier,” but we strongly believe it is the next one for thousands of businesses. IBM can help you achieve demonstrable improvements at every phase in transforming software and systems delivery into a vital business process.

Hughes Telematics accelerates time to market

Hughes developed an onboard vehicle system that helps immediately after an automobile collision. Upon crash detection, the system dials for emergency help, guides the response unit to the accident location, and enables the dispatcher to alert vehicle occupants that help is on the way. The company tapped IBM to design, build, and deploy a flexible systems and process infrastructure, adapted for telematics, that speeds delivery of new services.

Make software a strategic asset

Talk to your teams. As you explore the concepts presented here and want to learn more, please call your IBM representative or visit:

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All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer.

1 Robert N. Charette, “This Car Runs on Code,” IEEE Spectrum, February 2009.



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