The impact of technology upon businesses in every industry and geography has never been greater. Although technologies such as personal computers and local-area networks had big impacts on the way organizations worked in the past several decades, the recent introduction of disruptive technologies is establishing new opportunities. However, these new technologies also create major challenges for businesses, not only reshaping the fortunes of organizations but also changing the landscape of entire industries.

For instance, technology is creating fundamental shifts in everything from distribution and payment models to product development and customer engagement. Businesses of all sizes and in all industries are conducting business in entirely new ways, largely based on the introduction, adoption and exploitation of startling improvements in technology. At the same time, big advances have taken place in the cost-benefit equation for new technology adoption, including lower hardware costs, new software acquisition models, improved return on investment timelines and lower total cost of ownership.

One of the biggest challenges to the adoption and integration of technology as an “innovation agent” is to find new ways to monetize technology investments by creating new market opportunities or improve operating efficiencies that wring costs out of the business.

The net result is that IT-enabled business innovation is on the rise. In fact, entire industries have been transformed, broken down and reinvented, while entirely new ways of doing business have emerged. Consider printed media companies such as newspapers, magazines, catalogues and newsletters. Many traditional print media companies have morphed into hybrid models embracing electronic formats along with print, and some publishers have completely eschewed print products in favor of an all-digital strategy. Retailing and hospitality are other industries that have used IT to innovate everything from how they use electronic locationing software for mobile devices to broadcast new promotional offers, to letting customers make electronic payments for an item in the store and completely avoid lengthy checkout queues.

Disruptive technologies are the main drivers behind these changes. Organizations should evaluate how these technologies help them redefine their business to improve competitive positioning and business results. It’s important to remember that the greatest value of disruptive technologies often comes from their tight integration into end-to-end solutions, tying in with existing IT assets to help organizations change the rules of the game, improve their market position and stay ahead of the curve.

There are four major disruptive technologies at the heart of IT-enabled business innovation: Social media, information, mobility and cloud.

**SOCIAL MEDIA**

Social technologies increasingly are being used to enhance collaboration inside the organization, and to promote teamwork and sharing of concepts and intelligence with partners, suppliers and even customers. Social networks have accelerated problem solving, and the related concept of crowdsourcing is enabling
organizations to achieve innovation in ideas and solutions in everything from reducing product development cycles to increasing speed to market.

A recent study conducted by market research firm Ipsos highlighted that business stakeholders and their IT colleagues still have a ways to go in order to make full use of social media to increase collaboration, productivity and innovation. “Many end users don’t believe their employers recognize the value of social tools,” points out Brian Murray of Yammer, a leading enterprise social media company. “We are urging those responsible for provisioning technology to look at the merits, listen to employees and look into provisioning these technologies on a wide scale.”

Still, more and more organizations now realize that social media has rapidly evolved from a consumer application for personal pursuits to an enterprise tool that drives new business ideas and tighter relationships with customers and trading partners. As social media-savvy IT professionals take increasingly important roles of responsibility within their organizations, innovative business uses of social media are emerging. These include virtual feedback loops on marketing campaigns and real-time social feeds from Twitter, Facebook and community-specific wikis in order to compress communications cycles and transform activities such as public relations, analyst relations and user groups.

**INFORMATION**

The huge growth in digital information is well documented: Market researcher IDC says that global digital information grew by ninefold to 2 zettabytes between 2005 and 2011, and will top 8 zettabytes by 2015.¹ The flood of new data is both a blessing and a curse for organizations, as IT and business teams struggle to harness the insights of this data in many forms and from many sources without being paralyzed by its sheer volume. Advanced analytics—including much-discussed Big Data solutions—form a foundation for vastly improved competitiveness and a more responsive organization based on a deep understanding of those new data points. At the same time, information is driving innovation by automating knowledge work, resulting in improved operating efficiencies that can reduce cost and free up valuable internal resources to focus on new opportunities.

² “Extracting Data From Chaos,” IDC, June 2011.
The business implications of this growth in digital information are enormous. Consider an organization’s heightened ability to analyze its workflow and changes in business processes, and to model “what if” scenarios for everything from competitive pricing changes to the loss of a major account’s business. Organizations also use rich data mining tools to extract information from a wide variety of new sources, such as social media and RFID-based systems. In fact, one of the most important new trends that is creating untold opportunities for IT-enabled innovation is the “Internet of Things,” where traditional computer networks are augmented and extended to include a vast array of Internet-connected entities, from retail merchandise shelf sensors to traffic monitoring systems. This non-user-focused information environment could be the next big challenge for many organizations; the challenge of tapping this enormous volume of information to improve business outcomes will be like finding that needle in the haystack.

**MOBILITY**

New consumers and new markets are being enabled by mobile technologies. Mobility is now pervasive throughout the world, from smartphones to tablets and notebooks, as the twin effects of rapidly dropping device prices with increasingly sophisticated, mobile-centric applications transform how users access and create information. Consider how dramatically mobile device usage has grown in global Internet traffic: As recently as 2009, mobile traffic represented less than 1% of total global Internet traffic. Today, that number is fast approaching 25% with no signs of abating.¹ Developing countries, in particular, have rapidly adopted mobile technologies, in part because they have little or no legacy wired infrastructure to convert, integrate or abandon. A whole new generation of mobile workforces is creating new business opportunities, from mobile banking to location-aware retailing.

Due to mobility’s increasing ubiquity, employees are dramatically changing the way they interact with the IT department in ways ranging from mobile-centric application development to around-the-clock help desk capabilities from locations other than a traditional headquarters facility. Businesses need to embrace the notion that an organization-wide digital presence is essential to compete effectively in today’s market. This requires that business and IT leaders must collaborate to discover and exploit new ways for an enterprise-wide digital footprint to augment the way employees, customers and partners work together for greater business value.

**CLOUD COMPUTING**

IT departments are using cloud computing to rapidly deploy new applications, reduce capital expenditures and pilot new business models faster and with greater confidence. Cloud computing is quickly becoming the preferred standard IT platform for services to employees, customers and citizens, in large part because of the technology’s ability to rapidly and securely scale up—or down—to meet business needs. Cloud’s “pay for use” philosophy is popular with both financial executives and IT leaders because of its cost transparency, and its ability to stretch budgets and improve speed to market.

One of the most important advantages of cloud computing as a way to drive further innovation is its ability to free up understaffed internal IT organizations from mundane, “keep the lights on” activities such as help desk inquiries, onboarding new users and doing security patch updates. Instead, organizations are using cloud to

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handle those and other IT services in order to allow their technical staff to concentrate on ways to ensure better alignment between technology and business goals, and to create entirely new applications, services and products that transform the organization and improve its financial outcomes. Cloud computing is helping businesses to manage costs more effectively, while also allowing for greater investment in other enabling technologies such as mobility, social media and information in order to spur further innovation.

**Integrating Technologies to Maximize Innovation**

Although each of these four technology areas is a significant source of business innovation, the most successful organizations are using technology integration strategies as a force-multiplier that can significantly improve innovation and drive even more successful business outcomes. Social, mobile, information and cloud can each be addressed on a silo basis, but this will not deliver the best outcomes. Integration of these technologies, together with existing IT investments, maximizes the potential for real business improvement.

Accordingly, an organization’s existing IT investments needs careful consideration. The emerging technologies in some cases—such as cloud—can be seen as replacement technologies to existing architectures. However, the major focus of these emerging trends is in front-ending existing systems of record. Integration of new and existing is therefore paramount to success. And this integration can be tricky at best and even highly complex, so due care in the planning process needs to be exercised.

**Conclusion**

Business consultants and management experts have long spoken of the need for companies to achieve a “sustainable competitive advantage,” and to develop tools, processes and strategies to unearth and exploit that advantage. Many organizations are seizing technology as a leverage point to develop and put that competitive advantage to work. Whether it’s a transformative application, a more efficient computing infrastructure for faster, more reliable transactions, or a smarter way to leverage technology to improve customer satisfaction, winning organizations are finding new ways to achieve IT-enabled business innovation to move ahead—and stay ahead—of their competition.