



A REPORT BY HARVARD BUSINESS REVIEW ANALYTIC SERVICES

How Mobility Is Transforming Industries

Utilities, health care, financial services, retailers and other leading adopters are reworking their mobile strategies to take advantage of the latest technologies.

MOBILITY IS CHANGING the way industries operate. Not one industry; *all industries*. The shift from a wired to a wireless world is proving to be almost as dynamic as the shift from horses to automobiles.

It's not just the ability to receive data on mobile devices. These devices have become so powerful in recent years that they can frequently replicate high-end functions previously limited to laptops and desktops, such as showing video and other graphics.

"Those devices are getting more capable every year, and with the proliferation of them we have opened the door to application innovation," notes Andrew McAfee, principal research scientist at the Massachusetts Institute of Technology's Center for Digital Business and the coauthor of the new book *Race Against the Machine*. "We're going to see some fantastic things, in every area of the organization." This innovation enables industries to leverage those capabilities in the workplace for executive dashboards, equipment maintenance, and even training programs.

It's more than the ability to shift employees from being deskbound to being mobile. It's the ability to transform industries by bringing features that are unique to mobility, such as location, presence, and routing. That kind of capability can not only increase efficiency and eliminate additional friction in business processes, but it also has the potential for launching new products, new services, and even new business models. Both top and bottom lines, as well as many business processes, are being remade in real time as executives, managers, and frontline professionals begin to understand the vast opportunities of mobile technology.

That's why no industry is immune from the impact of mobile devices. Of course, industries where employees are traditionally mobile, such as utilities, health care, financial services, and retailing, are more impacted at first by the rise of smartphones and tablets. Industries where you wouldn't necessarily expect mobile technology to have an impact—such as farming, education, and manufacturing—also are being remade.

What's so compelling is that the lower costs, usability, and ease of application development associated with these devices means that almost any business can take advantage of their capabilities. Not only is the cost of the devices lower, but the cost of application devel-

Figure 1

Mobile Device Usage Goes Way Beyond Calls and Email

PERCENTAGE OF RESPONDENTS WHO INDICATED THEY REGULARLY USE SPECIFIC FUNCTIONALITY

Make phone calls **94%**

SMS/text messaging **84%**

Browse the Internet **69%**

Email **69%**

Use mobile apps **59%**

Social networking sites **42%**

View video content **31%**

Source: IDG Global Solutions

These leapfrogging technologies mean that we're likely to see innovation happen in places where we're not expecting it.

opment is as well; developers are flocking to this virgin territory. "There are millions of apps out there," estimates Jeffrey Kagan, an independent mobility analyst. "The number is growing rapidly, and they're not just games—they are apps relating to business." Right now, he says, people are delighted with the number of apps that interest them. "But there's also a ton of apps for things you're not interested in, all the things that other people do. It's like the wild, wild West out there."

Indeed, 55 percent of more than 21,000 survey respondents, mostly IT professionals, said they use their mobile phones for job-related tasks, according to a new survey by IDG Global Solutions. And while email is the most frequently cited business-related use of a mobile device, professionals and managers are using their smartphones and tablets to access corporate apps, watch training videos, review and create documents, and perform other tasks.

Figure 1

The Industries in the Forefront

Individual enterprise strategies aside, which industries are the pioneers in the mobility landscape, and what are the early lessons learned? Here's a look at some of the leaders as well as some unique scenarios.

UTILITIES. Given the extensive geographic areas utilities serve, they face a win-win-win scenario with mobile technology. By deploying mobile technology to their workforce, they can improve productivity and transform service delivery in the field. By deploying it to their customers and partners, they can rapidly analyze asset and service performance, better track customer consumption trends, and improve environmental stewardship. Combining this information with the fast-growing array of mobile analytics will enable utility managers to more quickly target solutions and capital investments.

According to an August 2012 PA Consulting survey, utilities are already enjoying a 23 percent increase in service-level agreement compliance and up to a 20 percent improvement in field force productivity, thanks to mobile technology. Other areas in which utilities are reaping benefits from mobile reporting include demand management through the use of smart meters; operational efficiency by integrating GIS systems with mobile devices; customer service through the use of service call reminders and outage notifications; and brand awareness.

By combining multiple applications on a single mobile device, utility field support workers can boost their productivity, particularly for capital-intensive projects. Consulting firm Cap Gemini

recently reported on the effort of a Toronto utility that needed to convert 1.2 million conventional electric meters to smart meters. But mobile devices deployed to the workers allowed them to electronically gather other important data such as meter numbers, meter reads, GPS coordinates, and customer premises details, reducing the project's overall cost. This in turn helped establish a collaborative partnership between the utility and its customers on improving energy consumption.

HEALTH CARE. The health care industry has a long history of taking advantage of mobile technology, from early adoption of Palm Pilots for ePrescribing to mobile computers on wheels. However, mobility is transforming this industry even further with the ability to have in-home medical devices monitor patient data and transmit it to practitioners. And these devices do not have to conform to our current ideas about computing—smart medication bottles now include sensors in the bottle cap that trigger a wireless notification that a patient has taken medication, and then request a prescription refill after the appropriate number of events, or notification if the patient fails to take medications.

Accuracy and speed are also key benefits. It's easier for practitioners to confirm the appropriateness of a drug quickly and easily; prescribing can also be done based on the most updated information. Physicians carrying smartphones or tablets can access remote patient assessments and lab reports immediately upon their completion, as opposed to waiting until they can get back to their desk or a stationary computer. Consider also the ability of practitioners to use workflow or social media via mobile devices for improved collaboration.

Mobile technology can also help address the industry's rising costs. In the May 2012 report titled "Socioeconomic Impacts of Wireless Technology: A Review of Opportunities and Challenges in Health Care, Finance, Education and Community Empowerment," the wireless industry association CTIA predicted that in-home wireless health care services and applications—the ability to manage patients and upload health data without a clinical visit—will become a \$4.4 billion industry by 2013, and that the potential savings to consumers, insurance companies, and government payers resulting from mHealth technology may reach \$21.1 billion per year.

FINANCIAL SERVICES. Mobility can transform financial services in its ability to reach the "unbanked" or "underbanked" demographic—people who have mobile phones but not bank accounts. A February 2012 article in *Bank Systems & Technology* estimated that some 25 percent of the U.S. population (accord-

ing to the Federal Deposit Insurance Corporation) and 70 percent of the world's population (according to several sources) has no access to financial services.

"Some countries are going beyond what we're using in the United States," notes McAfee. "These leapfrogging technologies mean that we're likely to see innovation happen in places where we're not expecting it."

This transformation will manifest in a number of ways. First, the potential growth in the mobile payment market and the ability to make payments via mobile phones is stunning—the CTIA projects it will reach \$670 billion annually by 2015. It's likely that the smartphone will overtake the wallet just as it has overtaken the camera, the personal organizer, and other traditional accessories. **Figure 2**

But equally transformative will be the ability of financial institutions to not only provide a "bank in the palm of the hand" but also spur economic activity through granting microloans and offering consultation to small businesses in developing countries.

RETAIL. Mobile technology works for both customers and salespeople. Stores can target customers with promotions when they're in the store, and salespeople can not only show customers product videos to answer questions, but they can also check inventory information and enter the order; the tablet essentially eliminates the need for the cash register (for credit card customers). Estée Lauder has installed tablets in department store kiosks so that customers can input information about their skin tone and complexion and then get a list of appropriate products.

The inclusion of optics in handheld phones has led to the explosion in QR codes, codes that the phones can scan to take the customer to a Web site for more information. The value of QR codes is that they can be placed anywhere customers or prospects come into contact with advertising: kiosks, store windows, magazines, and more. In Seoul, South Korea, grocer Tesco placed electronic billboards in the subway stations, allowing commuters to scan product codes, transmit them to a central server, and have those items delivered after they arrive home; the store reports its online sales have increased 130 percent since the creation of the billboards. In other locations, Tesco has installed cameras in produce departments to recognize when vegetable bins are empty and automatically notify shelf stockers via their mobile devices of what needs to be replaced.

What Other Industries Can Learn from Mobility Pioneers

Mobile technology is also expanding beyond the aforementioned industries—which are traditionally technology innovators—to less-traditional industries. According to the CTIA report, farmers are using wireless applications to monitor crop development and livestock management. It cites the use of sensors—in this case, wireless soil monitors—attached to plants to monitor growth. "Wireless data provides farmers with actionable knowl-

edge about more precise and resourceful farming techniques [that] will affect water and land conservation ... and reduce use of fertilizers and pesticides," the report noted.

While schools have been relying on computers in the classroom for years, they still required printed textbooks. Replacing those with tablets can potentially reduce the cost of books each year. Other educational applications aren't far behind, such as student testing, or athletic coaches using tablets instead of clipboards to keep track of plays. In addition, the tablet can help train students in a wide variety of learning scenarios, showing them videos or animated demonstrations.

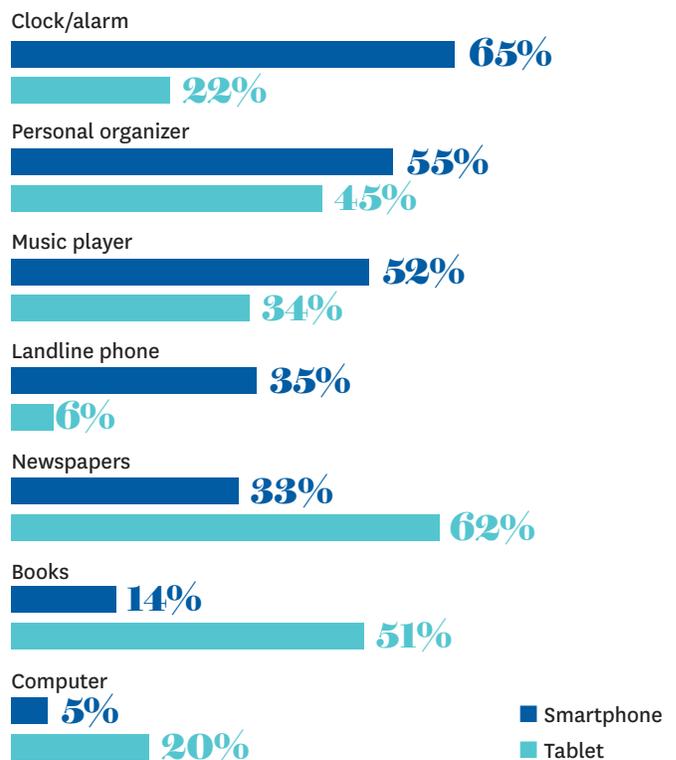
Conclusion

Anyone with the imagination to innovate can apply mobile technology to any industry and find ways to take advantage of data being uploaded or downloaded faster or more conveniently than it is currently. But looking at how other companies in leading industries are capitalizing on mobile technology can be both educational and inspirational toward crafting ideas for a mobile strategy that can provide greater competitive advantage sooner rather than later. ♦

Figure 2

Mobiles as Electronic Swiss Army Knives

PERCENTAGE OF RESPONDENTS WHO INDICATED THAT A MOBILE DEVICE REPLACED ANOTHER PRODUCT



Source: IDG Global Solutions 2012 Mobile Survey

Sponsored by



Sponsor's Perspective



SANJAY J. POONEN
PRESIDENT AND
CORPORATE OFFICER,
GLOBAL SOLUTIONS
SAP

Mobility's capacity to accelerate business is extraordinary. Moreover, it confers its benefits across every industry, business function, and job role. From the corner office to the factory floor, mobile devices—and the apps that run on them—are providing a better way for virtually everyone to improve their contribution in the workplace.

The image of the white-collar road warrior taking meetings in the airport is a familiar depiction of mobility's endowment to business. But by looking beyond the cliché you can begin to understand just how widely varied mobile technology's reach has become. Knowledge workers are merely the tip of the iceberg.

Entire industries—some previously underserved by information technology—are undergoing a transformation like never before. Unlike traditional desktop delivery, mobile computing gives companies in hands-on fields such as manufacturing and agriculture the ability to transform how people do their jobs, regardless of whether they ever sit at a desk.

For example, SAP is helping customers such as Tommy Hilfiger disseminate high-resolution images of its upcoming clothing lines to employees on their iPads. Employees can see and discuss important features of the products and speed workflows in the process.

Similarly, Santiago, Chile-based Empresas Iansa, an agricultural manufacturer, was able to give workers in the fields, warehouses, and delivery vehicles access to real-time inventory information and the ability to participate in quality control procedures. These improvements have helped them eliminate supply chain errors that once caused havoc with production.

ABOUT SAP

As the world's leading provider of enterprise application software, SAP delivers products and services that help accelerate business innovation for its more than 183,000 customers in more than 120 countries.

As the accompanying report relates, retail, health care, utilities, and financial services are just some of the industries that are transforming both internal and customer-facing processes using applications created by SAP. At SAP, we have leveraged our decades of experience in resolving critical bottlenecks in virtually every industry and combined it with our mobile technology leadership to create mobile apps that let businesses do what they never could before.

For example, SAP Service Manager is an app that gives field service workers access to customer account data, parts inventory, and other electronic information wherever they go. As a result, these workers are achieving a high level of effectiveness and standard of customer support that was simply never possible before.

For SAP, the excitement and momentum around mobile technology has hit a fever pitch, and this is driven by our excitement at seeing our customers use our mobile apps to transform how they do business—mobilizing their enterprise.

We invite you to learn more about SAP's mobile app offerings as well as those from our partner ecosystem by visiting the SAP Store from here: sap.com/mobile. You'll soon understand why SAP's mobile apps leadership is a critical driver of mobile transformation and innovation in a wide variety of businesses.

Sincerely,

Sanjay J. Poonen
President and Corporate Officer,
Global Solutions, SAP



hbr.org