Mobile e-business

A wireless world awaits: Nine moves that mobilize e-business

Introduction

For a large number of companies, e-business is carried out through PCs sitting on desktops or mobile computers connected to networks via phone lines. But as numerous organizations are learning, operating a business by umbilical cord can be cumbersome and restrictive.

To help sever those ties, many enterprises are turning to wireless technologies — a trend that is signaling a new generation of mobile e-business. In fact, IDC estimates that by the end of 2002, wireless Internet users will outnumber those with wired Internet access capabilities[1]. And the count won't stop with people. "Smart" machines — equipped with sensors and wireless communication capabilities — will also participate in driving this transformation.

Forward-thinking enterprises have already started shifting their e-businesses in a wireless direction. Based on our experience with these early adopters, nine recurring themes have emerged.

e business

Mobile e-business at work

While particular applications vary within companies and across industries, many businesses face similar problems — challenges that are now being regularly solved with the help of wireless technology. As you read through these scenarios, consider how similar solutions might apply to *your* business.

Serve a market

The dramatic growth of wireless technologies has given rise to a new type of business. These enterprises are springing up to serve the unique needs of today's increasingly mobile workforce — including business travelers and medical communities — and are busy establishing the appropriate infrastructures from which their user groups can gain wireless access any time, anywhere. For instance, business travelers who sign up with a special service provider could reach the Internet — and in some cases, their company's internal networks — from airports and major hotel chains. Another provider might cater to a network of doctors, offering them fast and easy access to files and information needed while away from the office or at area hospitals.

By positioning themselves as *the* portal to a specific market's wireless world, these businesses lock in a steady revenue stream and gain a foundation for an entire portfolio of offerings.

Avoid unpleasant surprises

Unexpected events happen. Weather plays havoc with flight schedules, doctors are called out of the office on emergencies and important packages end up in mysterious locations. Although these types of situations can occasionally disappoint customers, a prompt and proactive response can often minimize the negative impact.

Using traditional channels to feed customers time-sensitive information — such as notification of a cancelled flight — is not only impractical, but virtually impossible. However, with wireless communications, airlines can advise passengers of the situation and offer to electronically rebook them on the next available departure. Timely communication can save customers a trip to the airport — and help the carrier avoid the cost of handling throngs of frustrated passengers at ticket counters.

When operating a mobile e-business, you can deliver late-breaking news — whether good or bad — to the people you value most, wherever they are.

Capitalize on location, location, location

As a business traveler steps out of the hotel lobby, he glances up and down the block in hopes of spotting a certain coffee shop. He's on the way to an important meeting and needs a cup of his favorite brew to start the day right. Since the shop's familiar logo is not in sight, he taps a few keys on his PDA while waiting to cross the street. In seconds, a map appears on the screen — pinpointing the caffeine hot spot nearest his destination. As the man walks the remaining few blocks, he reviews his schedule for the day. Upon arrival at the coffee shop, he places his order and pays with the PDA that's still in his hand. As soon as his coffee is ready, he slips the PDA in his pocket, grabs his beverage and heads toward the meeting.

With the right support, a customer can remain loyal to "their brand" — even when they're in unfamiliar territory. Solutions that blend wireless technologies with a location-based services application open an entirely new set of business opportunities. Knowing the precise location of a wireless user allows companies to design innovative ways to deliver personalized service to customers, as well as enhance their own internal business processes. Delivery organizations can optimize routes and reduce the number of trips for their trucks; emergency response — whether sending repair crews to a possible gas leak or dispatching police officers to a 911 call — can happen faster.

But with opportunity comes challenge; businesses must be particularly sensitive to privacy concerns — for employees, suppliers and consumers alike. When clear user benefits exist, wireless applications can be designed to provide the location information needed, while still maintaining the trust of the user.

Wireless also promises an entirely new method for conducting commerce. Given the level of convenience — particularly for small payments — mobile commerce may soon rival the traditional credit card. According to Visa International, cash spent worldwide on purchases totaling US$10 or less now amounts to approximately US$1.8 trillion per year.[2] With that type of opportunity, wireless services — such as vending machine purchases or parking meter payments — could become commonplace, offering entertainment or convenience to consumers . . . and high-volume revenue streams for service and content providers.

Make the most of wait states

Today's pharmaceutical companies — along with their peers in other industries — are committed to developing personal relationships with their customers. These businesses' sales representatives spend the majority of their time in face-to-face meetings with doctors — discussing medical news and answering questions about products. Though extremely valuable, these sessions can be costly. The amount of time spent building rapport with accounts is typically matched by time spent waiting to see them. While it might be possible to connect a laptop to a phone line when the rep finally sees the doctor, it would be rare to find a phone jack in the waiting room.

Wireless technology makes placing an order or looking up information for the doctor more convenient and immediate. But it also helps employees — trapped in the aptly named "waiting room" — make the most of a wait state. Rather than flipping through magazines, sales reps can catch up on e-mail or set up appointments to see other physicians later in the day.

Consider other wait states:

- A pickup and delivery team that completes stops along its route more quickly than anticipated
- A service crew that finishes work orders faster than estimated

Through ongoing wireless communications with their dispatching unit, a mobile team can take on additional assignments whenever schedules permit, rather than sitting idle waiting for the next appointment.

Fit it in — wherever possible

Like many activities that force their way onto our weekly to-do lists, grocery shopping is a mundane but mandatory task; most people would admit that pushing a cart up and down aisles of a supermarket is not a great way to spend their time. Sitting at home in front of the computer browsing online aisles is not much better.

Millions of consumers struggle to carve out a block of time to complete this chore. What if that time investment could be paid in small increments, from wherever one happened to be — a few minutes here or there while commuting on the train, during half-time at the kid's soccer game, or waiting for a meeting to begin? Better still, what if less time was required because the grocer offered a suggested shopping list (based on the buyer's shopping habits and impulse purchases of other shoppers with similar profiles).

Allowing customers to do business with you via a wireless handheld device adds a new dimension of flexibility to their lives — and more value to your brand. The old adage about "being in two places at once" could virtually happen. For example, a contractor could place an order with the hardware store while surveying his building site — then have the supplies delivered or made ready for pickup.

While the Internet itself can offer 24x7x365 accessibility to your consumers, wireless access is often what makes business fit into an "on the go" lifestyle. Mobile e-business means your customers can be where they need to be — and still do business with you.

Eliminate lines

Imagine a busload of families — all arriving on the same plane chartered for a popular vacation package and all checking in at the hotel at precisely the same time. The lobby is waiting with empty rope mazes for weary travelers to waddle through with luggage in tow.

Now switch to a mobile mindset. Why devote square footage and facilities to a space that's fully utilized less than one hour a day? Consider the impact on customer satisfaction and real estate costs if a hotel agent — equipped with a wireless device — checked in all the guests during their 30-minute bus ride from the airport to the hotel. And think about other line-busting candidates like bank lobbies on Friday afternoons, airline ticket counters, or retail checkout lines during the holidays.

Enterprises that mobilize their e-business can pay to operate facilities designed for normal traffic — not occasional peaks. Wireless technologies present a variety of ways for businesses to eliminate lines — and delight customers.

Anticipate and avert problems

In a busy downtown office building, crowds amass inside the lobby. Frustrated business people continue to push the darkened elevator buttons — although it's quickly apparent that the doors will not be opening anytime soon. Angry tenants and their customers wonder whether they should struggle to find — and climb — the stairs; most of them simply give up and walk out.

The story doesn't need to end — or even start — this way. In a mobile e-business environment, sensors could report system deviations to the elevator operator before the equipment fails. A remote monitoring system would diagnose the problem and alert a repair crew working nearby. With a glance at their wireless devices, the crew would know the location and priority of the emergency call, and whether the required parts were already on the truck or needed to be picked up en route. Once on site, they could reference the most current diagnostic tools and manuals through their handheld devices. In minutes, the crew could replace the malfunctioning component and avoid a building-wide elevator outage. From elevators to electric transformers, to heating, air conditioning and ventilation systems, wireless technologies can help keep businesses — and the critical equipment that they depend on — up and running.

Machines — even those costing millions of dollars — can fail. The business interruptions caused by these failures can be devastating. To prevent costly outages, e-businesses are turning to wireless technologies for remote problem diagnosis and speedy, single-visit repair jobs where both people and parts are redirected in realtime.

Do things once

A claims adjuster steps cautiously through the mangled mess that once was a house. After a recent tornado dismantled several square miles of homes and offices, the insurance adjuster is determined to help his clients piece their lives back together as quickly and as painlessly as possible. He has a dozen sites to visit today alone. Equipped with a digital camera and wireless connectivity, the adjuster can complete forms and scan in supporting photos while he surveys the damage. No time is wasted reentering key information or filing documents back at the office; claim processing can start without delay.

Almost any business can be improved by doing things once. Think about potential cost reductions and—often more important—quality improvements in areas such as public safety and hospital care. Traditionally, when work is physically separated from support systems, data must be entered multiple times—delaying cycle times and inviting errors to creep in. In a wireless e-business, work is performed once, and information is communicated promptly and seamlessly to the systems and people that count on it.

Put computers where it makes sense—for the moment

It's Thursday. Mrs. Burton lines up her fourth-grade class for a walk to the computer lab. With only one room in the school wired for 30 users, lab time is scarce and scheduled tightly, never spontaneously, and is not easily integrated with class work or other classes' activities. In fact, math lessons will be cut short today because of the time lost going to and from the computer lab.

Now imagine a wireless environment. Mrs. Burton hands each student team a notebook computer to use for a multimedia geography lesson. Another teacher, Mr. Carter, rolls a cart full of equipment into the classroom — ready for some impromptu research on nocturnal animals. There's no need to barter for rights to a room; multiple classes can use the school's technology resources simultaneously — when and wherever they need it.

Computing no longer must be confined to predefined (pre-wired) places. Mobile e-business allows technology use to flourish…

…In buildings like courthouses, museums or historic landmarks, where renovation for computer wiring is too costly…

…Or in temporary spaces such as open-air markets or polling locations, where wiring would be disruptive or impractical.

Each year, large organizations spend millions moving employees from one office to another. With wireless phone and system connectivity, those expenses can disappear. Office space coordination becomes more like hotel operations — a matter of keeping tabs on who's where when.

Why start now?

As demonstrated by "first movers" in each of these areas, e-business offers clear advantages that few would dispute. The real question for most companies is not why, but how and when to take the first wireless step.

Thanks to rapid technological advances and growing levels of customer feedback, manufacturers are continuously releasing new mobile devices. Meanwhile, wireless protocol debates rage, keeping global standards out of reach. A new generation of telecommunications systems, optimized for wireless data with rich multimedia capabilities, and Bluetooth technology, with its ability to provide quick, on-the-spot connections, promise even greater opportunities in the near term. In the midst of so much turmoil, why would an organization decide to launch a mobile e-business initiative *now*?

Wireless — like every enabling technology before it — demands both technical and organizational learning. Businesses that start now are more likely to finish their required "education" early, and begin reaping benefits sooner than their competitors. Future wireless capabilities can be built quicker and at less cost because of the knowledge and experience gained in previous stages. Waiting creates lost opportunity costs as well as competitive risks.

Enterprises that are busy converting (potentially mobile) business processes to a Web interface can achieve additional cost benefits by building in wireless capabilities as they go, rather than trying to redesign or retrofit later. Besides reducing the overall development expense, a common architecture for Web and wireless applications provides a platform for consistency across communications channels — a key enabler for businesses pursuing a strong brand and improved customer satisfaction.

Some organizations that are reluctant to assume the role of full-scale early adopter are hedging their bets. Rather than risk their current position in the marketplace by doing nothing, they are starting now with small, well-defined steps and moving quickly into multiphase projects. Early learning — even on a small scale — is advantageous.

Planning your move

As companies begin to think about extending e-business into the mobile arena, new questions come to the fore:

- What is the real value of "mobilizing" a particular part of your business?
- What lessons could you learn from a pilot? Is there a defined group of individuals who could serve as a "natural" audience? Applications designed for your own employees often provide an ideal first step into wireless.
- What's the most appropriate network platform to address a particular business need? Many solutions can be built relatively inexpensively using proven technology such as campuswide wireless LANs. Some proprietary wireless networks that use different standards than cellular networks offer nationwide coverage that approaches the same level of availability and reliability typical of today's wireline communications.
- How can your application design address the speed and space limitations inherent in wireless communications? How do you balance the trade-off between mobility and functionality?
- Given that wireless issues vary greatly in different parts of the world, where will your solution need to operate? Will its use be confined to a specific geographic area?
- Is your current network security infrastructure adequate? Can it be easily extended to include the wireless domain?
- Knowing that the typical life span for wireless devices is brief, and that "standards" are not yet standard, how can you design your systems *now* to limit the degree of change required later?

At IBM, we're ready to help you mobilize your e-business. We would welcome the opportunity to join you in an IBM innovation workshop to explore places within your business where wireless technologies can make a real difference. If you'd like to discuss how we might put our creativity and expertise to work for you, please contact us at enVision@us.ibm.com. To read more about other resources for business executives, we invite you to visit:

ibm.com/services/innovation/ber.html

About the author

Dean Douglas is the General Manager of the IBM Wireless e-business Services organization in the Americas. Dean and his team help enterprises imagine and implement a strategic — yet practical — mobile dimension to their e-businesses. You can contact Dean via e-mail at deandoug@us.ibm.com.

Contributors

John Baker, Practice Leader, Pervasive Computing, IBM Global Services

Bob Egan, Principal, Mobile and Wireless e-business Services — Americas, IBM Global Services

Chris Bray, Mobile e-business Executive, IBM Global Services

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