



# The Shift to Mobile Technologies

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By

Heather A. Smith  
James D. McKeen

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## Introduction

Mobility has arrived and it's making a huge difference in our personal and working lives, said Professor Tom Vassos, an expert in IT innovation and e-business strategy. Mobile technology –smart phones, e-readers and tablets – is being adopted about eight times faster than was the internet and the use of mobile platforms has already surpassed traditional platforms. Eighty-five percent of mobile phones in Canada are now smartphones and the majority of users (87%) are under 50 years old. In business, CIOs rank mobility solutions as second only to business intelligence in their strategic planning priorities.

To help members shape their vision and planning for adopting mobility in their organizations, The CIO Brief invited Tom and Catherine Manarolis, of IBM's Mobile Solutions and Consulting Practice, to share their insights and experiences in developing and implementing mobile strategies. They noted that mobility challenges and opportunities for CIOs can be looked at from both an internal (B2E) and an external (B2C) perspective.

## Internal Mobility (B2E)

Most companies are now wrestling with the need for their internal IT to keep pace with what's going on in the consumer marketplace. In contrast with the past, new trends in IT are now emerging first in the consumer market and then spreading to business organizations. This consumerization of IT is leading to the convergence of the information technology and consumer electronics industries and a shift in IT innovation from large businesses to the home. Many CIO Brief members echoed this point, noting that their use of mobility in business is now defensive because people are demanding to use their personal and "smart" devices in their work and to interact with other organizations. As a result of these pressures, some companies are beginning to allow employees to "bring their own devices" (BYOD) to work.

The types of mobility supported by Canadian businesses are evolving rapidly, said Catherine. While BlackBerries are still the primary devices allowed, about 25% of companies are planning to deploy other platforms, such as Apple and Android, over the next year. "There are so many different types of devices out there that BYOD is one part of a solution to the problem of consumerization," Catherine explained. She also noted that BlackBerries are still very widely used in organizations and that there is a reluctance to make any other platform a standard, although corporations are increasingly willing to open themselves up to the use of other devices.

In addition, while tablet sales (now including e-readers) are rapidly increasing, companies are finding that tablets do not really replace PCs; instead they complement them because of their portability and ability to be used in multiple locations. "The role of these devices is becoming more specialized and this increases the need for integration," she said. As well, innovation in one type of device (e.g., touch, voice, portability) is influencing other devices.

"The majority of work with mobile projects is in the back end," Catherine explained. Seventy percent of the effort involves infrastructure, communications, data, and security. "Because mobile applications are very visible, all of these elements need to be rock solid," she said. Thus, even if employees are using their own devices there is still a lot of "heavy-lifting" to do to ensure that mobile applications will work and be secure. This is why many companies are adopting "BYOD lite" as a preliminary strategy, which limits

what employees can do with their mobile device, e.g., to email. True BYOD includes providing employees with full mobile access to internal applications and achieving this level of mobility is more challenging. “Most internal auditors break into a cold sweat when they consider the risks involved in using mobile,” she said.

Effective mobile strategies will begin with tasks where employees or consumers are already using the technology and build from there. At present, mobile apps are dominated by games and entertainment and are largely geared to consumers. There is little or no integration with back end systems. Over the next 4-5 years however, Catherine predicted that organizations will develop a mobile enterprise application platform and will be more focused on B2B and B2E applications, including custom development. This will enable deep integration of mobility with back end and legacy systems and access by many types of mobile devices.

“Mobile provides companies with a unique opportunity to re-think how enterprises interact with their customers, employees and partners,” said Catherine. Initially, apps will simply be modified from other web-based applications. However, to really leverage the power of mobile and compete with it, companies need to incorporate its capabilities into their strategies. Some of the key elements of mobility are:

- **Context awareness.** Devices can use the user’s context (i.e., location, time, presence and social context) to anticipate their needs.
- **Interaction.** Devices can include digital sensors, cameras, and voice interactivity.
- **Engagement.** Mobile devices have the ability to proactively initiate interactions with end-users as soon as relevant events take place.
- **Intimacy and individualization.** These devices are always connected and can engage the individual personally anywhere.
- **Immediacy and convenience.** They can provide simple and fast interactions and notifications.

Whereas previously, IT architects have developed their strategy and roadmaps considering people, processes and technology, they must now also address *context*. Catherine identified six lessons that she has learned from helping clients develop and implement their mobility strategies:

1. **Have a strategy in place.** Initially, this will involve identifying where to start and what can be easily mobilized. Companies should consider B2B and B2E apps as well as B2C ones. With feedback and as trends develop, this strategy should be continually revisited.
2. **Leverage what you already have** and identify gaps.
3. **Execute in small incremental projects.**
4. **Integrate below the glass via a multi-channel architecture.**
5. **Make processes mobile-aware.**
6. **Implement based on user needs, not just technology.** “This is the key component,” said Catherine. “Mobile developers can’t afford to be enamored with technology for technology’s sake.”

## External Mobility (B2C and B2B)

Tom explained that mobile business is one of two major global trends (the other being social networking) that are considered to have the biggest potential impact on business model creation and success today. “The combination of mobile and social business is very powerful,” said Tom. “The marketplace is huge and growing every day.” In June 2011, the number of minutes consumers spent on mobile apps exceeded those spent on the web, although both numbers are increasing.

He presented a mobile innovation strategy toolkit for companies to utilize (see Figure 1). Effective mobile strategy development has five phases:

1. **Foundations**
2. **Exploitation**
3. **Innovation**
4. **Business extension**
5. **Strategic transformation.**

Each phase is driven by an organization’s capabilities, challenges and opportunities, including:

- **Execution enablers**, such as the organization’s culture, rewards, collaboration, structure, change management abilities, communications, leadership and governance.
- **Innovation infrastructure enablers**, including suggestion programs, technology adoption programs, research partnerships, innovation workshops, market research, partner collaboration, and innovation jams.
- **Pain point triggers**, including both customer and business pain points.
- **Mobile instrumentation and sensor enablers**, such as WiFi, RFID, cameras, video recorders, GPS, compasses, accelerometers and touch screens.
- **Mobile technology enablers**, including mobile bar codes, augmented reality, biometrics, and video playback.
- **Marketing and sales cycle mobile strategies** for branding, pre-sales, closing the sale, purchase transaction and post-sales support.
- **Mobile business innovation strategies** for operations, products, mobile services, business functions, and business models.

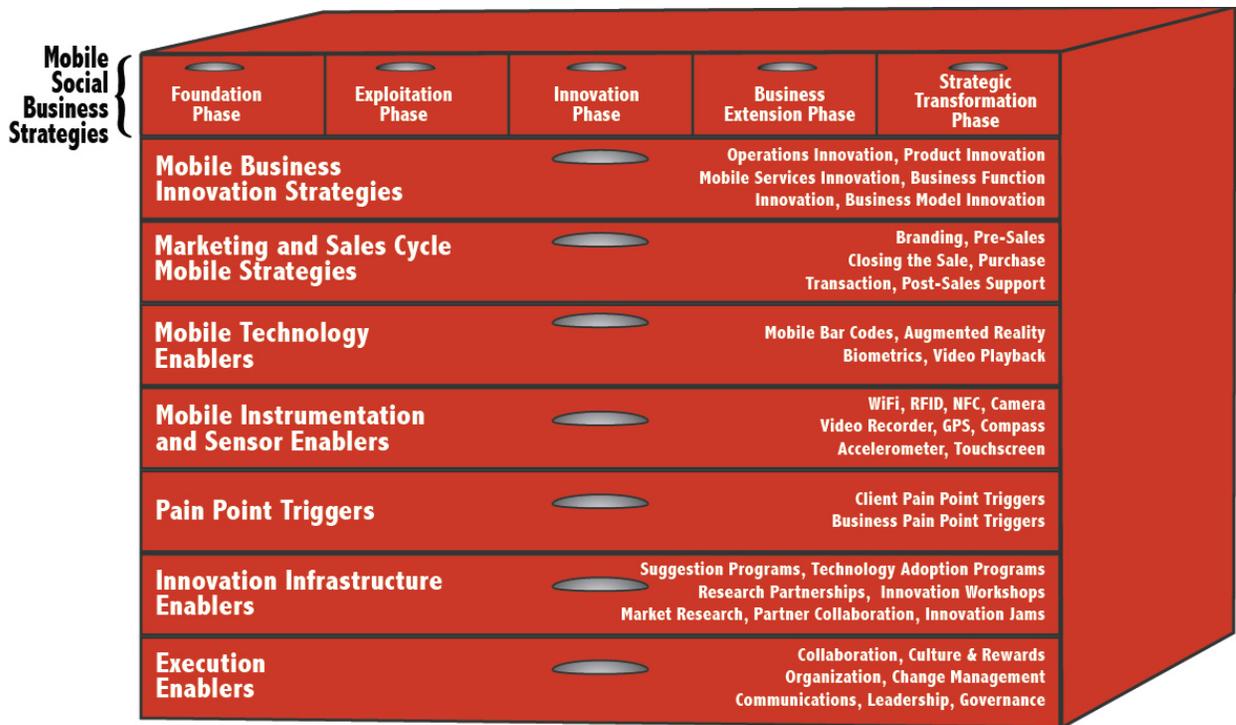


Figure 1. The Mobile Innovation Strategy Toolkit

Tom recommends considering these factors in each phase of an organization's mobile strategy development. He then gave some examples of how mobility can be used to address critical business questions.

**Can mobility drive business model innovation?** Zipcar is a car-sharing company that uses mobile for both potential customers and members. Members can find zipcar locations, reserve cars and find out their availability and unlock and lock the car with their mobile phones.

**Can mobility increase sales?** Harley-Davidson customers receive texts about special sales, events and member only deals. Following one promotion, one dealership reported its best sales day in nine months. Dominos Pizza in Britain allows customers to order pizza for delivery over their mobile channel and have achieved significant sales growth as a result.

**Can mobility eliminate or reduce line-ups for my customers?** Stop & Shop lets consumers scan and checkout their groceries with a "scan-it" app. It also presents them with personalized offers based on their past purchasing history. Subway enables customers to preorder sandwiches for pick-up, thus skipping lunchtime lineups. Nordic Choice Hotels offers front desk lineup bypass and mobile key hotel room entry via mobile phones.

**Can mobility improve my level of customer service?** BestBuy's twitter account has provided over 75,000 answers to customer inquiries, improving customer satisfaction.

**Can mobility leverage social media to make a bigger branding impact?** Coke hosted a real-life RFID event tied to Facebook in Israel. As teens engaged in activities, they automatically updated their status by waving an RFID wristband across strategically-located readers. While the village hosts only 650 teens, over 35,000 updates are made each day.

**Can mobility simplify payment?** PizzaExpress allows customers to pay their bills via credit or debit card via an iPhone app. Customers get an electronic receipt and the process reduces workload for staff. Boku enables customers to pay for goods via their telecom carrier bill. And Ports Coffee & Tea lets consumers pay for drinks via a mobile app. This enables the company to create a pop-up store where it can accept mobile payments without requiring electricity. Coke has SMS-enabled vending machines that let consumers pay for their drinks using mobile devices.

Companies should be particularly aware of the potential of the instruments that are embedded in a typical smartphone to drive new ways to acquire and process information and create entirely new services. For example, Telus' Kid Find Service builds on the GPS technology in cell phones to enable parents to track and locate their children anywhere in the world.

Biometrics are also important mobile enablers. For example, Scott's Food and Pharmacy enables its customers to pay for goods using a finger scan. Many companies have introduced QR codes which customers can scan wherever they are and get specific information related to a product. These codes can be used to download virtual coupons, get detailed product specs, or scan contact data directly into a smartphone address book. QR codes are now on wine labels, cereal boxes and new cars, enabling links to videos, coupons, conversations and information about a product. These codes can be placed on signs, ads, posters, billboards and even T-shirts, gravestones and buildings. Tesco uses QR codes in Korea for virtual grocery shopping in subway stations. Customers scan the codes of the items they want and when their purchases are complete, their groceries are boxed up and delivered to the customer's door.

Tom concluded his presentation with a top-ten list of possible strategies companies could adopt for their marketing and sales cycle:

#### 1. **Branding/Pre-sales**

- i. *Inbound marketing* through a mobile browser to provide value propositions, product specifications, and competitive strengths.
- ii. *Niche/Community marketing*.
- iii. *Social media marketing*.
- iv. *Viral marketing*.
- v. *Outbound marketing*.
- vi. *Mobile advertising*.
- vii. *Augmented reality* (e.g., QR codes, virtual reality).
- viii. *Coupon marketing*.
- ix. *Freemium marketing, Video marketing* (e.g., video product demonstrations).

## 2. Closing the Sale

- i. *Comparison shopping marketing.*
- ii. *Community review marketing.*
- iii. *Trial marketing.*
- iv. *Clicks and bricks marketing.*
- v. *Gift registry marketing.*
- vi. *Hyperlocal marketing (e.g., RFID marketing, location-based marketing).*
- vii. *Check-in social media marketing (e.g., FourSquare check-in with friends at key locations).*
- viii. *Gamification marketing.*
- ix. *Augmented merchandising (e.g., QR codes)*
- x. *Employee customer service app marketing (e.g., for inventory queries).*

## 3. Purchase Transactions

- i. *Daily deals (e.g., Groupon).*
- ii. *Gift card transactions.*
- iii. *Web browser or mobile app transactions (e.g., shopping cart).*
- iv. *Click to call transactions.*
- v. *Clicks and bricks transactions.*
- vi. *Proximity computing transactions.*
- vii. *Employee mobile transactions.*
- viii. *Tap 'n go transactions.*
- ix. *In-store self check-out transactions.*
- x. *Payment processing.*

## 4. Post-Sales Support

- i. *Loyalty rewards transactions and support.*
- ii. *Physical goods shipping tracking support.*
- iii. *Digital goods transmission (e.g., digital tickets, e-books).*
- iv. *Installation/set-up support.*
- v. *Technical support.*
- vi. *Community engagement.*
- vii. *Customer service support.*
- viii. *Post-sales support (e.g., alerts).*
- ix. *Warranty support.*
- x. *Product recall support.*

In each of these areas, Tom recommends asking three key questions that will help a company shape its mobile strategy:

- How are mobile apps currently being used in our industry?
- How might mobile apps be used?
- What customer needs and/or pain points are being addressed by our mobile apps?



## Concept

The purpose is to bring together CIOs from leading edge organizations to exchange best practices concerning IT management strategy. The name "brief" reflects the focused and direct nature of the sessions.

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