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MOBILE COMMERCE:
What It Is and What It Could Be

Just a few years ago, many pundits proclaimed that m-commerce had arrived, and would shortly provide unprecedented commercial functionality to the masses [2, 5]. Cell phone users were expected to be routinely accessing data online [5], and speedy third-generation cellular standards would soon solve associated bandwidth difficulties [2]. It hasn't quite worked out that way—it sometimes takes the passage of a few years to see how rationality and market economics can skewer technological predictions [4]. Now, with hindsight, we can review what we once thought m-commerce might be, and consider its present and future.

M-commerce is not always, strictly speaking, classical e-commerce. The idea of e-commerce is widely understood and there is also a certain agreement on what m-commerce is at a basic level, since the "m" in the name is self-evident. Both modalities are computer-assisted and network-enabled, so what are the differences? While each of the two shares aspects of the other, each also possesses unique characteristics that tend to define its state and functionality.

What It Is

E-commerce is considered to be the buying and selling of information, products, and services via computer networks [3]. Thus, a primary distinction between m-commerce and e-commerce lies in the differences between transactions and access. E-commerce is oriented toward supporting and realizing transactions. However, the wireless protocol originally designed to facilitate mobile commerce transactions (WAP) has not fulfilled its technological promise [1], so the most distinctive feature of m-commerce that has emerged in many of the larger mobile markets is the facilitation of enhanced information network access. It's not all about WAP; new protocols are appearing, but in significant markets like the U.S., m-commerce expectations and perceptions have already been molded by WAP.

The main idea of the differences between modalities is that e-commerce can be mobile, but m-commerce is not always transactional. Considering Internet-enabled in-store kiosks, m-commerce could also be transactional if not always "phone-in-hand" mobile. This distinction exemplifies a typical e-commerce practice in Japan: iMode phones provide customers with information about shopping choices, but actual product orders are often entered via in-store self-service computer portals. So, m-commerce provides good support and promotion for e-commerce transactions to roaming users, even if it's not always fully functional for every shopping need.

E-commerce need not always be truly transactional, either. Amazon.com's CRM system identifies customers and automatically matches them with available product resources. This CRM function is often used just for information, when buyers browse but don't buy. M-commerce also has the potential to be transactional: consider a cellular telephone handset used to place an eBay bid while traveling. Even so, the WAP-based promises of mobile e-commerce capabilities have not been completely fulfilled [1, 2],

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and usually, m-commerce is a support mechanism that provides mobile information and promotion. Given the significant differences in display capabilities between computers and mobile devices, even with recent improvements in phone display technology, it's simply difficult to "sell shoes and socks on a cell phone screen [2]."

What It Could Be

There is a great amount of interest in using cell phones in m-commerce as digital wallets, much as mobile devices have been used in some countries to activate vending machines. Other possibilities include e-services models that use intelligent systems to "push" information services linked to database and GPS functionality to business travelers' phones, in order to provide automatic updates of travel reservations based on location-based data from their mobile devices. Convergence is likely to result in wireless and GPS-linked PDA-phones that automatically accommodate our shopping needs with location-dependent vendor offers and promotions. We are beginning to see this degree of convergence in recent offerings from Handspring, Nokia, and Samsung that offer PDA and Internet capabilities combined in wireless devices.

Location-based wireless services include the example of Athens, Georgia's "downtown wireless network" that provides diners and club patrons with up-to-the-minute information on happenings and promotional offers in the university city's entertainment district. Imagine location-based services deployed in retail stores, where wireless signals could serve the same purpose as a scanner-swiped loyalty card at a supermarket checkout; the wireless device could leverage a shopper's profile to guide the present shopping experience, in contrast to the current model of generating coupons for the next shopping trip at checkout time.

Conclusion

E-commerce is mostly about buying and selling [3], while m-commerce was expected to be largely data-driven [5]. The true middle ground of the converged mobile future is likely to include aspects of each business model, although the only thing we can be sure of as it evolves in the near future, converged with handheld computers and developed in concert with networking and database intelligence, is that it will probably bring us as yet unanticipated capabilities. This situation has generally been the case historically with most evolving IT applications. **C**

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