

# Shaping the Evolution of Mobile Commerce

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## INTRODUCTION

How does a breakthrough technology, or a breakthrough combination of formerly separate technologies, become a viable business? What are the necessary conditions, competencies, and organizing mechanisms? Which enterprises are in the best positions to provide the various competencies and to organize the new business? How will the new business unfold?

Such are the questions posed by mobile commerce (m-commerce) or wireless electronic commerce, the business result of the Internet's convergence with broadband wireless communications. M-commerce's value chain model can help shed light on how this new business will develop and grow in the years to come.

Generally speaking, "value chain" can be defined as a map of the entire set of competencies, investments, and activities required to create, produce, deliver, maintain, and reap the proceeds from a product or service, and the relationships among those investments and activities. The profits and competitive advantages of participation in a given value chain reside dynamically within the chain, accumulating at the positions of greatest value. The enterprises that hold these positions have a great deal of control over how the chain operates and how the benefits are distributed.

The wireless telecommunications industry has changed dramatically since the late 1970s and early 1980s,

when the first commercial handsets were launched. Since that time, mobile cellular communications systems have completed two entire generations of development, as have their respective value chains. The first mobile generation, or '1G,' used analog technology for transmitting voice calls, and had a correspondingly simple value chain (see Figure 1). Its value chain was very similar to that of fixed lines.

The second wireless generation ('2G') used digital technology and limited bandwidth. It provided Short Message Service (SMS) text messaging in addition to voice service.

An intermediary step between the second and third generations is 2.5G, which has higher bandwidth than 2G and "always on" wireless access.

## BACKGROUND

We are now beginning to see the results of the third generation (3G) of wireless development. The 3G networks operate at a much faster speed than those of its predecessors and feature much greater capabilities: the Multimedia Messaging Service (MMS), which supports simultaneous transmission of various media—images, text, video, and audio clips—along with voice (Rowello, 2001). The 3G-value chain is also considerably more complex, as Figure 3 illustrates.

*Figure 1. First-generation value chain: cellular voice service*

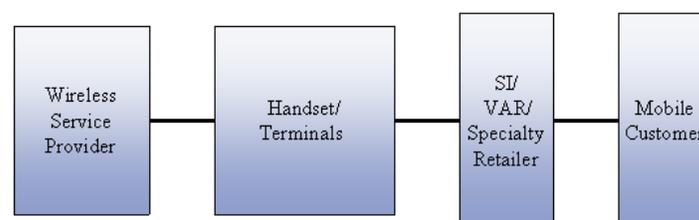


Figure 2. Second-generation value chain: digital voice and data

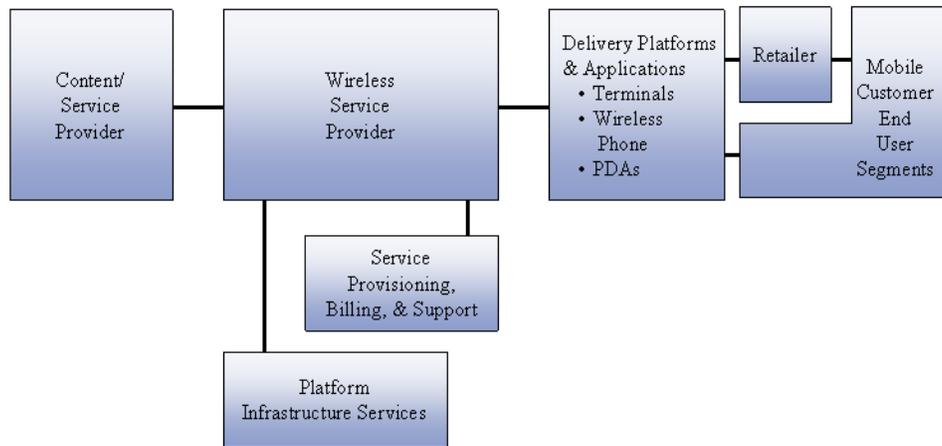
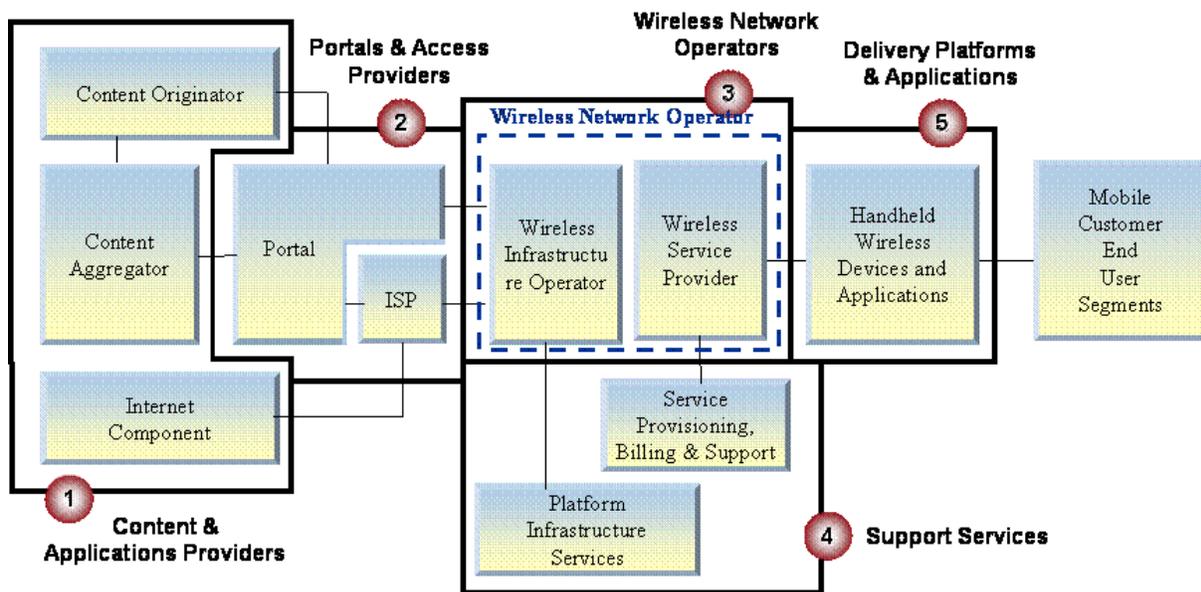


Figure 3. Next-generation value chain: the wireless Internet



In an article published in 2000, we presented a model of the unfolding ‘3G’ mobile commerce value chain, which groups the participants into five major elements (Rulke & Chiasson, 2000):

- Element 1—Content and Application Providers: e.g., Bloomberg and MapQuest
- Element 2—Portal and Access Providers: e.g., Yahoo! and AvantGo
- Element 3—Wireless Network Operators: e.g., Sprint PCS and Vodafone
- Element 4—Support Services: e.g., SpectraSite and Convergys
- Element 5—Delivery Platforms and Applications: e.g., Nokia and palmOne

This value chain is highly horizontal, and reflects the paths and supporting capabilities required to consummate mobile commerce: to create, aggregate, sell, and deliver content.

The time for 3G is imminent. The network technology is finally sound enough to be introduced to the general

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