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**Chapter XIX**

**Mobile Computing Business  
Factors and Operating  
Systems**

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**ABSTRACT**

*This chapter introduces the enormous impact of mobile computing on both companies and individuals. Companies face many issues related to mobile computing. For example: which devices will be supported by the organization? which devices will fulfill the business objectives? which form factor will win? which features and networks will future devices offer? which operating systems will they run? what will all this cost? what are the security issues involved? what are the business drivers? This chapter will discuss the major business drivers in the mobile computing field, and provide an analysis of the top two operating systems that are currently running the majority of mobile devices. These platforms are the 1) Palm operating system (OS), and 2) Microsoft Windows CE operating system. The chapter will analyze the strengths and weaknesses of each operating system and discuss market share and future growth.*

**INTRODUCTION**

Mobile computing, defined as a generalization of all mobile computing devices, including Personal Digital Assistants (PDAs, e.g., Palm Pilots, Pocket PCs), smart phones, and other wireless communication devices, will continue with dramatic changes throughout the next five years. There are a number of reasons for change,

but two main factors are the convergence of next-generation handhelds and high-speed wireless technology. The operating systems found in today's handhelds will provide the foundation for future devices and applications. The two main operating systems for PDA's are the Palm OS and the Windows CE OS. Which operating system should companies or individuals implement? It depends on a number of items. One important issue to consider is what application(s) are needed by the user(s). Once this question is answered, it may help to eliminate some operating systems and devices. Another important item to consider is portability. Portability of applications is important because devices change rapidly and, if applications are portable, they can be reused on new devices, without having to be rewritten. If applications are developed in a language that allows for portability, such as Java, then these can be deployed to a wide range of devices, including handhelds that support various operating systems, embedded Linux devices and pure Java devices. Another important issue to consider in selecting an OS is what type of development tools is available, as well as the number and strength of the programmers, so they can create and maintain applications. Currently, the Palm OS supports the largest number of packaged applications. Many of these applications, however are better suited for individual, rather than business, use.

## BACKGROUND

According to Jones (2001), there are four main factors driving the mobile business phenomenon. They are: 1) Economics, 2) Business Need, 3) Social Trends, and 4) Technology. Economics includes the falling prices of mobile airtime and the inexpensive cost of devices. Jones (2001) states that, during the next five years, costs will continue to decrease, allowing new mobile applications to be developed and reducing Bluetooth chip sets' cost to under \$5, which will enable electronic devices to be networked together. Business needs include organizations needing new types of mobile applications to increase customer service and enable better supply chain management. In many countries, mobile devices have become a lifestyle accessory, mainly among younger adults. As young adults continue to want more functionality from their devices and applications, there will be a mix among the mobile technology and entertainment and fashion. New core technologies, such as WAP, i-mode, Bluetooth and 3G networks, are enabling a new generation of mobile applications. As these four factors continue to evolve, they will continue to push the growth of the mobile business arena.

The main differences between the Palm OS and the Pocket PC OS are discussed in the next section of the chapter.

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