

Mobile commerce



Symbian's security implementation enables data confidentiality, integrity and authentication through security protocols such as SSL and IPSec. It also supports the authentication of installable software using digital signatures. Symbian supports encryption and certification management to authenticate both the user and the service providers. Security is a key feature to enable m-Commerce (mobile Commerce). Open Standards and Interoperability Symbian provides a core set of APIs (Application Programming Interfaces) to facilitate the development of new applications by independent software vendors. Symbian enables mobile phones to be a platform for deployment of new customized applications and services in different languages, customized to the local market.

The Impact of Symbian on the Mobile Phone Industry Mobile communications and mobile information technology are at last starting to converge. Phones that manage personal information, personal companions that phone home, and laptops that airlink, all indicate that there is a viable demand for integrated wireless technologies. By the middle of this decade, there will be about 1.5 billion mobile phones in use worldwide. It is certain that as we move from basic digital phone networks to high-speed 2.5 and third-generation (3G) infrastructure, there will be more sophisticated operating systems that will empower an increasingly wide variety of high-technology handsets.

We'll see operating systems that will exploit the high-speed networks that are being planned and built today. These systems are envisioned to operate every application imaginable from videoconferencing and music downloading to remote gaming and mobile commerce. Within these trends and

developments, Symbian aims to be in the forefront. It strives to make its mark in the industry by developing a cutting edge operating system that will exploit the exciting possibilities of next-generation mobile telephony.

An Analysis of Symbian's Market Strategy The success of Symbian depends on whether its product strengths can overcome its product weaknesses and whether the mobile device industry's opportunities can overcome the industry's threats. The section below analyzes Symbian's market strategy with a SWOT analysis, by discussing its Product Strengths, Product Weaknesses, Industry Opportunities and Industry Threats.

1. Product Strengths Symbian Consortium Symbian is owned by a consortium of major mobile phone manufacturers: Ericsson, Matsushita (Panasonic), Motorola, Nokia, Psion, Siemens and Sony Ericsson. As the owners of Symbian are major mobile phone manufacturers, Symbian is guaranteed to be implemented by the largest mobile phone manufacturers globally. Due to the large influence of the Symbian consortium, about 80% of global cell phone manufacturers are purchasing Symbian licenses.

With the convergence of PDAs and mobile phones, mobile phone manufacturers are banding together to compete aggressively against PDA manufacturers. PDA-Phone devices will increasingly be sold by network providers, like cell phones are sold today. Since Symbian is owned by a consortium of mobile phone manufacturers, who already have established relationships with network providers, Symbian may have an advantage over Microsoft who is still working on developing those relationships for its PocketPC product.

Superior Technology - Flexibility and Differentiation Symbian is an open standard, modular and future-proof operating system. It is designed to be highly configurable and flexible. Thus, phone manufacturers and network providers can create a customized version of the Symbian OS for their respective markets and differentiate themselves competitively. Despite its many strengths, Symbian is also disadvantaged compared to its competitors for the following reasons:

Lack of mobile phone operating system programmers Mobile phone operating system programming is a highly specialized skill. Although there are a number of software programmers, experienced cell phone operating system programmers are rare. The long-term success of Symbian depends on continually evolving its operating system to improve existing features and introduce new services. If it is unable to recruit and retain top-notch mobile phone operating system programmers, its product will not be as competitive as the PDA-based products.

High investment cost with the introduction of a new product Despite the current economic downturn, Symbian needs to invest a large amount of money to market its new brand and position its new product in the global market. These are costs that its competitors, with established brands, do not have to incur. Dependency on network providers to upgrade to 3G (3rd Generation) networks In order to fully leverage the capabilities of Symbian, network providers need to upgrade to 3G (3rd Generation) networks.

Network providers may be slow to upgrade due to the high investment, which will give time for Symbian's competitors to catch up and develop their own version of a PDA-Phone operating system.

3. Industry Opportunities The need for a new mobile phone operating system The increasing demand for new mobile services, such as interactive messaging and data services are exhausting the limited capabilities of old mobile phone operating systems. The mobile phone market now requires a new operating system that has the ability to accommodate increasing user requirements and emerging market technologies.

Product convergence Users are demanding integrated devices to eliminate the need to carry multiple products. This is the reason why PDAs have become so popular, because it is able to combine the functionality of a planner, a calculator and a computer in one device. As a result of this trend, hardware manufacturers are integrating more products together such as a digital camera, an mp3 player and a cell phone in one unit. For many hardware manufacturers, the goal is to create a single portable device that will accommodate all voice and data applications.

Emergence of Packet-Switched Networks and Applications Additional revenue streams from packet-switched networks will motivate network operators to upgrade their existing cellular infrastructure over time. In European markets, messaging proved to be a major revenue generator for network operators, and this will likely occur in North America during the first phase of the upgrade to packet-switched networks.

Symbian's management team believes that Multimedia Messaging (MMS) will be highly successful when it is introduced and is expecting it to be a key revenue stream for network operators. Unlike text messaging, MMS provides the capability of sending rich multimedia content to mobile phones. Initial

implementations of MMS will produce messages that include images, animated graphics, and sounds. Future versions will include more complex formats, such as video streaming, which will be possible once MMS moves to an IP-bearer (instead of WAP). These rich multimedia services can only be delivered by an advanced mobile operating system, like Symbian.