ISRC *Notes* – November 1999

Managing in the Wireless World: A Focus on Emerging Technologies

Based on Presentations by John Ferrari, Mark Wilson, and Ransom Siler

The November seminar did not quite raise Dick Tracy to the respectability of Leonardo Da Vinci or Nostradamus but our speakers did demonstrate that wristband technology is not that far away. Connectivity is clearly in the palm of the hand and readily available from a number of vendors. Satellite communication systems are in place and a number more are currently in implementation phases. Mr. John Ferrari, Director of Global Product Marketing for Nokia Internet Communications, and Mr. Mark Wilson, Director of Planning & Business Development for Ericsson, Inc., described the present and speculated for the future from the hardware, application, and planning point of view. Mr. Ransom Siler, Program Manager for Shell Services International, focused on the satellite communication aspects of data and voice transmission and discussed current applications important to the energy sector

Introduction and Overview

John Ferrari entitled his presentation as "Evolving Toward a Mobile Information Society" and subtitled it "putting the net in every pocket". One of the significant ideas here is that we are not just dealing with the mobilization of our workforce or managing data under a new technology, rather we are looking at the broader aspect of a societal change. The wireless technologies touch all of us in the home, at school, on the road, and in the workplace. The telecommunications industry is merging with the computer industry and the media industry to create devices and applications that are changing the way we interface with each other and with our knowledge sources.

The Market Drivers

According to John Ferrari, the drivers of wireless technology are:

1. The Internet has become the de facto repository for all types of information
2. We have come to expect instant access to information
3. Much of our work and personal lives are spent on the move
4. Productivity expectations do not decrease when away from the office
5. The adoption of wireless portable devices is steadily increasing
6. Enabling mobile professionals is critical to establishing/maintaining competitive advantage

In sum, work is not a place anymore. Work is now an activity that is performed at any location and probably multiple locations. Wireless technology is the enabler that is making this possible through a combination of technology and economics.

Economic Impacts of the Industry

Mark Wilson graphed the economic impact of the high technology industry on the overall economic growth of the US. High technology now represents about 35 percent of all economic growth while it contribution to inflation has been to reduce inflation at an annual rate now

approaching 12 percent. The velocity of adoption has also changed. While it took almost 100 years for the fixed telephony to reach one billion users, it is projected that mobile phones will have a billion users in a total of 20 to 25 years.

Within the high technology industry, Mark differentiated between the original, traditional firms such as IBM, DEC, and Wang versus the telecommunications oriented hardware and software marketers such as Cisco, Microsoft, Oracle, and Dell. Whereas market capitalization of the traditional firms has gone from $93.1B in 1987 to $113.5B in 1997; the telecoms have gone from $11.8 to $588.1B in the same period.

The Mobile Information Society

Nokia projects that by 2004 there will be more handsets connected to the Internet than PCs. People are demanding mobile access to the Internet, email, corporate data, news, weather, sports, banking, stock trades, and purchasing anything from airline tickets to food. There is a wide choice of hardware (or appliances as they are called in the trade) currently available. Which one works best is a contextual decision. The future, which John Ferrari defines as two years away, sees more voice and video capabilities than are currently economically available today. The applications are for the most part already existing; it is when they become practical in a mobile environment that their value can increase.

Ransom Siler showed how the applications discussed at the domestic level could also be accomplished on a global scale by elevating the transmission media from a cellular structure to a satellite. Although a couple of the earlier attempts by Iridium and ICO have had difficulties making these services economical, other consortiums are bringing new services online that can operate at a lower cost.

One of the favorite targets for wireless technology is the automobile. Ransom and John both discussed several car-oriented applications ranging from globally transmitted music and news to teenager control devices. There are already several prototype applications in operation today covering theft tracking and vehicle disabling, communications, and global positional data. In order to accommodate the higher costs of satellite transmission, Shell is evaluating a download/upload service when a vehicle comes in for fueling. Vehicle maintenance data, traveling aids, entertainment data, etc. could all be made available on a volume basis.

Current Barriers

As typically occurs with a new technology there is a lack of interconnect standards. Manufacturers of hardware and software are not yet all playing by the same rules. There is still jockeying going on as to which technology will be the dominant one and which will become the standard. At the up-to-ten meter distance, there is a protocol called “Bluetooth” which may be up to two years away before it is perfected. Other protocols for the longer distances are also still being decided. Bluetooth could become the standard by which a PC would communicate with a handheld device.

Once the standards battles are decided, the technological advancement rate will accelerate. All interested parties will be building toward a common platform and advances made by one will benefit the others. The convergence of voice communications and data communication is already occurring and the speeds are increasing. Once the standards are in place, the operating pieces can come together are provide the user with seamless interconnections.

The subject of security in the wireless environment is a topic within itself. Security is one of the primary building blocks underlying the success of wireless technology. Other building blocks include improving home networking solutions, wireless interconnection and application protocols, faster Internet access, improved telephony technology and improved speeds in mobile systems.

Planning for the Wireless Future

Mark Wilson described planning at Ericsson for the wireless future. Ericsson plans by looking at three possible scenarios as to what direction the wireless world will take from a business point of view. They identified the network centric (Gran Tradizione), server centric (Service Mania), and appliance centric (Up & Away) business models. No one knows which direction the future will take, but planning for all three scenarios means that they will be prepared regardless. These scenarios have distinctly different paths for the money spent and therefore is critical to businesses knowing where and who their customers will be.

Network Centric Business Model

Under the network centric scenario the consumer buys directly all hardware, content, and services from multiple vendors. Advertisers spend money with service providers to advertise their products or services. Content providers are paid by the service providers.

Server Centric Business Model

In the service centric scenario the consumer contracts with a third party service broker who in turn buys the content, hardware, and services.

Appliance Centric Business Model

The appliance centric scenario reflects the consumer buying the hardware devices from hardware vendors. Advertisers are buying advertising from the hardware vendor as well. The hardware vendor buys the services and content

Summary

The wireless world is a reality. Applications are already here. Technology stills has a way to go. Economics still have some room for improvement. Standards have a long way to go. Security issues still need to be resolved. Directions still need to be clearer. Either way though, we are going to be a mobile society and, just as probably, a mobile economy.

Additional Information

Miller, Barry 1998. *Satellites Free the Mobile Phone.* IEEE Spectrum. March.

Nelson, Robert A. 1998. *The Art of Communication via Satellite*. Via Satellite. July.

http://www.nokia.com/main.html
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