Wireless Valley Study Tour, Sweden, June 2001

by Henri Slettenhaar 5 August 2001

Introduction

This first study tour to a Nordic country was organized by Brenda Fischer-Campbell of Silicon Valley Europe. Eleven Dutch IT professionals and a city mayor travelled to Stockholm for a five day tour from 4 to 8 June 2001. Despite a population of only 9 million, Sweden is considered the world's most wired and wireless nation, ahead of most countries, including the US, when it comes to Internet access and mobile phone penetration. Over the four days, we visited eight companies and the Inet 2001 Technology Summit, organized by the Internet Society.

Why Wireless Valley?

Sweden is known for many things – IKEA, Volvo, pickled herring and raw salmon to mention only a few. The convergence of Internet and Telecommunications have advanced here faster than anywhere else. From a major hub of Internet and Telecommunications, Stockholm has emerged as the center of wireless communication and now is often called the capital of the Wireless Valley. Last year more than 1,000 new IT companies were established in the Stockholm area. The presence of all the "big boys" is remarkable. Amongst them are Microsoft, Intel, Compaq, Apple, Oracle, Motorola, Nokia - and Ericsson of course. Most of them are located in Kista (pronounced Cheesta) within easy reach by metro from the center of Stockholm. Sweden, Finland and Norway have over 70 percent mobile phone penetration, the highest rates in the world. Apart from the widespread use of mobile phones there is also a very high PC and Internet use per capita in Sweden. The presence of a highly advanced wired and wireless infrastructure with leading edge "local" telecom companies such as Ericsson and Nokia has a lot to do with this.

Another reason is the early deregulation in Sweden. Domestic air and rail traffic, electricity and telecommunications are all deregulated in Sweden. Swedes are early adopters and have developed and applied new wireless standards including GSM and Bluetooth.

Technical visits

Our first visit was to **Compaq's EMEA** Wireless Center in the northern outskirts of Stockholm. What strikes when you enter the building is the tall atrium, a very good place to meet in winter! The reason for Compaq's center in Stockholm is the presence of local partners responsible for the integration and implementation of Compaq Mobile Solutions (http://wireless.compaq.se/).

The center itself offers technical and business development support, training and marketing services, and funding. After a comprehensive overview of wireless technology,

a very complete run-down on the products and services around the iPaq Pocket PC followed by demonstrations of new applications. This took place in the atrium around a BMW Z3 Coupé. Infowave is a client-server solution. Its main application is receiving and sending email. There are two major constraints, the limited bandwidth of the connection and the size of the screen. Therefore special solutions had to be found. Email headers appear with the size and attachment information, for easy selection of only those of immediate interest.

The Z3 was there not only as an eyecatcher, but to show another application for a iPaq, a car navigation system which is operational in Germany and will be introduced in the Benelux countries soon. The iPaq receives information both from GPS satellites and from sensors of which there are over 2000 on German autobahns today. It also features build-in speakers, a necessary feature considering the tiny screen of the iPaq.

A thin client demonstration followed with a spreadsheet application which in my opinion was primitive and unconvincing. Finally, new wireless technologies were shown including Bluetooth as a replacement of the infrared short distance communication we are using today.

A very interesting visit to the management consultancy firm **Fluidminds** (http://www.fluidminds.se/) was next on the program. They claim to be business innovators and consultants in the new economy, although they prefer not to use that term so much any more. The firm started in 1998 and currently has 9 consultants in small and large companies, usually working directly for the top management. Their mission is very action-oriented with a passion to realize changes. "It is often like taking oneself hostage inside the companies", one consultant said. The world is not stable and predictable today

and even the most skilful manager does not have a clear idea what is going on, therefore dealing with uncertainty and changes is an important issue.

"What is most important is to create networks between old and new cultures inside companies", another consultant stated

The office space is managed by the "**United Spaces of Chaordia**" (www.chaordia.com), a company which organizes co-operative and dynamic environments where people work, meet, share information and develop successful businesses. As the name suggests, Chaordia represents a new approach to the workplace. The idea is that it becomes a global network of physical and virtual arenas connecting people from all over the world. It began in Stockholm; soon Chaordia will be in Copenhagen, San Francisco and Hong Kong.

Soon the Internet will be accessed more frequently from a mobile terminal than from a desktop computer, according to **Blueice Research** (www.blueiceresearch.com), a start-up concentrating on security between PDAs, Smart Phones and Wireless Service Providers. Some of the security questions of a service provider in a mobile environment are:

1) *Who I am doing business with? 2) Can anybody listen in? 3) Can vital information be changed? 4) Is there a proof of transaction? 5) What information can be accessed?*

The answer is one security solution for all mobile devices based on Public Key Infrastructure (PKI). The product is called Multipass; the client software can be downloaded for free on different PDA platforms. There have been 30'000 downloads of the PDA software so far with 14'000 on the Palm and 5'000 on the pocket PC. Blueice's partners are Infovention, Entra, Tajt and Nexus. The real clients of Blueice are on the server side we did not hear who they are.

Anna Hane

Startupfactory (www.startupfactory.com) is a venture capital firm specializing in mobile communications. The founders are a group of Swedish executives all with impressive backgrounds in IT and telecom business. The support to entrepreneurs is in three main areas: Business development, Recruiting, and financing. Anna Hane gave a brief overview of the activities which are somewhat difficult at this time. Most of the Startupfactory's portfolio are in the mobile service sector. Companies with fancy names such as MATCHEM, TARGIAN, PICOFUN, MELODY and WANNAGO. Two companies are involved with GPS receiver technology (FastraX, u-Nav). It would be interesting to know how these startups are faring today.

Is there light at the end of the fiber? This question was addressed at **Proximion** (www.proximion.com/) located in the heart of the Wireless Valley in Kista. Today more and more bandwidth is put into fiber optic cables using Wavelength Division Multiplexing (WDM). Simply explained it is squeezing light of different colors into a single fiber. Bit rates of 10 Gbps (Giga bits per second) can be achieved this way today. Proximion producies a fiber-optic spectrometer, called WISTOM, which is an essential tool for the telecom operators to monitor the power, center wavelength, and signal-to-noise ratio for up to 100 wavelength channels. The telecom companies worldwide laid more fiber than the distance from the earth to the sun. Of this enormous capacity only 1% is used today. The future looks bright for Proximion when more light will shine into the fibers!

The lack of bandwidth in the last mile is a subject of much discussion.

Bredbandsbolaget (B2) as the name suggests is a true broadband company (www.bredband.com).

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We are received by the Executive vice president Gunnar Sjögren. B2 offers two-way access to the home starting at 10 Mbps. This sounds too good to be true, however over 100'000 homes in Sweden are already connected to this unique service. With homes is meant apartment buildings, in fact the company provides fiber access to the building and a broadband plug to each apartment. This is 20x higher bandwidth than the former state monopoly Telia offers with their ADSL service. What is interesting is that this service is offered primarily to residential and small business customers at very low cost (less than $20/month). Unfortunately the true broadband services such as IP television and video on demand are not available yet. It is like having a freeway in front of your house, which only

connects to your neighbourhood. Nevertheless tomorrow's applications will depend on high bandwidth, so B2 is investing in the future. Rewiring the last mile is capital intensive and very courageous. I hope that B2's business model is going to be successful.

Have you ever thought of using your mobile phone as a payment device? **Paybox** (www.paybox.net) has made it possible and very easy. At a checkout counter for instance, the consumer selects paybox – *pay with mobile phone*, then paybox connects the two transaction partners and rings consumer on mobile phone, *consumer OKs the transaction* by entering the PIN on the mobile phone to authorize paybox to finalize the settlement. It is simple and does not require any additional hardware, all that is needed is any GSM phone, a bank account, and a registration with paybox. At this time there are 1000 Internet shops and 4000 other acceptance point in Germany with over 260'000 end-users. Now it is also present in Austria, Spain and Sweden, the Netherlands, and the rest of Scandinavia to come next. Apart from a payment system in Finland offered by the telecom operator Sonera using phone numbers to select services such as vending machines, car wash or a sauna, no other simple payment systems exist using a GSM phone. With more than 500 million GSM users there is a great future for this product.

Our last visit was to **Room33**, a mobile marketing company. Their concept is permission-based marketing. In short it gives companies the ability to send targeted, timely and cost effective messages to their audience on their personal conditions. Information is pushed to customers according to predefined preferences. The client connects to the company on the web where he or she receives regular offers and updates via SMS. Room33 offers three kind of services at this time: **m-info**, an information service, **m-sweepstake**, a competition marketing tool, and **m-poll** for voting via SMS in game shows. Location-based services will be offered soon. According to Huw Hampson-Jones, CEO of Room33, Europe is at

least 2 years ahead of the US when it comes to mobile marketing, especially in targeting young people. In the age group of 15-19 years, the mobile penetration is 75% in the Nordic countries, slightly behind Japan but way ahead of the US with only 15%.

Room33's view of the mobile Internet of November 2000 claims that "WAP-compliant mobile devices will outnumber interactive digital TVs in 2001 and PCs in 2002. The mobile device will be the most commonly used device to access the Internet by 2003". The reality in 2001 is that neither the WAP nor interactive digital TV has yet found a solid customer base. And 2003 is still 2x7=14 Internet years away!

Impressions of INET 2001

This is called the Technology Summit and gathers those "who design, build and operate the Internet". The opening reception was held in the famous hall of the Stadshus, where the Nobel Laureates have their gala dinner. Many of the Internet architects and policy makers were present including Vint Cerf, the father of the Internet.

According to the ISOC website ([www.isoc.org/inet2001)](www.isoc.org/inet2001)there were approximately 1000 participants attending (they are listed in alphabetical order by first name with NO email) This was my fourth time that I attended an INET conference. This year's the focus was on Mobility and the Internet. A much expected plenary with a keynote presentation on this subject by Kurt Hellström, CEO of Ericsson was replaced by a rather general PowerPoint show by an unknown speaker with the fortunate name of Göran Eriksson. Another plenary on the Interplanetary Internet was interesting but too much sci-fi in my opinion. The conference featured five highly specialized tracks or threads as they called them and a very small exhibition. Unlike previous Inet events there were few occasions for people to mingle with the exception of the opening reception.

Conclusions

This was a very interesting tour and I learned a lot. I share the opinion of many of the participants that there is a great gap between what "technicians invent and what the users want". What the user wants is **uniform/high speed/easy/cheap/secure access** to the Internet to ensure connectivity anywhere. The least important are the "gadget" oriented appliances and applications. In my opinion the wireless LAN technology is a good answer to this question provided that there are sufficient "hotspots" everywhere. Everybody was very impressed by Paybox and its ingenious application and Stockholm as a wonderful city!

Thanks so much, Brenda, for this splendid tour! Michiel Leenaars and Frits Pfeiffer many thanks for the photos. Two video clips of the tour are available at:

www.siliconvalley.ch/tele5000/compaq.mov and www.siliconvalley.ch/tele5000/inet.mov