

argoscorecard

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Prospectives 2002 Trends and Solutions – European Tour

As announced in the first issue of the ArgoScoreCard, Telesystem-Argo held its first edition of the Argo Road Show this past fall. During the week of November 12th, nine of our portfolio companies met with four different carriers based in Amsterdam, Paris, Italy and the Czech Republic.

Based on a priority list of hot topics identified by each carrier, four working sessions were offered per day to a select audience of managers, ranging from product managers to CTOs. Among the main topics discussed, location-based services and mobile marketing/entertainment generated lots of attention. SMS, unified messaging, voice access and

corporate services also attracted a great deal of interest, with a focus on market potential and case studies analysis as well as new revenue models for wireless operators.

In total, almost 100 participants attended the event. Given the success of this first edition, we will certainly propose the same formula to our Asian and North American partners sometime next year.

See you in 2002!



Top 10 Issues of Wireless CEOs

Provided by

- In Japan, the 3G service, FOMA, has been launched to very mixed reviews. Problems with terminals, battery life and current pricing received negative comments in the European press while, the generally positive results were, unfortunately, overlooked. The big question that remains unanswered is when FOMA and 3G in general will be mature enough for a mass-market launch.
- Network sharing between 3G operators is now accepted by most regulators. As operators begins the implementation process, it is becoming clear that the 3GPP standard did not take this scenario into account. As a result, there are several technical problems to solve before a seamless service can be offered.
- With Cingular Wireless's recent decision to follow AT&T and evolve with GSM/GPRS/EDGE, the availability of EDGE-capable handsets and infrastructure seems guaranteed. There is, however, no strong reason to believe in EDGE's widespread success, but it may be a very suitable option for some GSM operators, and a case-by-case analysis is the only way to validate the benefits.
- Terminal manufacturers have recently "launched" innovative and very promising GPRS terminals with fantastic new features, including camera and thermometer. These launches will unfortunately not help GPRS Christmas sales, at least not this year. However, next Christmas, we might have live pictures and temperature readings of the Christmas turkey!
- Recent GPRS terminal sales figures are very promising for terminal vendors with large volumes already sold before Christmas. For operators, the sad news is that GPRS usage is not taking off with the same speed. Free GPRS for a "trial period" may be a short-term solution to increase usage but the long-term solution for operators is still to combine services with attractive pricing and develop viable revenue-sharing models with content providers.
- Various forms of Messaging (MMS) are now repeatedly cited as the service that will make GPRS and 3G business prosper. Due to the numerous players involved in messaging's evolution, there is now very good reason to look behind the slogans and buzzwords to clearly evaluate partners and the revenue potential of the various messaging services.
- Major media companies are still hesitant to enter the wireless world. They generally see wireless as an additional channel to distribute their content, but see charging for this content as a prerequisite as well as the ability to reach their full customer base, across competing operators. To achieve this, operators need to begin developing revenue-sharing models and easy interfaces between networks.
- Nokia received a lot of attention over the announcement of its global wireless standards alliance with Ericsson, AWS, NTT DoCoMo et al. The announcement of global wireless initiatives has become a regular affair and the reaction from the industry press has been mixed. Although positive in general, managers of wireless companies must carefully evaluate the potential of the initiative prior to deciding whether to jump on board or not. Delivery of promises is more crucial than ever.
- The debate on "Public WLAN vs 3G" continues and some still claim that the two are competitors. The debate may continue but GSM and 3G operators are taking actions to benefit from their current co-existence. VoiceStream's recent buyout of the MobileStar network and the continued investment in Public WLAN by European operators such as Telia HomeRun are exciting examples. (See case study on Page 4)
- The success of 3G in the GSM world, is dependent on the availability of dual mode GSM/WCDMA handsets. Promises on handset availability dates vary from late 2002 to early 2004. For business planning and network rollout decisions, an understanding of the factors determining 3G-handset availability is vital.

Northstream™

New Year Wishes

Calling for a Bright Future...

What a difference a year can make!

It has been less than a year since the reversal of fortune in the global economy, led primarily by the telecom and high-tech sectors. It has been only four months since the dramatic events of September 11th in New York and Washington, D.C., and only a few weeks since we started seeing some early signs of a financial recovery.

As we approach the New Year, we have reason to be optimistic, because the world will continue to evolve and people will continue to endeavor to improve their lives. This evolution will increase the need for enhanced mobile communications and so we continue to see a very bright future for venture capital investing in our special area of expertise – mobile communications.

We at Argo will continue to support the needs of our carrier-partners and identify the best market opportunities for them. It is up to us to make it happen and help create a bright future once again.

May the New Year bring peace and hope for you and your loved ones.

HH Haight
President and CEO
Telesystem-Argo Global Capital



VOLUBILL

www.volubill.com

Argnor invests in

Icelandic Maskina

www.maskina.com

and provides both funding and a director for the company's Board. Maskina's products enable end-user generated mobile services, empowering mobile subscribers to create peer-to-peer distributed simple but valuable mobile services.

new investments

NewsFlash

Hotsip has completed its operator trials of Active Presence™ Broadband, a combined VoIP, presence, instant messaging and network gaming platform built on an IP-based multimedia architecture. Active Presence integrates with both traditional telephony and wireless networks.

Following the launch of Windows XP and Windows Messenger, the global carrier market is turning to **Hotsip** as its main Mobile SIP solutions provider.

United International Pictures (UIP) selects **12snap** to promote the box office hit American Pie 2 using a wide-spread short messaging system (SMS) campaign.

OnMobile Systems Inc. announces that its multi-modal platform MMP 2500 will be the first in the world to be launched commercially by Orange India.

Alice Systems launches *Alice Connecto*, the world's first software client to facilitate the connection of laptops and PDA's to wireless networks. Tested by NTT DoCoMo in Japan, Alice Connecto has proven itself on the world's first 3G network.



LGC Wireless received \$19.3 million in Venture Capital funding and expects to raise another 10.7 million, when they will close the round. The funding will be used for expansion and operational costs, and will help launch the new distributed wireless product line.



Webraska signs a strategic agreement with Mobiminds, Brazil's leading online mapping provider, and gains access to the South American market.

Webraska has just supplied Orange UK with upgrades to its existing multimedia location-based services.

Ericsson chooses Webraska as its geospatial and wireless navigation technology provider to develop location-based services around the world. Ericsson will integrate, market, and support Webraska's Wireless Navigation Platform.

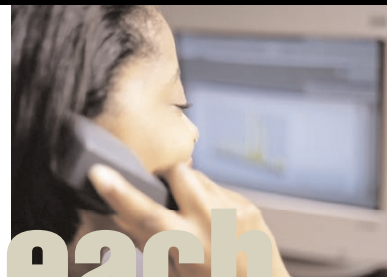
WatchMark and Motorola join forces to help Verizon Wireless provide better customer service.

WatchMark has combined its service assurance software with Motorola's Application Programming Interface (API), enabling Verizon Wireless to view information on network performance and service quality before its customer do. By teaming up with WatchMark and Motorola, Verizon will significantly enhance its customer service and network management capabilities.

UPDATE on Portfolio Companies

Clustra

Clustra Systems has created the first complete, always-on database appliance by combining the Clustra Database and the multiserver RLX System 324. The breakthrough Clustra DataCenter RLX appliance bundle makes five-9s availability (i.e., 99.999 guaranteed uptime reliability) affordable and simple for almost any application. Deployed at any location without needing any on-site DBA support, the system is pre-installed, configured, and ready to run in under one hour. The Clustra DataCenter RLX is available now but for a limited time only.



uReach

uReach Technologies and **Verizon** are offering a Unified Communications service that will link your voice mail, e-mail, faxes and even your filing through a virtual communications hub. A trial of this service was planned for later this year but was moved up due to the September 11th tragedy in New York. This Unified Communications service will be provided free of charge for the first month to displaced NYC customers, along with 60 minutes of in/outbound calling from their toll-free number at no extra charge.

Cambridge Positioning Systems

Cambridge Positioning Systems, the location experts, announced today that the company has developed its E-OTD technology for third-generation (3G) networks, and is demonstrating good results for laboratory trials. The advent of 3G is expected to herald a world of mobile multimedia, with the universal introduction of location-based services and other value added broadband services. The CPS technology, called Cursor™ 3G, is the simplest high-accuracy location technology available for 3G, and it promises an accuracy of 10-20 m, comparable with satellite-based GPS.

Norwood Systems

Norwood Systems partners with Nuance to integrate its EnterpriseMobility software suite with Nuance's 7.0 voice recognition software. EnterpriseMobility customers will now be able to make calls with a simple voice request using a Bluetooth headset integrated with a PBX infrastructure. Combining Nuance 7.0 and EnterpriseMobility demonstrates that speech recognition can now be used to increase mobility and enhance communication both in and out of the office.



TELESENSKSCL

TelesensKSCL client Omnitel updates to the latest version of Jupiter, TelesensKSCL's customer care and billing system. The upgrade extends Omnitel's license with TelesensKSCL to half a million subscribers.



Webraska

Webraska and **Airflash** have merged to create a global leader in location-based services (LBS), applications and application development solutions for telecommunications and automotive customers. With its headquarters in Maisons-Laffitte, France and Saratoga, CA, USA, the combined company serves over 80 million mobile phone customers and 12 carriers on four continents, and has partnerships with leading technology providers including Ericsson, IBM, Nortel, Oracle, Borg and SignalSoft.



Digital BRIDGES

Digital Bridges and **Purple Software** have signed a unique agreement in the wireless industry that will drive the future of mobile gaming. Purple Software now co-publishes Digital Bridges' classic collection of games, ensuring Wireless games offers the definitive set of classic game titles for wireless devices. Wireless entertainment now generates approximately 70% of Wireless-Internet industry revenues in the European and Asian markets.



REALVision Technology Limited partners with StarHub, an info-communications provider, to promote wireless construction project management solutions in Singapore. The applications will be accessed through StarHub's GPRS and SMS services using mobile handheld devices. REALVision will provide the wireless enterprise solutions including the application, customization and documentation. StarHub will market the wireless construction solutions to construction and property management companies in Singapore.



WLAN An Opportunity, Not a Threat

THE DISCUSSIONS AROUND HIGH 3G LICENSE FEES, POSSIBLE TECHNOLOGICAL AND COMMERCIAL THREATS BY COMPETING TECHNOLOGIES, AND THE INEVITABLE DELAYS WITH COMMERCIAL 3G SERVICES HAVE ATTRACTED A LOT OF ATTENTION DURING THE LAST YEAR.

MANY OPERATORS, AS WELL AS INVESTORS AND ANALYSTS, SEEM TO THINK THAT WLAN IS A THREAT TO 3G OPERATORS. AS A RESULT, MANY OF THE OPPORTUNITIES ENABLED BY THE TECHNOLOGY HAVE BEEN IGNORED, WHILE MORE AGILE PLAYERS TAKE ADVANTAGE OF THEM. IF OPERATORS DO NOT ACT PROACTIVELY NOW, IT MAY WELL BE THAT THE THREAT WILL BECOME A REALITY.

3G + WLAN = A Stronger 3G Business Case

Northstream believes that although WLAN is an excellent solution for office and home environments and certain hotspot applications, the business model for stand-alone wide-area service remains very questionable today. Several issues still need to be resolved such as non-standardized security, billing solutions limiting true roaming capabilities, unlicensed spectrum usage and concerns about power consumption. In addition, the costs of building and running a wide-area WLAN network have often been underestimated by, for example, ignoring the costs of capacity both in radio access and the backbone networks as well as related operating expenses.

Although we do not believe in public WLAN services as a replacement for 3G, we do believe that deploying WLAN together with 3G, backed by a carefully implemented strategy, would actually strengthen the 3G business case, rather than act as a threat. In fact, even if it can be argued that public WLAN networks could steal revenues from 3G, we actually believe that higher data speeds and different terminals, usage models and applications offered by WLAN will satisfy a different demand for wireless data. WLAN will create its own traffic, raising the overall demand for wireless data connectivity, which will benefit 3G as well; that is, if it is implemented intelligently and proactively by the 3G operators themselves.

The 3G and GPRS operators need a new or enhanced IP backbone and billing system to start offering their services. These components and the inbuilt roaming capabilities are the same building blocks needed to create a public WLAN service. As a result, 3G and GPRS operators are probably the best suited to offer public WLAN services, preferably combined with the wide-area service provided by 3G and GPRS. In light of this, it is easy to understand VoiceStream's interest in the MobileStar WLAN network.

The incumbent operators must decide to either act today or let others steal their business. The good news is that the incumbents are in a much better position to offer these services than any newcomers due to the synergies with their current communications services, existing customer base, know-how and infrastructure. This is supported by the fact that many of the new opportunities only make business sense when combined with other services, not as stand-alone offerings.

So rather than trying to push 3G to applications where WLAN is clearly a superior technology, operators should proactively combine the strengths of the different technologies to provide a total communications offering. It is not just that cannibalizing your own business is a far better option than letting someone else do it. Even more significantly, it is important to proactively take advantage of new technologies and grow your business by creating new and attractive service offerings while tying the customers to you, thus reducing churn. By starting now and merging the overall service strategy, operators could also substantially lower their 3G-related risks.

About Northstream:

Northstream provides operators, manufacturers and other players with independent and unbiased advice on opportunities presented by GPRS and 3G. In addition, Northstream offers recommendations on key technical and commercial issues in mobile data services as well as advises industry players on their strategic position and value proposition.

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Upcoming Events

Mobile Presence and Instant Messaging Forum

Evolving Messaging Revenues Within Existing Networks
Amsterdam, Netherlands
January 23-24, 2002

Mobile Marketing and Advertising

2nd Official Conference of the Wireless Advertising Association
London, UK
January 29-31, 2002

3 GSM World Congress 2002

The One Event not to Miss!
Cannes, France
February 19-22, 2002

Argo Annual Meeting

Palm Springs, California
April 17-19, 2002
(Details to follow)



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