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News from 2004 Annual Meeting: Fine-Tuning Our Focus

At the 2004 Annual Meeting in Boston last April, we pointed out that, given the vintages of our funds, we would be focusing on generating liquidity events for our portfolio companies — about one third of these companies have had inquiries from possible buyers. As the M&A market shows encouraging signs of renewed activity, consolidation is increasing. For example, OSS companies, a major component of our portfolio, are very active buyers and sellers.

Among our own companies, a dozen have concluded commercial interactions with each other, enhancing the value of these businesses.

In the near future, the new investments we will make will generally be in companies with the following characteristics:

- Low R&D risk
- Strong management teams
- Significant market potential
- Revenue generating or very close
- Profitability expected in a few quarters
- Amount of money raised sufficient to carry company for at least 24 months
- A knowledgeable investment syndicate with lots of dry powder for follow-ons

In addition, we will reserve adequate funds for follow-ons and our ownership position will exceed 10%, enabling us to have a meaningful impact on the direction of the company.

Portfolio Company Profile

World Wide Packets is delivering the only commercially deployed, end-to-end, active Ethernet service delivery access network solution on the market. The company has built a significant beachhead within the municipality and utility markets while developing a growing customer base in the Multiple Service Operator (MSO), Competitive Local Exchange Carrier (CLEC), Incumbent Local Exchange Carrier (ILEC) and Greenfield developer markets.

As consumer broadband requirements continue to grow and communities realize that high-bandwidth capabilities can be an economic development tool, the broadband race is heating up. Service providers and MSOs have begun to compete for the “triple play”, rolling out voice, video and data bundles while some smaller communities, frequently left behind in this race by the incumbents, have begun to roll out their own broadband services.

World Wide Packets' LightningEdge® solution enables the delivery of simultaneous telephony, business and entertainment video, broadband data and Internet access services, to any combination of business and residential subscribers, using Ethernet over fiber and copper media. Customers choose LightningEdge because it combines the most important characteristics of circuit-switched solutions — control, predictability and guaranteed service quality for every application — with the unmatched cost performance and scalability of Ethernet. This unique combination gives customers the flexibility to create and provide a full range of services over a common delivery infrastructure.

The adaptable design of the LightningEdge access solution offers customers the lowest cost-per-bit infrastructure on the market as well as the ability to scale capital investments in line with subscriber acquisition. In addition, LightningEdge enables the delivery of multiple service offerings over a sin-



 **World Wide Packets®**
ACCESS BRILLIANCE

Dave Curry
President & CEO

gle network, increasing revenue generation and accelerating the payback period on customers' infrastructure investments.

World Wide Packets' stellar leadership consists of industry experts with significant experience in telecommunications as well as deep domain expertise in Ethernet technologies.

Recent customer announcements include the City of Provo, the largest municipal deployment providing broadband services to over 33,000 residential and commercial premises; Great Wall Broadband Network Service Co. Ltd. (GWBN) in China, one of the country's fastest growing broadband service providers; and ntl and TeleWest, both UK-based MSOs offering premier business services over fiber.

Investors include Argo Global Capital, Azure Capital Partners, Corning Innovation Ventures, Entrepia Ventures, Madrona Venture Group LLC, Millennium Technology Ventures, Northwest Venture Associates (NWVA) and Rock Creek Capital.

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UPDATE on Portfolio Companies

KABIRA TECHNOLOGIES, INC.

Kabira Technologies Inc., the leader in high-speed Switching Software and Service Gateways for real-time telecommunications services networks and applications, announced that Bouygues Telecom, France's third largest mobile operator with more than 6.5 million subscribers, has successfully deployed the Kabira Technologies provisioning solution to ensure the activation of all new innovative services. This project was implemented by Accenture, systems integrator to Bouygues Telecom. By 2003, the new system had already enabled the operator to successfully conform to the new regulations linked to subscribers' number portability.



CAMBRIDGE POSITIONING SYSTEMS, LTD.

Cambridge Positioning Systems, Ltd. (CPS) is the high-accuracy location enabler for the wireless world. Location services specialist GCT has turned to CPS' Matrix technology to power a new generation of high-accuracy devices and applications. The two companies have launched a joint development program that will see CPS' software-only Matrix solution integrated into a range of products suitable for vehicle, personal, asset and even pet tracking. This service and devices, marketed under GCT's Tekel brand, are designed to fit into a pocket or palm of the hand and will deliver sub-100m accuracy across all environments and rapid location fix speeds.

EMPOWER INTERACTIVE GROUP, LTD.

Empower Interactive Group, Ltd., a trusted supplier of mobile data services infrastructure products for mobile operators, has secured a deal with leading Indonesian mobile network operator, Telkomsel. Empower will provide Telkomsel with a high-capacity Message Delivery Platform (MDP), designed to support high volumes of messaging traffic generated by mobile applications, such as marketing campaigns and content delivery.

ONMOBILE SYSTEMS, INC.

ESPN Star Sports, Asia's leading sports broadcaster, joined with OnMobile Systems to launch a first-of-its-kind interactive television sports programming for mobile subscribers across India. Under the initiative, mobile subscribers of Airtel, Orange/Hutch, Tata Indicom and Idea Cellular called a unique number and expressed their views on the IndianOil Asia Cup this past summer. A team of ESPN STAR Sports' officials analyzed viewers' opinions and comments in real time and invited selected callers to interact with the commentators during live coverage of the IndianOil Asia Cup. OnMobile provided the technology for the interactive programming, which was launched for the duration of the cricket championship.

UREACH TECHNOLOGIES, INC.

uReach Technologies, Inc., a leader in enhanced communication products and services, announced it acquired Priority Call Management, Inc. in a stock purchase from Atos Origin. Priority Call Management is one of the world's top suppliers of enhanced calling and messaging solutions.

NORWOOD SYSTEMS, LTD.

Norwood Systems, Ltd., a leading wireless technology company, has joined forces with Alcatel and Motorola to launch its EnterpriseMobility® platform for carrier-grade customers and enterprise resellers worldwide. EnterpriseMobility enables a dual-mode handset to act as both a mobile and wireless office extension, switching between each function automatically depending on the location of the user.

SYLANTRO SYSTEMS CORPORATION

Sylantro Systems Corporation announced that Elitel, one of Italy's largest CLECs, will deploy Europe's first hosted communications offering that addresses both residential and business markets with advanced Voice-over-Internet Protocol (VoIP) services via a single proven telco-grade platform. Sylantro recently announced a new consumer broadband voice solution that allows service providers like Elitel to quickly enter the skyrocketing consumer market for VoIP services while simultaneously serving the business IP Centrex market.

NUERA COMMUNICATIONS, INC.

Nuera Communications, Inc. has been awarded a multiyear contract by Cox Communications, Inc., one of North America's largest multi-service broadband communications companies, to provide media gateways for Cox's nationwide VoIP service deployments. Broadband network operators such as cable multiple system operators (MSOs) are aggressively offering telephone services to stimulate growth, increase profits and reduce customer churn. VoIP is a key enabling technology in the PacketCable™ standards, which allow cable operators to offer telephone services throughout their networks.

WATCHMARK-COMNITEL

Argogroup, Casabyte, NetTest and WatchMark-Comnitel, the four members of the new Service Management Alliance (SMA), showcased their integrated OSS solutions for the first time in Europe at TeleManagement World in Nice last May. The SMA helps European service providers reach their strategic business goals for efficient service quality management. The members of the SMA are working together to ensure that their products are fully interoperable, enabling operators around the world to manage their networks and services much more easily.

SURFKITCHEN

Argo Global Capital has invested US\$4 million in SurfKitchen, a leading provider of Mobile Dynamic User Experience (DUE) software.

www.surfkitchen.com

**new
investments**

AMPERION CAYMAN

Argo Global Capital has invested US\$215,000 in Amperion Cayman, a provider of network access equipment used to provide broadband applications over powerlines.

www.amperion.com

NewsFlash

DIGITAL ROUTE

Digital Route, the leading next-generation mediation software vendor, announced the signature of a contract with Netia, the top alternative fixed-line telecommunications operator in Poland, for licensing, implementation and support of Digital Route's convergent mediation platform — MediationZone™. The system will be used to enable flexible charging and billing of Netia's voice and data services.

GENERAL WIRELESS

General Wireless, a provider of user-friendly, two-way eSMS solutions to mobile operators for corporate and personal use, announced an agreement with Telia, Sweden's largest mobile operator. Telia corporate subscribers can now send SMS messages from their MS-Outlook and from any Windows-based PC. This new service is based on General Wireless' eSMS Executive solution.

HOTSIP AB

Hotsip AB, a global leader in multimedia applications for SIP infrastructure, announced that it has entered into an original equipment manufacturer (OEM) agreement with Ericsson, the world's leading mobile and fixed infrastructure supplier. Hotsip will integrate its SIP-based Presence Server, the Hotsip® Multimedia Communication Engine (M2CETM), and its Active Contacts™ PC client with Ericsson's IMS-based (IP Multimedia Subsystem) softswitch Engine Multimedia.

CAMBRIDGE POSITIONING SYSTEMS, LTD.

Cambridge Positioning Systems, Ltd. and Xion announced plans to collaborate on the development of a new wristwatch-based child safety communicator and locator — the first of its kind to deliver high-accuracy location in all environments including indoors. Xion, a leading personal communications and security solutions provider, will integrate CPS' Matrix location software into its Sentinel Watch, a GSM-based device that allows parents to securely track, locate and communicate with their children in an event of an emergency or on an ongoing basis.

DIGITAL BRIDGES, LTD.

Digital Bridges, Ltd., a world leader in the creation and distribution of mobile entertainment solutions, announced an agreement with 8bit Games Ltd. and Sci Games Ltd. to publish the mobile edition of *Galleon*. dbigames will publish and distribute the mobile (J2ME and BREW downloadable games) version of the title in Europe and North America across its various distribution channels, including wireless network operators, retail, interactive television and Web portals.

NARAD NETWORKS, INC.

Narad Networks, Inc., a provider of business broadband access solutions using MSOs' existing cable networks, announced that it has completed its CEO search and has recruited James D. Norrod. Mr. Norrod brings 24 years of industry experience, most recently with Telebit Corporation, a public company that manufactured and distributed high-end data communication equipment to enterprise markets.

NORWOOD SYSTEMS, LTD.

Norwood Systems, Ltd. and Alcatel, a provider of communications solutions to telecommunication carriers, Internet service providers and enterprises, announced that they have signed a global reseller agreement. Alcatel will resell Norwood System's EnterpriseMobility platform to telecom operators worldwide as part of Alcatel's fixed-mobile convergence solution.

NUERA COMMUNICATIONS, INC.

WorldCALL Broadband Ltd., one of the largest cable operators in Pakistan and part of the larger WorldCALL conglomerate, has deployed the Nuera Communications, Inc. ORCA® RDT-8v VoIP access gateway and the Siemens SURPASS hiE 9200 Softswitch to offer telephone services. Nuera's RDT-8v broadband access gateway enables WorldCALL to leverage the Class 5 circuit-switch capabilities of the SURPASS hiE 9200 to offer carrier-grade, highly reliable voice services over an IP network.

ONMOBILE SYSTEMS, INC.

OnMobile Systems, Inc. announced the commercial launch of its Automatic Speech Recognizer (ASR) for Indian languages. This is the first time that a complete and comprehensive language model has been developed for the Indian market. This landmark development ushers in the capability for Indian consumers to interact with automated services with simple voice commands in their native languages. The new model currently supports major Indian languages like Hindi, Marathi, Gujarathi, Bengali and Punjabi. Support for Tamil, Telegu, Kannada and Malayalam will be available shortly.

SENSESTREAM, LTD.

SenseStream, Ltd. has successfully installed and implemented its DynaFit™ Server at leading Macau mobile network operator, SmarTone Macau. The DynaFit Server powers SmarTone Macau's Multimedia Messaging Service Centre (MMSC) and allows subscribers to send and receive MMS in a What-You-See-Is-What-I-Send manner regardless of their MMS device types, enhancing the end-user mobile experience.

SYLANTRO SYSTEMS CORPORATION

Sylantro Systems Corporation announced the unveiling of the industry's first open standards-based integration of telecommunications services with Yahoo! Messenger 6.0 at Supercomm 2004. Yahoo! Messenger is one of the most widely used instant messaging services in the world with over 40 million users. With Sylantro's developer's kit and the Yahoo! open presence interface, service providers can quickly develop and deploy integrated hosted voice services with Yahoo! Messenger or other best-of-breed instant messaging clients for residential and business users.

WEBRASKA MOBILE TECHNOLOGIES SA

Webraska Mobile Technologies SA, the pioneering provider of GPS, voice-enabled wireless navigation applications and location-based services (LBS) solutions, and Sensis, the leading Australian directory advertising and information provider, announced the successful integration of Webraska's SmartZone™ Geospatial Platform to map-enable their online presence, including the following sites: Whereis www.whereis.com.au, White Pages www.whitepages.com.au, Yellow Pages www.yellowpages.com.au and CitySearch www.citysearch.com.au.

WORLD WIDE PACKETS

World Wide Packets, the leading provider of Ethernet Access networking solutions, announced that its LightningEdge suite has begun wide-scale deployment throughout the city of Provo, Utah for one of the nation's largest municipal fiber-optic service delivery networks. Recently recognized by Forbes Magazine as one of the top ten "Best Places for Business and Careers", the city will offer broadband services to more than 33,000 residential and commercial premises, all powered by World Wide Packets.

World Wide Packets also announced that Chad Whalen has joined the company as Senior Vice President of Business Development. Mr. Whalen will oversee the company's relationships with large carriers and MSOs while contributing to partner initiatives with global equipment vendors. World Wide Packets also announced that Robert Picker has expanded his role to oversee global sales and customer support as Senior Vice President of Sales and Customer Support.

Smartphones: Too Smart, Too Soon... or Emerging Business Opportunity?

SMARTPHONES, WIRELESS DEVICES WITH AN OPERATING SYSTEM THAT SUPPORTS APPLICATION DEVELOPMENT, DOWNLOAD AND EXECUTION BY THIRD PARTIES, STILL CONSTITUTE A SMALL PART OF THE GLOBAL HANDSET MARKET. HOWEVER, FOR MOBILE OPERATORS, THESE DEVICES REPRESENT A NEW OPPORTUNITY TO GROW MOBILE DATA REVENUES.

WITH SMARTPHONES, THE HANDSET MARKET HAS BECOME EVEN MORE FRAGMENTED. SMARTPHONES COME IN DIFFERENT FORMS, FROM PHONES TO PDAS, WITH OR WITHOUT KEYBOARDS. SMARTPHONES SUCH AS THE NOKIA 6600 MAY APPEAR COMPATIBLE TO FEATURE PHONES SUCH AS THE SONYERICSSON T630, IN PARTICULAR WHEN ONLY MARKETED AS A MULTIMEDIA PHONE. STILL, THE SMARTPHONE IS A MUCH MORE FLEXIBLE HANDSET FOR BOTH THE USER AND THE OPERATOR.

Service and application requirements are pushing operators towards smartphones. While consumer demand is weak, the implementation of mobile data services in the enterprise segment is increasingly relying on smartphone capabilities. In terms of helping increase operator revenues and customer loyalty, smartphones offer three key benefits:

- This powerful high-end phone with its built-in features supports mobile multimedia applications and services.
- The user interface can be customized to create an operator-branded "look & feel."
- Its operating system is open for third-party application development, download and execution.

However, these benefits are also associated with commercial risks and threats to the operator's customer ownership.

First, some smartphones are hard to distinguish from high-end feature phones with the exception of the open OS-functionality. The commercial value of the open operating system resides in the phone's perceived functionality, that is, the range and variety of available applications. When this perceived functionality is low, operators may have difficulty marketing such smartphones compared to the concrete functionality of high-end feature phones.

Second, the phone's user interface can also be customized by handset vendors and other third parties, including the end users themselves, thus removing the operator "look & feel."

Third, the costs of driving an application business — supporting application development, provisioning, download and execution by users — may be too high for many operators. This will depend on the number of different terminal operating systems present in the operator's terminal portfolio.

Today's operators can readily manage the first two risks. Several operators are, for example, using subsidies to position smartphones in the terminal portfolio. Others are promoting smartphones as high-end phones in their mobile content offerings.

Not all vendors are willing to customize handsets to meet operator demands. As a result, a market for third-party customization products implemented on top of terminal operating systems has materialized. To facilitate service use, operators are putting significant effort into special user interface clients in addition to the resident user interface. This improves discovery of and access to both applications and services, increases revenues, and adds an operator

"look & feel" to the user experience. With increasing handset vendor flexibility, operators may yet have their customization requests fulfilled.

The third risk, however, has to date been driven by factors outside the operator's domain. The available smartphone operating systems, with Symbian and Windows Mobile dominating the scene, all have their pros and cons. However, from a market perspective, fragmentation of operating systems and terminal platforms has worked against the growth of a mobile application market.

Lately, a group of leading operators have joined forces in the OMTF (Open Mobile Terminal Platform) initiative "to create an open ecosystem for advanced mobile platforms that support enhanced subscriber experiences, while tailored to be able to meet the requirements of each operator." More specifically, the operators will try to specify both common user interface requirements for handsets as well as define recommendations for the application interfaces across different technologies.

Clearly, this is an ambitious and serious attempt to gain operator control over user interfaces and application portability, both of which are critical to ensuring operators remain in the upper end of the mobile content value chain. Still, it is a task that will take considerable effort and time to achieve.

As the market share of smartphones increases, Northstream encourages operators to optimize the current business opportunity by:

- Focusing on service discovery and access.
- Promoting service consumption and application provisioning/download.

In the end, operators stand to benefit from the considerable customization capabilities of handset vendors and the growing ambitions of third parties. Operators themselves must, however, strive to establish win-win revenue-sharing schemes and cost-effective systems and procedures for application provisioning and systems. Only then will smartphones secure their role as the powerful ARPU-driver positioned between feature phones and laptops.

Johan Ragnevad
Senior Consultant, Northstream

About Northstream
Northstream provides operators, manufacturers and other players with independent and unbiased advice on opportunities presented by GPRS, 3G and Wireless including WLAN. 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.
www.northstream.se

Upcoming Events

Mobile Infratech

October 20-21, 2004
London, UK

CTIA Wireless I.T. & Entertainment 2004

October 25-27, 2004
San Francisco, CA, USA

3GSM World Congress 2005

February 14-17, 2005
Cannes, France



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