



SigmaTel components in Rio MP3 player

TeleSoft

THIRD
QUARTER
2003

NEWS

Components Systems Software Services

A WORD FROM THE FIRM

We are delighted to announce that SigmaTel completed its IPO (NASDAQ: SGTL), which raised \$150 million, and was one of the largest tech IPOs in a couple of years. In addition, Provide Commerce has filed an S-1 for its IPO with the SEC. Both companies have two to four quarters of profitability, with last twelve months revenues in excess of \$50 million and attractive growth prospects. Aarohi also announced design wins and a significant investment from McData.

Overall after a slow two years, we are seeing some signs of stability (not an uptick). Last quarter, two portfolio companies achieved quarterly run rates of \$8–10+ million, and two other portfolio companies beat and raised their annual targets. Another measure of stabilization can be inferred from a

couple of companies who are doing well and got lowball unattractive acquisition inquiries.

TeleSoft is also pleased to announce a corporate partnership with T-Ventures, the venture arm of Deutsche Telekom. Dr. Han-Albert Aukes, Chief Innovation Officer, and Dr. Thomas Kuehr, MD will join TeleSoft's Senior Industry and Technology Advisors Network. In addition, Dr. Claas Heise will collocate at TeleSoft and will help introduce appropriate TeleSoft portfolio companies to DT business units. DT has four major lines of business including wireline, wireless, ISP, and one of the largest systems integrator in Germany serving enterprise customers (see table below).

In summary, we continue to temper our optimism with caution, as the technology and venture capital industries continue to rationalize

IN THIS ISSUE

A Word From the Firm	1
From the Front Lines:	
Broadband Access Services	2
Portfolio News	8
Investment Bank Analysts	10
Executive Recruiting	13
Conference Calendar	13

TeleSoft Partners

1450 Fashion Island Blvd. #610
San Mateo, CA 94404
650-358-2500
www.telesoftvc.com

Copyright 2003 TeleSoft Partners. TeleSoft News is a publication of TeleSoft Partners.

over the next couple of years. While we are not out of the woods, the environment is not as dark as it has been!

— Arjun Gupta

DEUTSCHE TELECOM AT A GLANCE

	T-Mobile	T-Com	T-Online	T-Systems
	One of the world's leading mobile providers with affiliated companies in eight countries	One of the largest fixed network operators in Europe	The leading ISP in Germany, one of the major players in Europe, and has launched services in the U.S.	Provides systems integration to the largest German national and international enterprise customers
Revenue	€19.7BB	€30.2BB	€1.8BB	€11.3BB
Employees	38,943	152,800	2,765	43,482
Subscribers	81.7MM	57.5MM	12.2MM	offices in greater than 20 countries

From the Front Lines

Broadband Access Services

It is not as poetic as a "chicken in every pot," but the promise of "broadband access to every home and business" is more likely to happen than most campaign promises. Around the world the number of broadband subscribers has increased steadily to more than 75 million subscribers, according to research firm RHK (see figure 1). Approximately one-third of worldwide online homes are currently using broadband and 20 percent of all U.S. households (online or not) are broadband subscribers, based on IDC estimates. Both worldwide and U.S. broadband use is projected to approach 50 percent by 2007 (see figure 2).

This steady growth in a key telecom market is welcome news for service providers, which have struggled through the boom and bust industry dynamics of the last three years. Revenue from broadband services worldwide, which reached \$23 billion in 2002, according to IDC, is expected to grow to \$33 billion by the end of 2003 and increase 30 percent per year reaching \$85 billion by 2007. As reported in the *Wall Street Journal*, a recent study from the Brookings Institution asserted that "universal broadband access could add \$300 billion a year to the U.S. economy. Conversely, forgoing a broadband rollout may hinder economic growth and worsen an already bleak picture for telecommunications and high-tech industries." This issue of

From the Front Lines provides a brief update on a market that was promised in the dawn of the dot.com era, and actually seems to be arriving, slowly but surely.

Revenue from broadband services worldwide, which reached \$23 billion in 2002, is expected to grow to \$33 billion by the end of 2003 and increase 30 percent per year reaching \$85 billion by 2007.

Most of the world—Western Europe, Latin America, China, and Southeast Asia—is still in the early deployment stages of broadband access. However, in North America,

Japan, and Scandinavia, broadband access has moved into the expansion phase in which higher availability and lower pricing differentials over dial-up are shifting the subscriber base from early-adopters to more mainstream users. Expansion phase subscribers are using broadband as an extension of working and social (music, games, commerce) environments. With early adopters, there was mainly a need for higher speed. More mainstream users are drawn toward broadband's always-on feature and ability to allow phone call and online access at

CONTINUED ON PAGE 3

FIGURE 1 BROADBAND SUBSCRIBERS (IN MILLIONS)

DSL	4Q02	1Q03	2Q03
North America	8.1	9.4	10.1
EMEA	9.6	11.9	13.3
Asia Pacific	17.3	20.1	22.8
CALA	0.8	1.0	1.1
	35.8	42.4	47.3
CABLE	4Q02	1Q03	2Q03
North America	13.2	14.4	15.6
EMEA	3.8	4.2	4.4
Asia Pacific	6.8	7.2	7.5
CALA	0.2	0.2	0.5
	24.0	26.0	28.0
TOTALS	4Q02	1Q03	2Q03
North America	21.3	23.8	25.7
EMEA	13.4	16.1	17.7
Asia Pacific	24.1	27.3	30.3
CALA	1.0	1.2	1.6
	59.8	68.4	75.3

SOURCE: RHK

From the Front Lines

Broadband Access Services

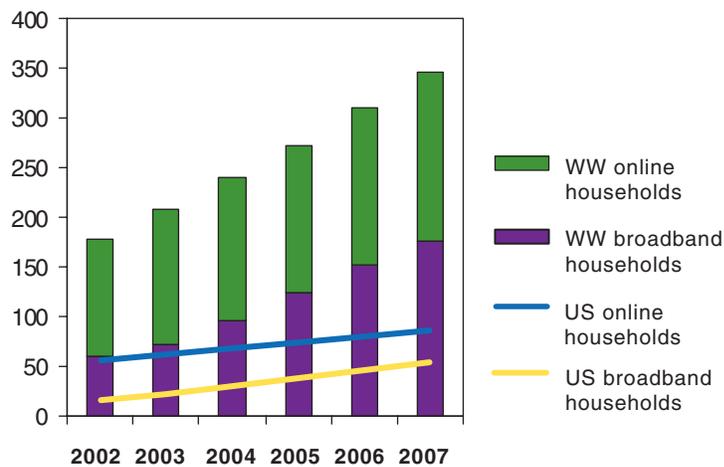
the same time. They are interested as long as broadband access costs are within spending budgets. To reach ubiquitous access, which only South Korea is approaching, broadband needs to offer more than high-speed Internet access. It will take the evolution of compelling content and services.

South Korea, the land of morning calm and broadband access

According to a report by the ITU, South Korea holds a large lead over the rest of the world in the percentage of people who have high-speed Internet connections. Between 60 and 70 percent of all households in South Korea have a broadband connection, which has become an essential part of everyday life for email, games, chat, and music. At a rate of 21.3 broadband subscribers per 100 inhabitants, South Korea compares to 6.9 percent in the United States, which ranked 11th in the ITU's survey.

Why is South Korea so far ahead? Look at government focus and lower prices through competition. An aggressive government initiative, known as the Korea Information Infrastructure (KII), set out a plan for carriers to offer universal Internet access with minimum speeds of 1 Mbps by 2005, in addition to availability of high-speed services (up to 20 Mbps) to more than 80 percent of Korean households. The country already has spent \$850 mil-

FIGURE 2 BROADBAND INTERNET HOUSEHOLDS (MILLIONS)



SOURCE: IDC

lion on broadband deployment and has vowed to spend an identical amount over the next four years. The South Korean government has taken steps to encourage the use of broadband, such as requiring telephone companies to let competitors use existing lines at low cost. As a result, monthly subscriptions are around \$25, while the average U.S. cost is \$45.

South Korea provides an interesting look at how broadband could or should evolve in other regions. Very high bit rate DSL (VDSL) at 1 Mbps throughput now reaches more than 750,000 subscribers. Korea Telecom (KT) is deploying HomeMedia—a video on demand service over broadband—and is working with third-party content providers on movies, education, games, and music. With the growing number of subscribers, service providers are beginning to approach

capacity and manageability limits of existing infrastructures.

It's down to the wire

There are a number of options available for broadband access (see figure 3). However, digital subscriber line (DSL) and cable are expected to dominate the broadband access market over the next several years. Other technologies—such as WiFi, satellite, or optical networks—have yet to approach the penetration of DSL or cable, and are expected to be near-term complements to these broadband services. Satellite and power line communications (PLC) will extend broadband reach to areas where DSL and cable are not available. WiFi (and potentially PLC) is emerging as an attractive in-building broadband LAN alternative.

Both DSL and cable access have the advantage of working over

CONTINUED ON PAGE 4

From the Front Lines

Broadband Access Services

existing service provider networks, providing multiple services, and having competitive dynamics that have reduced per port costs. Cable access is the leading alternative for bundled services (voice, data, and video). DSL is the leading alternative for Internet access by offering a variety of speeds and nearly self-install deployment. Metro Ethernet access is expected to steal share from DSL in the business market as service providers deploy more cost-effective fiber technology. The dynamics of cable versus DSL are expected to shift in both directions as emerging technologies—such as VDSL and voice-over-packet—enhance

the competitive service offerings of DSL and cable, respectively.

Currently, two broadband alternatives are receiving a lot of attention. Fiber-to-the-Home/Building/Premise (FTTx) and fixed wireless broadband access (WiMax) have had several key industry players cooperate on advancing these next-generation technologies. In May 2003, BellSouth, SBC, and Verizon announced the adoption of a common set of requirements for fiber-based broadband networking technology that must be supported for their joint request for proposal (RFP). In May 2003, several companies (Intel, Proxim, Fujitsu, Nokia, Harris, Ensemble, Crosspan, and

others) launched WiMax, a group formed to certify and promote the developing wireless broadband standard 802.16. Both these initiatives signal the beginning of longer-term broadband access alternatives.

There are several key reasons why the RBOCs are cooperating and moving to implement FTTx. One is lower cost through increased buying power. The combination of standardized components, economies of scale, and more efficient technologies means a reduction in FTTx capital costs. In addition, the RBOCs expect a more favorable regulatory environment for fiber infrastructures that will minimize the future

CONTINUED ON PAGE 5

FIGURE 3 BROADBAND ACCESS OPTIONS

	xDSL	Cable	Wireless	VSAT	FTTx	Power Line
medium	existing copper access lines	existing cable TV infrastructure	2-11 GHz wireless spectrum	12-27 GHz satellite transponders	optical fiber (new fiber deployment usually required)	in-building copper wiring
subscribers in 2006	100 M	80 M	na	3.2 M	na	na
downstream speed / CO switch distance options	13-28 Mbps 4.5K ft. 1.5-8 Mbps 9.5K ft. 1.0 Mbps 12.5K ft. 0.78 Mbps 14.9K ft. 0.42 Mbps 18.0K ft.	1.5-10 Mbps (varies due to shared access bandwidth)	100's of meters-WiFi 802.11a/g 54 Mbps 802.11b 11 Mbps 30 Km-WiMax 802.16 70 Mbps 1,000's of meters-mobile 3G 1.5 Mbps 2.5G 0.1 Mbps	1-11 Mbps	100 Mbps and higher (unlimited for practical access applications)	up to 4.5 Mbps
system vendor examples	Alcatel, Calix , Innovia, Lucent, NEC, Samsung, Siemens, Sumitomo	ADC, Arris, Com21, Cisco, IPI , Juniper, Motorola, Scientific Atlanta, Tellabs, Terayon	Avaya, Cisco/Linksys, D-Link, Mitsubishi, Proxim, Siemens	Alcatel, EMS, Gilat, Hughes, Nera	Alcatel, AllOptic, Calix , IPI , Lucent, NEC, Optical Solutions, Pacion, QuantumBridge, Terawave, Wave7	Ambient, Amperion, Ascom, Main.net
IC and software vendor examples	Analog Devices, Broadcom, Centillium, Conexant, Globespan, Infineon, Ikanos , ST, TI	Broadcom, Conexant, Imedia, Philips, ST, TI, Jungo (software)	Agere, Atheros, Intel, Intersil, RF Micro, TI, Jungo (software)	capitive designs	Alcatel, NEC, NTT, Oki, Sumitomo	Intellion, Phonex Broadband

SOURCE: RHK, IBUYBROADBAND.COM, TELESOFT PARTNERS

From the Front Lines

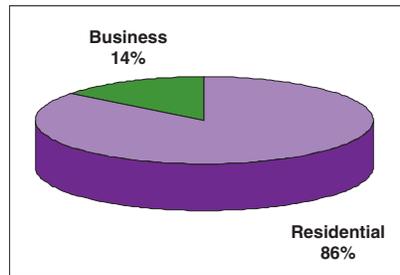
Broadband Access Services

likelihood of mandatory line sharing. Finally, cable operators continue to add telephony to their service offering. As a result, RBOCs are looking for a conduit that will allow them to compete head-to-head with cable in the broadcast, video, and content businesses, thus enabling a "triple-play" service capability.

The challenge for FTTx deployments is that it is an expensive option for voice or data services in areas where video subscriber penetration is low or uncertain. Building the "last mile" of fiber connectivity to an office park or city neighborhood can be highly speculative with an enormous up-front investment required before a carrier can expect to collect any revenue. Nevertheless, the FTTx program is expected to be commercially underway in the 2006 time frame with carriers expected to begin limited deployments sometime during 2004. In the near term, the bulk of RBOC spending is likely to be on laying the fiber itself, as RBOCs move fiber closer to subscribers in anticipation of customer demand for high-bandwidth services in the latter half of the decade.

WiMax (IEEE 802.16 standard) is a broadband solution that will not be available for another year. It provides non-line of sight linear wireless transmission of up to thirty-one miles and will help carriers construct wireless metro networks capable of shared data rates

2003 BROADBAND SUBSCRIBERS



SOURCE: IDC

up to 70 Mbps. It targets T-1-like bandwidth to multiple businesses in a metropolitan corridor and could be used as an extension to DSL or cable modems for last-mile broadband access. In contrast to FTTx, broadband wireless has the potential to reduce the initial investment and risk. Because customer premises equipment is a significant portion of the cost of wireless deployment, deferring that investment until the carrier signs up the customers can be an advantage.

It's not just about bandwidth anymore

Up to now, faster/better Internet access has been the killer application for broadband. Higher bandwidth has turned the Internet into a medium for transacting business (versus private lines and physical mail), collaboration, and social interaction (games, music, meetings, and video). Over the next few years, attractive pricing and compelling content will be key in driving con-

tinued broadband adoption. Many service providers have begun dropping their pricing for residential broadband access in an effort to spur adoption and drive market share gains. Verizon and SBC have recently cut their prices for certain types of broadband packages to as little as \$30 per month. Bundling and tiering are key near-term trends, with service providers striving to lock in customers, reduce churn, and maximize revenue through the introduction of bundled packages and service tiers.

However, the future is not speed, but the development of content and services that take advantage of

CONTENT FEATURES that could drive future broadband subscription rates:

- Home networking
- Streaming audio
- Remote home security video monitoring
- Interactive gaming
- Online photo sharing services
- Video Instant Messaging

speed. All things considered, it is more than likely that the true killer app has yet to emerge that requires a broadband connection. Broadband video and video-on-demand (VOD) services are two applications that have the potential to drive utilization much higher. However, the business case and road map for such services remains unclear for service providers. VOD along with MP3 music downloads

CONTINUED ON PAGE 6

From the Front Lines

Broadband Access Services

require high bandwidth but average consumers are utilizing those applications in a limited fashion today.

So what content features could drive future broadband subscription rates? Home networking, while not exactly a content application, has the potential to become a factor in the adoption of broadband, particularly as the number of multiple-PC households continues to increase. Streaming audio targeted at a specific user group, such as Major League Baseball providing Internet radio access to nearly all baseball games, has potential. Remote home security video monitoring could likewise gain a following among homeowners. Interactive gaming has potential due to the investment of companies such as Microsoft in building broadband capabilities into game consoles such as the Xbox. Video gaming is already a multibillion dollar industry.

Online photo sharing services such as Kodak's Ofoto are gaining in popularity. Video Instant Messaging, which would combine the widely popular existing IM services with the ability to actually see the person that you are messaging, could be added to the above mix of services to create a compelling combination of features to continue broadband's adoption.

However, the adaptation of traditional popular content—music and video—to the broadband Internet faces some challenges. The dominant record labels have all but shut down the peer-to-peer file-swapping industry popularized by Napster. In its place fee-based services such as Roxio's pressplay (Sony/Universal content), MusicNet (Warner, BMG, EMI content), and Apple's iTunes have been rolled out.

The pioneer Internet VOD company, Intertainer, filed a lawsuit in

September 2002 against several major film studios alleging that these content providers conspired to fix prices for and delay the digital distribution of their films and other content so they can eventually monopolize the online VOD market through Movielink, a joint venture of Warner, Sony, Universal, MGM, and Paramount. Intertainer has hence shut down its service to focus on the lawsuit. The point here is that service providers serious about providing content will have to work with (i.e., pay) entertainment conglomerate companies for the right to transmit the programming to subscribers. Industry issues of digital rights management and standards for compression/quality, which are key to the increased availability of content, will be influenced and potentially delayed by different entertainment company strategies.

CONTINUED ON PAGE 7

FIGURE 4 WORLDWIDE BROADBAND SUBSCRIBER & SERVICE REVENUE GROWTH

	SUBSCRIBERS ('000)		BROADBAND ACCESS SERVICES REVENUE (\$ MILLIONS)				
	Internet	Broadband	DSL	Cable	Metro Enet	Wavelength	WiFi (HotSpots)
2002	295,327	63,203	\$12,898	\$8,176	\$1,053	\$943	\$55
2003	357,641	92,831	\$19,340	\$10,716	\$1,828	\$1,039	\$263
2004	418,616	126,361	\$27,288	\$12,857	\$3,332	\$1,276	\$686
2005	476,996	161,279	\$35,884	\$15,163	\$6,159	\$1,570	\$1,551
2006	531,699	195,270	\$43,200	\$17,103	\$9,704	\$1,922	\$2,769
2007	581,930	226,736	\$48,715	\$18,564	\$14,917	\$2,224	\$4,133

SOURCE: IDC, RHK

From the Front Lines

Broadband Access Services

Tail wagging the dog

The growth of broadband access service revenue (see figure 4) is anticipated to have a positive influence on companies providing network infrastructure solutions. Deployments of DSL, cable, wireless, and optical networks will generate a steady source of revenue opportunities for systems and semiconductor vendors. For vendors, price erosion and competition will somewhat offset the high growth of broadband subscribers. Longer term, the additional traffic generated by broadband access should lead to upgrades in the core of service provider networks. Using South Korea as an example, the growth of broadband access is already catching up to existing capacity and network design. According to RHK, several Korean carriers are upgrading long-haul and metro WDM systems, in addition to looking at next-generation cross-connect systems to ease traffic management. Near-term opportunities should exist for vendors providing enhanced data rate/distance technology, as well as aggregation platforms.

TeleSoft Partners has invested in a number of companies that are enabling the expansion of broadband access (see figure 5). OnFiber is deploying fiber-based metro ac-

cess and metro core networks. Internet Photonics (IPI) is shipping optical solutions that provide a broadband data overlay to existing telecom and cable networks.

Calix has a next-generation remote terminal supporting the aggregation of broadband services and has shipped over 250,000 ports to greater than 80 carriers.

Jungo is a leading supplier of residential gateway solutions bringing broadband into the home and is a supplier to Linksys, the market leader in WiFi systems.

Calient provides optical switch technology to help carriers (e.g.,

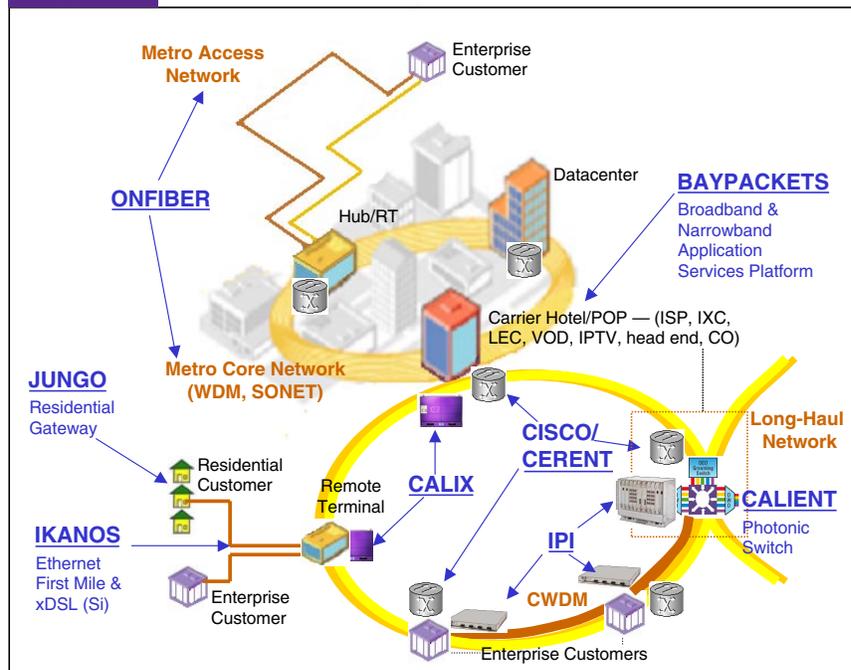
AT&T, KDDI) manage the increasing number of wavelengths in a network.

BayPackets's services platform helps service providers, such as Deutsche Telekom and Touch America, migrate applications from circuit-based networks to packet-based networks.

Ikanos is providing systems companies (e.g., NEC, Sumitomo) with Ethernet access and high-speed DSL components.

These companies are expected to help fulfill the future promise of broadband access to every home and business.

FIGURE 5 TELESOFT INVESTMENTS IN BROADBAND NETWORKING



Aarohi Communications

www.aarohi-inc.com

- McData integrates Aarohi's FabricStream™ technology, a storage processor architecture for fabric application processing, into its intelligent switch platforms (8/25/03).
- McData makes a \$6 million strategic investment in Aarohi. The deal is listed as a B-1 investment. Aarohi has raised more than \$21 million in venture funding since its 2001 inception, from investors Evercore Partners, JumpStart Fund Advisors, Kennet Capital, and TeleSoft Partners (8/25/03).

AmberWave

www.AmberWave.com

- Richard Faubert is appointed president and CEO of AmberWave Systems. Mitch Tyson becomes chairman of the board of directors, and company founder, Gene Fitzgerald, is named chairman emeritus (9/8/2003).
- AmberWave and Ade Corporation team up to qualify wafer metrology tools for strained silicon (7/10/2003).
- UMC introduces its strained silicon technology using wafers built on AmberWave's substrate technology (6/12/2003).
- Mark Lombardi is named vice president of worldwide sales. He will lead the company's sales activities as the semiconductor industry prepares for the commercial adoption of strained silicon (6/5/2003).

BayPackets

www.BayPackets.com

- BayPackets plans to resell Convidia Media Servers. The integrated BayPackets/Convidia solution delivers cost-effective and differentiated enhanced services for wireline, wireless, and cable service providers (9/22/2003).

- BayPackets and SSE partner to bring enhanced telecommunications services to Japan. The Japanese integrator will resell BayPackets' Agility Network Services Platform and Applications (9/22/2003).

Calient Networks

www.calient.net

- Calient launches PX switching subsystem to automate system testing, grid computing, and pre-deployment staging. Montana State University, major U.S. carriers, and optical research institutions are first to adopt photonic switch core (9/4/2003).



Calient PX switching subsystem

Calix

www.calix.com/

- Calix ships 1,000th C7 Simplified Services Platform—more than 80 service providers deploy more than 100,000 ports (7/21/2003).



Calix Outdoor Cabinet with C7 Platform

CoSine Communications

www.cosinecom.com

- KT Corporation, South Korea's largest carrier, purchases additional units of CoSine's IPSX 9500 to support increased enterprise adoption of network-based services in South Korea (9/15/2003).
- Frontier selects CoSine's IPSX 9500 to power its network-based IP service portfolio. The IPSX 9500 will enable private networking, secure Internet access, universal remote access, and managed firewall services for Frontier's SMB customers (9/2/2003).

CreekPath Systems

www.creekpath.com

- IDG's Computerworld names CreekPath the winner of the annual Innovative Technology Awards. CreekPath was honored for providing measurable business value to end users (9/24/2003).
- CreekPath releases its Suite 3.0, which integrates backup and database operations management and decision support portal to help tie storage to overall business strategy (9/10/2003).
- *Computer Business Review*, an IT industry magazine, names CreekPath to its top ten list of companies that are the most influential in the storage sector (8/5/2003).
- CreekPath harnesses the power of NetApp® Manage ONTAP™ to further enhance its storage operations management suite for NetApp solutions (6/17/2003).

Ikanos Communications

www.ikanos.com

- Ikanos receives new funding from TL Ventures to close its Series D round with \$33 million. The company will use the additional capital to support volume shipments of its broadband chipsets to Korea, Japan, China, and Europe (7/9/2003).

- Korea Telecom delivers 50 Mbps VDSL services with Hyundai Networks' equipment powered by Ikanos components (6/18/03).
- DMT wins IEEE 802.3AH and T1E1.4 as the only worldwide standard for DMT. Ikanos is a leading supplier of DMT technology (6/17/2003).
- Marconi selects Ikanos's VDSL-DMT chipsets for its next-generation multi-service access node (6/10/2003).

Internet Photonics

www.internetphotonics.com

- Buckeye CableSystem deploys Internet Photonics's equipment in a new multi-service network for VOD and commercial services. LightStack platforms cost-effectively deliver new services over multiservice network (10/6/2003).
- BigBand Networks and Internet Photonics team up to provide video transport solutions for cable operators (9/22/2003).
- Internet Photonics hires former AT&T executive, Kent Takeda, to run Telco Business Unit (8/5/2003).
- Internet Photonics and Jedai Broadband Networks announce end-to-end commercial services solution for cable operators (7/29/2003).
- FiberNet Telecom Group, a provider of metropolitan connectivity, deploys Internet Photonics's Intelligent Wavelength Platforms to provide optical Ethernet transport services within the New York metro market (7/21/2003).



Internet Photonics and cable industry executives network at a racing event at the Pocono Speedway in Pennsylvania. The event was part of a two-day IPI sponsored customer meeting.



Graham Smith demonstrates Internet Photonics's LightStack GSLAM to a prospective client in an IPI suite at a recent trade show.

- ADC and Internet Photonics announce that ADC will provide systems integration services to Internet Photonics for the company's optical Ethernet and WDM products (5/27/2003).

- *Communications Technology* magazine selects Internet Photonics's LightStack™ GSLAM as a finalist for a Readers' Choice Award, an annual program that honors the industry's most innovative new products (5/5/2003).

IP Unity/empowerTel Networks www.empowertel.com

- IP Unity offers unified messaging and conferencing applications with BEA Weblogic Platform 8.1 (8/4/2003).
- IP Unity and Gallery IP Telephony announce availability of carrier-class messaging, conferencing, and prepaid calling solutions for cable networks (7/22/2003).

Investment Bank Analysts

Alcatel (ALA)—Banc of America, Chris Crespi (415-913-2147); RBC Capital, John Wilson (416-842-7908); Merrill Lynch, Peter Dionisio (44-20-7996-1600).

Cisco (CSCO)—Deutsche Banc Alex Brown, Raj Srikanth (212-469-7687); CIBC World Markets, Stephen Kamman (212-667-8146); Banc of America, Chris Crespi (415-913-2147); UBS Warburg, Nikos Theodosopoulos (212-713-3286).

Cosine (COSN)—Adams Harkness & Hill, Joanna Makris (617-371-3748).

Cypress (CY)—CS First Boston, Tim Mahon (650-614-5040); Lehman Brothers, Dan Niles (415-274-5252); Citigroup-Salomon Smith Barney, Clark Westmont (415-951-1886).

Dell (DELL)—US Bancorp Piper Jaffray, Ashok Kumar (650-838-1414); Bear Stearns, Andrew Neff (212-272-4247); CS First Boston, Kevin McCarthy (212-538-3809).

Infineon (IFX)—Citigroup-Salomon Smith Barney, Navdeep Sheera (44-20-7986-4199); Merrill Lynch, Andrew Griffin (44-20-7996-1414); Lehman Brothers, Dan Niles (415-274-5252).

Intel (INTC)—US Bancorp Piper Jaffray, Ashok Kumar (650-838-1414); Lehman Brothers, Dan Niles (415-274-5252); Oppenheimer, N. Quinn Bolton (212-668-8167).

Nortel (NT)—Deutsche Banc Alex Brown, Cobb Sadler (415-617-3242); Thomas Weisel Partners, Hasan Imam (212-271-3698); CIBC World Markets, Stephen Kamman (212-667-8146); CS First Boston, James Parmalee (212-325-6191).

SigmaTel (SGTL)—Merrill Lynch, Joseph Osha (415-676-3510); JP Morgan, Christopher Danely (415-315-6774); CIBC World Markets, Jim Jungjohann (720-554-1120).

Vitesse (VTSS)—CIBC World Markets, Jim Jungjohann (720-554-1120); Citigroup-Salomon Smith Barney, Clark Westmont (415-951-1886); Lehman Brothers, Arnab Chanda (415-274-5370); Thomas Weisel Partners, Jeremy Bunting (415-354-2610).

Jungo

www.jungo.com

- Jungo's OpenRG™ Software is deployed in New Linksys Wireless-G VPN Router (10/1/2003).
- Jungo's introduces new OpenRG Software for wireless gateways and access points. It is integrated into designs from leading wireless LAN OEMs and ODMs (9/9/2003).
- Jungo raises \$5.5 million in third-round funding from Infineon Ventures, the Intel Communications Fund, Partech International, and TeleSoft Partners (9/8/2003).
- PCI of Japan introduces VPN gateway powered by Jungo's OpenRG Software (8/28/2003).
- Kinpo introduces residential and SOHO wireless gateway powered by Jungo's OpenRG (6/18/2003).
- Toshiba selects Jungo's OpenRG CableHome-based residential gateway software for its new wireless cable modem routers (5/12/2003).



Lynx Photonic Fiber Cross Connect

Lynx Photonic Networks

www.lynxpn.com

- Lynx launches LightLEADER Plug-n-Play Optical Switch Line (7/9/2003).

Matrix Semiconductor's 3D Memory Architecture (featured on the cover of *Scientific American*) increases microcircuit capacity by building horizontally and vertically. Right: Matrix Semiconductor MMC Memory Card



Matrix Semiconductor

www.matrixsemi.com/

- Matrix Semiconductor is nominated for the World Technology Award in the "Information Technology Hardware" category (6/18/2003).

Novalux Inc.

www.novalux.com

- Novalux raises \$17.5 million in Series A funding and appoints Jeffrey Cannon as director, president, and CEO. Novalux filed for Chapter 11 several months ago in order to restructure its debt, and both new and existing investors provided the \$17.5 million in order to reacquire the company (7/15/2003).

NP Photonics

www.npphotonic.com

- NP Photonics and Chromux announce manufacturing and distribution partnership (9/22/2003).
- NP Photonics introduces benchtop version of its Scorpion Erbium micro fiber laser modules (6/3/2003).

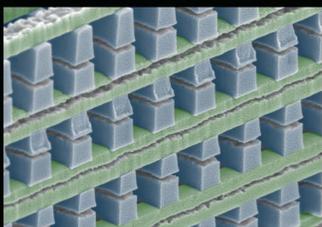
OnFiber Communications, Inc.

www.onfiber.com

- OnFiber extends network with Terabeam's Wireless Gigabit Ethernet System and becomes first carrier to deploy Terabeam GigE Gigalink System (10/17/2003).
- OnFiber extends network with optical wireless from fSONA to deliver rapid and cost-effective connectivity solutions (10/8/2003).
- OnFiber expands its service offerings into the Boston and Sacramento markets, bringing the total number of metros that OnFiber serves to fourteen (6/17/2003).

SCIENTIFIC AMERICAN

A Vertical Leap in Microchips
Engineers have discovered a way to pack more computing power into microcircuits. Build them vertically as well as horizontally.



By Thomas H. Lee

Provide Commerce/ProFlowers

www.proflowers.com

- Provide Commerce files registration statement for Initial Public Offering. The managing underwriters of the offering are SG Cowen Securities as lead manager and Roth Capital Partners and Morgan Keegan & Co. Inc. as co-managers (9/23/2003).
- ProFlowers announces corporate name change to Provide Commerce, Inc. (9/16/2003).
- ProFlowers, the largest direct-from-the-grower flower company in the U.S., reports most profitable and successful quarter to date. Revenues climbed 15 percent to \$28.8 million for the period ending March 31, 2003 (5/7/2003).

SigmaTel

www.sigmatel.com

- SigmaTel introduces third-generation D-Major™ Audio Decoders with greater integration and hi-speed USB (9/21/2003).



MP3 player with SigmaTel components

- SigmaTel announces Initial Public Offering. A Shares of SigmaTel's common stock traded on the Nasdaq National Market under the trading symbol "SGTL." Merrill Lynch & Co. acted as sole book-running manager, JP Morgan acted as co-lead manager, and CIBC World Markets and Needham & Company, Inc. acted as co-managers (9/19/2003).

The FeedRoom

www.feedroom.com

- TheKnot.com announces first broadband subscription broadcasts of wedding gown fashion shows with 360-degree views (6/23/2003).
- Movielink launches a co-branded movie download service with The FeedRoom (6/2/2003).

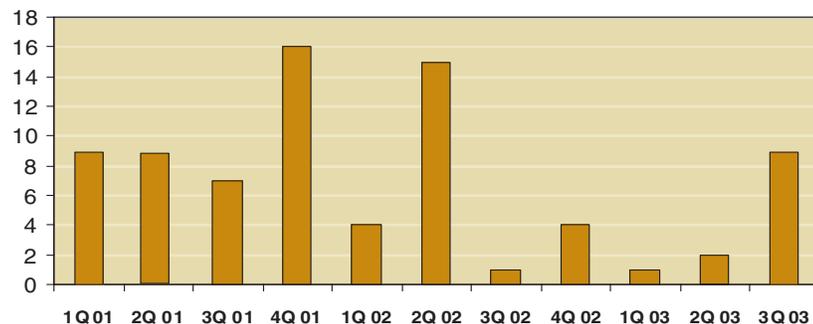
Xpedion Design Systems

www.xpedion.com

- Xpedion names Ron Rohrer as chairman of the board of directors. Rohrer will also be directly involved in the business strategy and operations at Xpedion (9/8/2003).
- Acco Design chooses Xpedion for RFIC Simulation (6/9/2003).

IPO VOLUME INCREASES IN THE THIRD QUARTER OF 2003

Number of Venture-Backed IPOs in the United States



SOURCE: THOMPSON VENTURE ECONOMICS AND NVCA

Conference Calendar

STORAGE NETWORKING WORLD

October 17–30
JW Marriot Grande Lakes Resort
Orlando, FL
Participating: CreekPath

MID-AMERICA TELECOM SHOWCASE & SEMINAR (MATSS)

October 19–21
Kansas City, MO
Participating: Calix

MIDWEST TELECOM EXPO

October 20–22
Fort Wayne, IN
Participating: Calix

IOWA TELEPHONE ASSOCIATION 107TH ANNUAL CONVENTION & TRADE SHOW

October 26–28
Des Moines, IA
Participating: Calix

KTA–TTA KY & TN JOINT CONFERENCE & SHOWCASE

October 26–29
Franklin, TN
Participating: Calix

TECHVENTURES ASIA 2003

October 27–29
Singapore
Participating: Ikanos

ALASKA ASSOCIATE MEMBER SHOWCASE

October 29–30
Anchorage, AK
Participating: Calix

ALABAMA/MISSISSIPPI TELECOM ASSOCIATION (AMTA) ANNUAL CONVENTION

November 2–4
Biloxi, MS
Participating: Calix

NGN FOCUS ON THE FUTURE OF NETWORKING

November 3–7
Boston, MA
Participating: BayPackets

TELCO TV

November 13–14
Las Vegas, NV
Participating: Calix

PHILADELPHIA TECHCONGRESS

December 2–3
Pennsylvania Convention Center
Philadelphia, PA
Participating: CreekPath

MONTANA TELECOMMUNICATIONS ASSOCIATION (MTA) 22ND SHOWCASE

December 2–4
Billings, MT
Participating: Calix

PHOTONICS WEST 2004

Jan 27–28, 2004
San Jose, CA
Participating: NP Photonics

OFC 2004

Feb 24–26, 2004
Los Angeles, CA
Participating: NP Photonics

IEEE INTERNATIONAL MICROWAVE SYMPOSIUM

June 6–11, 2004
Fort Worth, TX
Participating: Xpedion

Executive Recruiting

Highlighting
key job
opportunities
at our
portfolio
companies

BayPackets (Fremont, CA)
www.BayPackets.com

- Vice President, Sales

Jungo (Sunnyvale, CA)
www.jungo.com

- Vice President, Sales
- Vice President, Marketing

Matrix Semiconductor
(Santa Clara, CA)
www.matrixsemi.com

- CFO

Xambala (San Jose, CA)
www.xambala.com

- Vice President,
Sales (1H04)