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## VocalTec shifts focus toward Voice over Broadband

Struggling to leverage its footing in International Long Distance (ILD) segment, VoIP pioneer Vocaltec has decided to go after the emerging residential Voice-over-Broadband market.

Vocaltec recently introduced an extended offering of its softswitch product line, Essentra. The extensions will enable the vendor to target a broader market. Essentially the company has decentralized the product architecture. While previously Vocaltec had a more integrated product offering, now the vendor is offering separate components that work with third party products. The most important extension is the access product or Voice-over-Broadband (VoB) application server.

The VoB application server can handle residential and SOHO features that are coming up in other ASP offerings (such as Vonage) or bundled voice in broadband access networks worldwide. The features include 3-Way Calling, Call on Hold, Call Waiting, Voicemail, Call Forward, and E911. This application server, representing an expansion of Vocaltec's Class 4 offering is new to the company product portfolio. Vocaltec did not have an access product before.

When the ILD segment within VoIP showed signs of weakness a year ago, Vocaltec introduced a SIP based softswitch to address a more buoyant Class 4 market. However, owing to a less decentralized softswitch portfolio,

the company had little success selling into the market segment that had already been wooed by the likes of Sonus, Telica and other large telecom vendors. Vocaltec revenues declined substantially which led to the latest revamping of its product line.

Vocaltec is not the first one to address VoB either. The company faces competition from IP Centrex vendors such as Sylanro, Broadsoft, and Vocaldata. These vendors provide an extensive set of enterprise Centrex features, a subset of which is relevant to the residential segment. By packaging the relevant features for broadband service providers, the IP Centrex vendors have found a new market for their solutions recently. In fact, these vendors are expecting up to one-third of their revenues to come from solutions catered to the residential consumer offering. So Vocaltec may not exactly have an easy ride. In addition, vendors such as NetCentrex who also come from a softswitch background have been selling into the residential broadband space for quite some time.

There is however a slight difference in the Vocaltec option. Vocaltec's solution focuses on residential/SOHO versus a heavy enterprise focus of IP Centrex vendors. The other major advantage as compared to IP Centrex vendors that Vocaltec has, is the availability of Class 4 softswitch solutions which the former do not possess. It is important to mention here that Softbank BB, a VoB service provider in Japan, has recently deployed Sonus Class 4

Vocaltec Contd....

infrastructure to better manage its large voice subscriber base. VoB service providers need VoIP gateways to breakout into the PSTN. Among Vocaltec competitors in VoB, NetCentrex has both residential VoB feature server and SS7/Softswitch capabilities. IP Centrex vendors rely on VoIP gateway manufacturers such as Cisco and Sonus to interconnect to PSTN.

Nevertheless on the application server front, Vocaltec will have to compete on features alone, and here - on the enterprise side at least - IP Centrex vendors are a step ahead of Vocaltec. On residential side, although IP Centrex vendors were in the market before Vocaltec, we do not view this as a significant advantage. After all, Vocaltec had a lot of line side feature applications as part of its Trulyglobal venture.

Vocaltec has historically carried out a significant amount of customization with localization capabilities, which should help the company serve the broadband operators. Some of that customization work has crystallized into products that can potentially be offered off-the-shelf. Such products include a routing server that centralizes routing policy for large Class 4 networks, and a GSM roaming gateway. The latter is going to be

offered only on a controlled availability basis and needs further customization. The GSM roaming gateway is used by carriers to handoff GSM traffic internationally and bypass local fixed carrier. The solution handles SMS as well, which makes it more attractive.

The new disaggregated offering - which also includes a border control element, an open call control solution, and a SIP/SS7 gateway - is packaged in a way that makes it easier for the channels to sell as they are free to offer the individual components rather than being compelled to sell the entire Vocaltec package. This makes Vocaltec option more appealing for channels and technology vendors.

Vocaltec already has a few deployments of the new VoB application server product. The VoB focus is a transition for the company. Its H.323 sales have fallen much faster than what the company had expected. In addition to that, the ability to sell complete network migration for Vocaltec was harder. As such, the two recent quarters showed far lower revenues than the company's average. Vocaltec probably has one or two quarters to transition back with the expected revenue from new product suite. The company is counting on readiness in the global market for voice over residential broadband.

## NewStep introduces a lightweight interworking solution

Toronto based NewStep Networks has introduced a service control solution that enables applications, including pure voice and other enhanced services, located in either TDM or IP cloud to be offered seamlessly across the users connected to both networks. The solution is intended to provide carriers a simpler way to connect to the IP network.

IP/TDM interworking has been the main obstacle for carriers who are looking to leverage the IP flexibility without having to go through a wholesale transition of their TDM networks. Instead of deploying a full fledged expensive softswitch solution, products such as the ones offered by

NewStep offer an easier and cost effective interworking path to the carriers.

The NewStep solution connects to TDM and IP via SS7 or SIP signaling protocols, creating a service control layer between IP-based applications and the underlying signaling systems within the networks.

The company also announced that Bell Canada is using the solution within its contact center offering. Bell Canada is able to leverage its existing network infrastructure and yet able to incorporate IP features under contact center control without the expense of reprogramming its central office switches or AIN service platforms.

## VoIP vendors embrace Wi-Fi

Wireless LAN technology and VoIP have started to embrace each other to drive the adoption of Voice over Wireless LAN (VoWLAN), which is the ability to make voice calls over an enterprise wireless LAN using Wi-Fi technology. While WLANs are meant for data connectivity and Internet access, VoWLAN allows an enterprise to add voice element to their network. VoWLAN is therefore a natural extension of VoIP, and vice versa.

VoWLAN technology routes calls from the wireless phone or from a softphone-enabled PDA/laptop to a WLAN Access Point and onward to a VoIP gateway. The gateway may already be in use to deliver VoIP over wired networks. Calls are managed by on-premises PBX. In case an IP PBX is in use, the VoIP gateway is not required. The set-up allows all regular PBX functions that are available on a worker's wired desk phone to be available on the VoWLAN phones. Offnet calls that are made to phones outside the company network will go through the PBX on to the PSTN.

Consumers can also use Wi-Fi enabled devices over Wi-Fi networks and routes calls over the Internet. In this scenario, subscribers can place calls from a location or hotspot that offers Wi-Fi connectivity. Hotspots are typically placed at hotels, airports, college campuses, train stations and coffee chains. The calls can then be routed anywhere over the Internet through to the PSTN with the help of VoIP gateways. That form of Voice over Wi-Fi, however, is still in its infancy. In fact there are only a handful of service providers such as Net2phone offering this service to ISPs. Voice over wireless from any room in the house offers appealing new uses. For the near term however, ubiquitous POTS services from the local telephone carrier and inexpensive cordless phones will continue to dominate the residential consumer market. As the cost of Wi-Fi telephones matches traditional phones and low cost residential IP telephone service is readily available, Voice over

Wi-Fi will make its way into the consumer segment.

The opportunities for Wi-Fi telephony are found in segments such as education, healthcare, retail, manufacturing and warehousing. These have been the early adopters of wireless LAN technology. Employees in these industries are more mobile than the average office worker and have specific application needs that require mobile handsets or PDAs. Adding Wi-Fi telephony leverages existing investments in wireless LANs while increasing productivity and responsiveness for mobile employees in the workplace.

Since VoWLAN primarily drives the deployment for IP PBXs, major vendors such as Cisco, Nortel, Avaya, and 3Com are partnering with the Access Point manufacturers and handset providers to address this new market opportunity. Sonus Networks has also recently joined the competition. Sonus access servers will now be able to support Wi-Fi voice calls. Sonus made an announcement to this effect recently at SUPERCOMM 2004. Such initiatives seem to be a move in the right direction for the convergence of two major technologies: wireline and wireless. According to certain industry players, VoWLAN is an ideal platform to bring together the two different worlds of wireline and wireless.

The main VoIP ingredients that are bringing these two worlds together are the IP PBX (in the enterprise environment) or an access server (for the consumer world), an Access Point that provides Ethernet (IP based) connection over the air to subscribers, and the handsets with Wi-Fi cards and Ethernet chipsets inside. Handset manufacturers include Symbol, Spectralink, and Motorola. Motorola has introduced a dual mode handset that works in both Wi-Fi and cellular environments. Access Point vendors include Meru Networks, Aruba, Cisco and several others. Perhaps the most innovative and challenging segment of the market is the software applications that reside on the handsets.

Applications residing on the handsets have to be developed beyond a simple dialer enabling a voice call.

Enhanced features have to be added to facilitate services such as Push-to-Talk and other presence based services. Companies like Telesym, Skype, IP Blue and Avaya have started developing softphones that run on PDAs operating over a Wi-Fi network. TeleSym is one of the leading first generation handset application developers in the VoWLAN space. The company has unveiled an advanced version of its solution recently that addresses inherent security issues on WLAN providing standards based interoperability. SIP and H.323 support has been added to this product. The product has been tested for its interoperability with Access Points of Bluesocket and Aruba. On the IP PBX side it is interoperable with 3Com, Avaya IP Office and Cisco Call Manager.

There are currently about 15 TeleSym enterprise pilots underway which the vendor expects to be converted into commercial deployments. The company is working further on the solution in order to make it work in carrier environments. Once the

interoperability is achieved between carrier services and enterprise deployments, the solution is expected to gain more deployments.

TeleSym also hopes to bring a dual-mode mobile device (a phone that works on both Wi-Fi and cellular networks) to market along with Intel technology. The two have already demonstrated the dual mode device at the Intel Developer Forum. Telesym will be providing its software (for roaming between Wi-Fi and cellular networks) in Universal Communicator Platform, a dual mode handset technology that Intel will be launching in the coming months.

An interesting issue VoWLAN raises is the relevance of an IP Phone, which could see some stiff competition coming from VoWLAN or dual mode handsets. If LANs turn wireless, there is little justification for using an IP Phone on the desktop. An IP-enabled VoWLAN handset could be used on desktop with added flexibility of mobility.

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## AudioCodes and General Bandwidth qualify for Cable installations

AudioCodes and General Bandwidth have qualified for media gateway deployments in Cable operator networks. The two new qualifications were announced by CableLabs earlier this month following participation of the vendors in its recently concluded compliance tests.

CableLabs, a standards body set up by cable operators, has a strict criteria set for qualifications and certifications it provides. Its VoIP related standards initiative, PacketCable, certifies equipment such as cable modem termination system, Call Management Server which is a softswitch equivalent feature server for intra-Cable transmission, Media Gateway Controller which connects a cable operator network with PSTN, and a media gateway that actually carries media across cable and PSTN networks.

There are very few who have received certifications/qualifications in the above areas. In the media gateway category, only Nuera, Cisco and the two latest vendors AudioCodes and General Bandwidth have the privilege to deploy their media gateway equipment in cable operator networks.

PacketCable standards and built on top of the industry's DOCSIS (Data Over Cable Service Interface Specification) cable modem infrastructure. A DOCSIS network with PacketCable extensions enables cable operators to deliver data and voice traffic.

VoIP over Cable is seen as one of the most promising segments in VoIP industry. Cable operators around the world are realizing that there is demand for voice service from someone other than PTTs. In fact, cable operators are uniquely positioned to offer wide variety of services that PTTs cannot offer. The triple play of voice, video, and data is something that Cable operators can easily offer by leveraging their high

AudioCodes Contd...

quality network. PTTs are making some progress with high speed Internet access with DSL but certain markets are well behind the cable operators. In addition, copper networks are fundamentally limited in what they can offer.

Although VoIP deployments in cable segment so far have been small in scale, there are some who have acquired the voice expertise and some who

are still in the process of doing so. In the US, Cox and Comcast have over 2 million telephony subscribers. These cable operators have proven that they can handle a large telephony customer base.

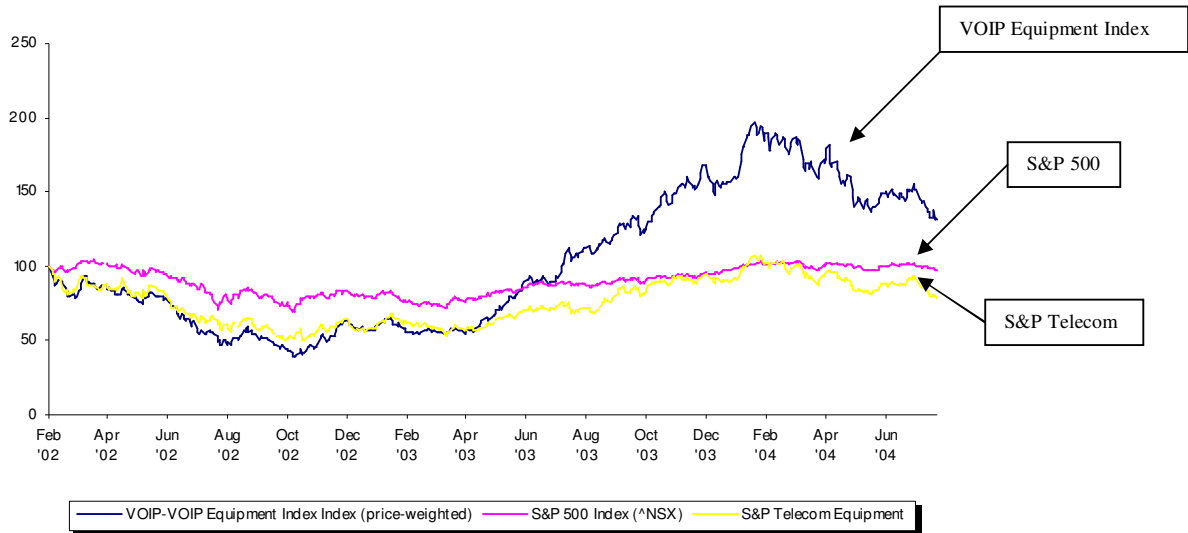
In the cable space there are two distinct ways of deploying VoIP. One is the softswitch type model. The other network architecture is to leverage the legacy Class 5 switch using GR.303 or V5.2 interfaces to bridge IP network into the TDM network.

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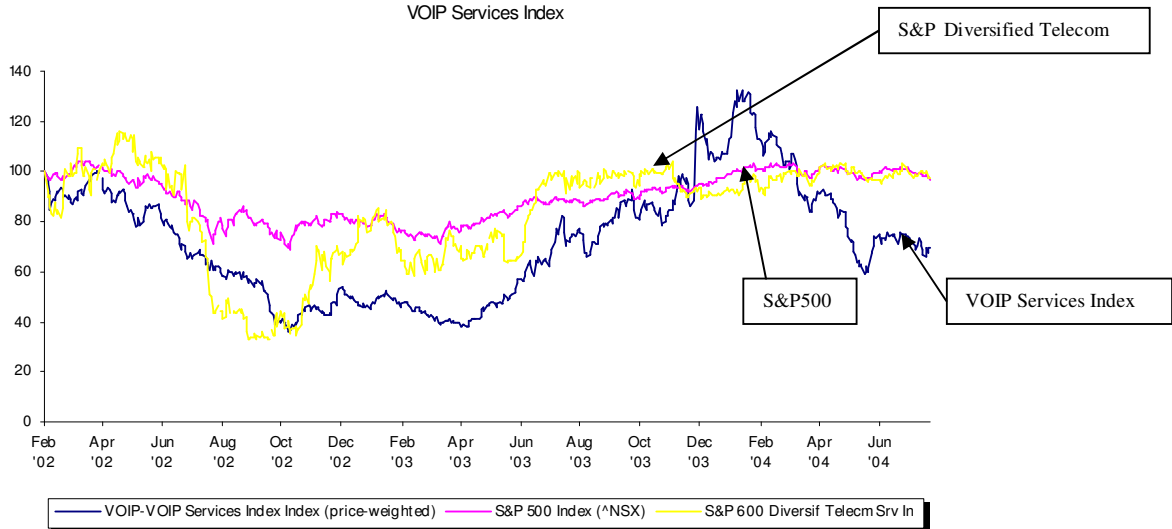
## Financial developments June/July 2004

Company	Products/Services	Development	Details
AudioCodes	VoIP Hardware	Quarterly Results	Revenues \$19.1 million, Net Income \$839,000
iBasis	VoIP International Wholesale	Quarterly Results	Revenue \$61.2 million, Net loss \$5.9 million
RADCOM	VoIP Hardware	Quarterly Results	Revenues \$3.3m, Net loss \$675,000
NexTone	SBC	Funding	Raised \$10m. Round led by BCE Capital and others
OneAccess Networks	VoIP CPE routers	Funding	Raised EUR 7.5m in third round funding led by CDC Ixis Innovation
Brooktrout	VoIP Hardware	Quarterly Results	Revenues \$19.2m, Net loss \$2.9m
MIND CTI	Billing	Quarterly Results	Revenues \$4.3m, Net Income \$1.6m
NMS Communications	VoIP Hardware	Quarterly Results	Revenues \$25.3 million Net income \$1.0 million

VOIP Equipment Index



VOIP Services Index



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