

Forward, the Light Brigade!

by Mehdi Hasan

It has been no different than the Crimean war and neither the casualties are any less. Two thirds of the Light Brigade perished in the battle of Balaklava and so is the case with 60 per cent international phone calls from Bangladesh. Communicating with the world has been a nightmare for BTB subscribers as well as for the mobile users. Because, the over-checked international gateway is still BTB's monopoly and the government has no immediate plan to privatise that segment. Such reluctance has been causing huge financial loss for the nation and the service quality of BTB's international voice traffic has been deteriorating.

High Frequency (HF) radio links had been transporting the country's international voice and data traffic until the first satellite earth station was established in 1975 at Betbunia. Three more satellite earth stations were gradually installed at Talibabad, Sylhet and Dhaka. BTB had been operating its overseas voice and data communications through these installations. BTB only had 566 voice circuits in 1994 and using a smart technology from Israel, the capacity was increased to 1841 in 1998. Additional 238 circuits have also been operating for data traffic. Telex had been dominating the

international data traffic until facsimile was introduced during the late 80's. This device has significantly increased pressure on BTB's international voice channels as facsimile uses telephone lines for data transporting. Country's private telecom sector has been demanding for opening the international gateway since competition was partially introduced in the early 90's. This demand was intensified when the Internet Service Providers (ISPs) were allowed in 1996.

Meanwhile, the intercontinental communications business had paradigm shift. The big birds' constellations up in the space were no longer the only carrier for global communications. Thousands of kilometers long super snakes traveling under the seawater started connecting the countries across the globe. This new technology offers wider bandwidth with faster speed at lesser cost compared to the satellites. Using the state-of-the-art optical fibre technologies it transports voice, data and video signals at the lightning speed. Emergence of the Dense Wavelength Division Multiplexing (DWDM) technology enhanced its speed and capacity. Myanmar, India, Sri Lanka and Pakistan are the regional countries who availed such opportunities without any second thought. Bangladesh

was also approached in 1996 to get connected with SEA-ME-WE 3 Submarine Cable System. It has connected the Southeast Asia, Middle East and Western Europe. But, our policymakers' lack of knowledge on the significance of such connectivity kept Bangladesh isolated from the information super highway.

Besides continuous congesting the voice traffic, this missed opportunity of availing SEA-ME-WE 3 was hitting below the belt of the ISPs and IT industry. Because the government mandated them using very small aperture terminal or VSAT solutions. The situation further aggravated when BTB was appointed as an irrelevant broker between the ISPs and the satellite providers. BTB stipulated an impractical price tag of US\$ 8,000 per month for each 64 kbps VSAT circuit. Such investment dragged the growth of Internet in Bangladesh in opposition to the flourishing cyber business in the neighboring landlocked Nepal. When this Himalayan Kingdom proudly hosts world's one of the highest cyber-cafes, the mushroomed computer institutes including NIT do not provide Internet access to its students in Bangladesh.

Our policymakers however woke up watching the skyrocketing growth of Indian software industry. They mixed it up with

traditional business, which requires least iterate workforce, inefficient banking system, corrupt customs department and predominantly pathological loan defaulters. Ignoring the demand for wider bandwidth, the government's promises of providing bank loans for software developers and IT professionals confirm this notion further. However, the government withdrew BTB's involvement from dealing with the VSAT circuits in last February. It was like releasing an innocent after detaining for years without charges. As this victim's days behind the bar can never be returned, lost opportunities of Bangladesh in IT businesses is equally unrecoverable.

It will be unforgivable to spoil the second opportunity of getting connected with the submarine cable systems. This will connect Chittagong, Bangladesh and Tuas, Singapore through 3,221 kilometers undersea optical fibre cable equipped with 34 repeaters. This venture is scheduled to commence from the end of 2001. It has two pairs of fibers, initially transporting 20 Gigabits per second (approximately 250,000 simultaneous telephone calls). Using the DWDM technology, this capacity is expandable to 320 Gigabits per second. Half of the US\$ 150 million investment shall be immediately recovered from leasing capacity to the international carriers. Rest will be paid back to Citibank and US EXIM bank by 10 years with interest at the rate of 1.6 per cent.

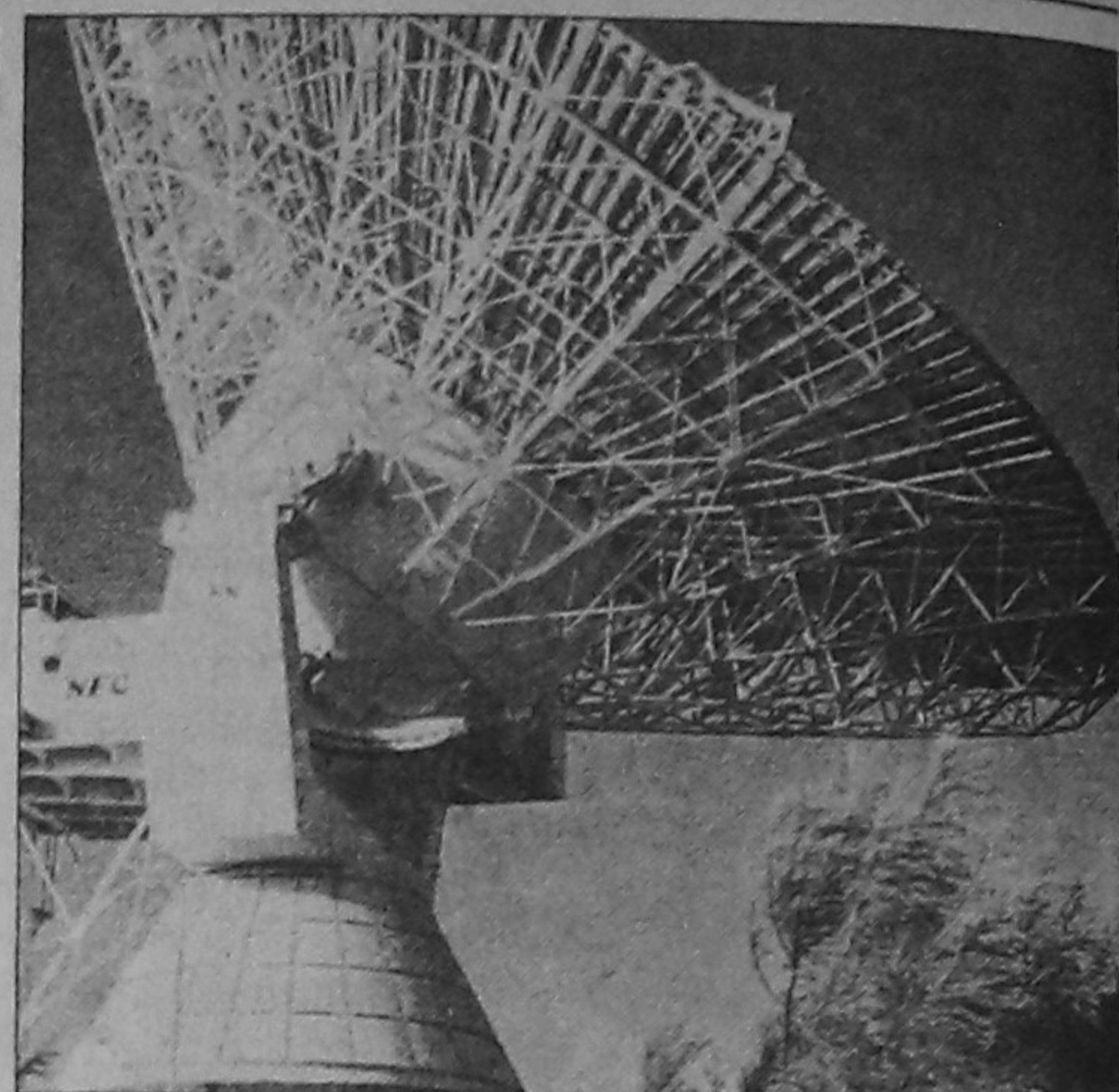
Besides extraordinary financial impact, this submarine cable shall radically influence the national telecommunications policy of Bangladesh. BTB's profit in 1997-98 was Tk. 525 crore and more than 95 per cent of that amount came from telephone service. Earnings from international voice and data services represent more than 60 per cent of its Tk. 12,451 crore collected revenue. Despite reducing the call charges, this amount shall be conservatively quadrupled based on the current state of successful call rate. Further income shall be generated from broadband solutions, fast data transfer, e-commerce, Internet, multimedia, videoconferencing, tele-education, tele-medicine etc. Besides, BTB shall become a major provider for voice over Internet protocol (VoIP). BTB can also bring

forex by leasing the fibre capacity to the landlocked neighbours like Nepal and Bhutan. Meeting the growing demand for fast data connection to Calcutta and Madras are the lucrative options.

The undersea cable project shall strengthen the government's moral to allow the private sector international gateway. Mobile operators shall gain enough flexibility to offer highly competitive call charges to their customers. These offerings shall immensely stimulate the country's economic activities, unless the government blunders. Export of traditional goods shall be intensified as videoconferencing with the buyers shall significantly reduce the negotiating process, unless the government blunders. Web hosting will enable the entrepreneurs displaying their products in the cyber showcase and the web designers shall outnumber the insurance brokers, unless the government blunders. Small office home office (SOHO) will thrive and economic prosperity will emerge without rocking the social

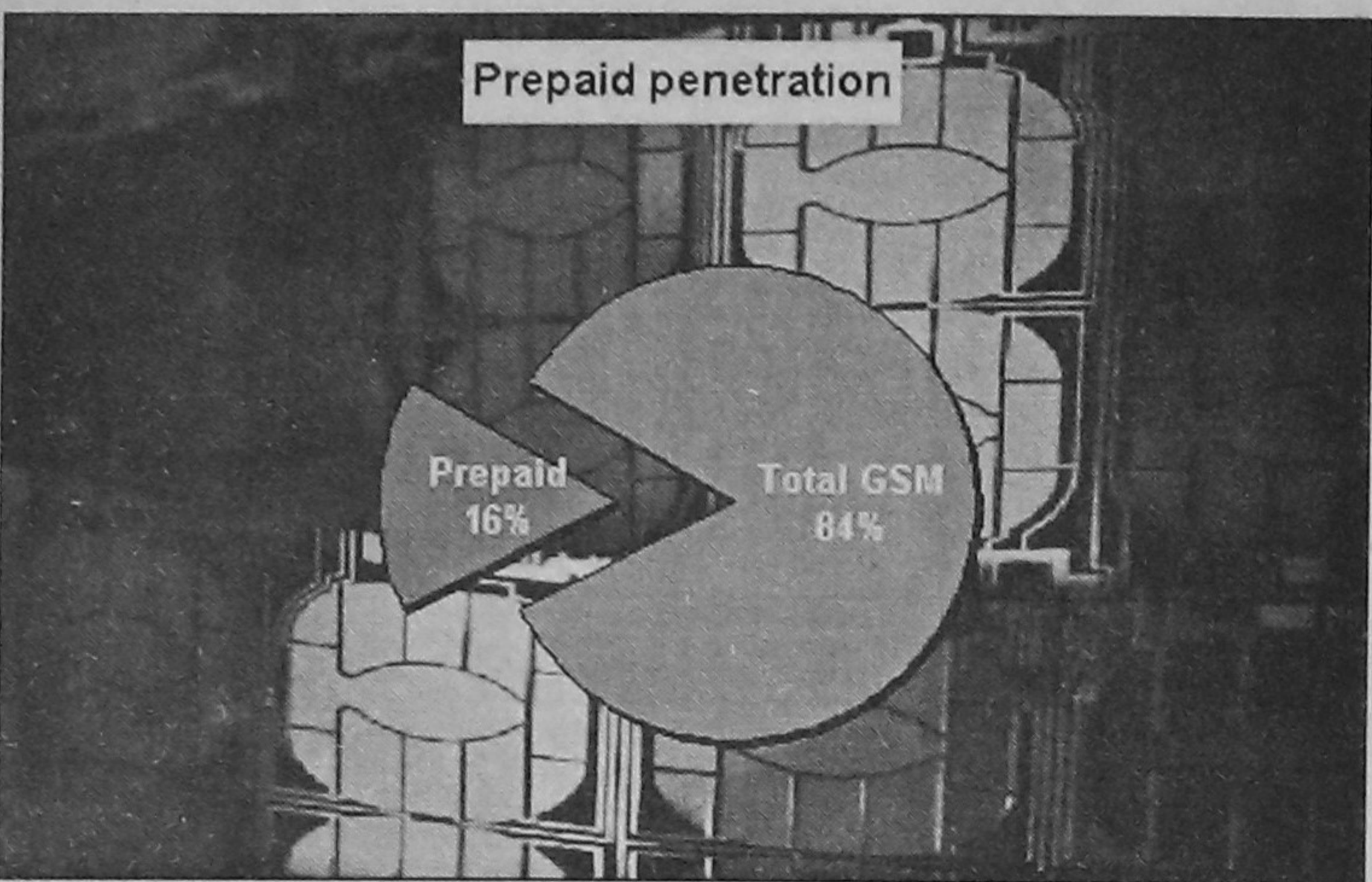
norms, unless the government blunders. These new breed of intelligent citizens will successfully dwarf the statement-happy intellectuals, unless the government blunders. Expatriate Bangladeshis shall be encouraged coming back home to lead the life of a first class citizen, unless the government blunders.

Our post-independence history is the reason behind such repeated skepticism on the government. It must be noted that all the above stated possibilities are already turned in to reality just across our border. They proved that economic strength of a nation is the centripetal force, generated from the core of its intelligentsia. More than 200 years ago, our forefathers ignored English in the name of infidel's language. We are still paying the penalty of that ignorance, if Bangladesh does not connect with the undersea cable, creating an intelligent nation shall be deferred for an indefinite period. That is the least fatality the country can ever sustain. Forward, the Light Brigade!



The Internet's World Wide Web holds a vast amount of additional information prospective VoIP users may wish to examine. Here's a sampling of sites to explore:

- <http://www.pulver.com>
This is home to the most comprehensive Web site with information about Voice over IP. Here there's info on H.323 and other standards, links to the Voice over Networks Coalition, info about The Pulver Report, an on-line newsletter about voice over network technology, and info about conferences and moderated newsgroups.
- <http://www.von.com/teleph.html>
For VoIP advocates looking for info about Internet telephony products or info about the H.323 standard, this is the site to use.
- http://www.imtc.org/i/about/i_bckgnd.html
Learn about vendor efforts to standardize on VoIP components and technologies by tapping into the VoIP Forum's site.
- http://www.tcm.hut.fi/Opinnot/Tik-110.551/1997/seminar_paper.html
An April 1997 paper authored by two professors at the University of Helsinki which provides a fairly in-depth technical review of the H.323 standard for voice transmission over TCP/IP and other widely used audio coding standards and recommendations.
- <http://www8.zdnet.com/pcweek/opinion/0818/18just.html>
PC Week Online looks at the planning that must go into any Voice over IP implementation.
- <http://www.nwfusion.com/netresources/0630feature.html>
This online site for Network World newspaper offers a bevy of news reports from the last year about VoIP announcements. Plus a June 1997 full-length feature story, "IP Calling," provides an assessment of the issues and early products that make up the VoIP market.
- <http://www.internetwk.com>
InternetWeek's Web site contains a flurry of news stories regarding recent VoIP announcements.



VoIP: Long Live the Mavericks

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Based on tests using Hammer Internetworking Tester, The Tolly Group has defined a level of "toll-quality" voice fidelity that it calls "business-quality audio." To test the effects of OmniCore 5000 QoS on VoIP traffic the company built a network that used Alcatel's OmniPCX 4400 IP-based PBX for establishing voice calls across the network.

The tests demonstrated that the OmniPCX 4400, in conjunction with the OmniCore 5022, provided up to approximately 500 simultaneous VoIP calls in test conditions with business-quality audio while completing calls at a rate of over 9,600 calls per hour (busy hour call completed). The system was able to

maintain call volume and call completion rates, even when the network was congested. Additionally, The Tolly Group tested a similar 500-call configuration with the addition of prioritized SAP/R3 data in a fully congested network. In all cases, the call volume and quality remained unaffected. Call quality was rated 4.5 (i.e. between good, excellent and largely above the recommendation of The Tolly Group).

On its own, Alcatel has tested the OmniPCX 4400 to provide up to 1,500 simultaneous voice calls over IP and 47,000 calls per hour (BHCC). To view the complete test results, please go to www.tolly.com and search for document number 200208.

Technology Review: The Mighty Number Seven

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telephone network. In addition to database access, the SS7 protocol provides the means for switching equipment to communicate with other switching equipment at remote sites. For example, if a caller dials a number which is busy, the caller may elect to invoke a feature such as automatic callback. When the called party becomes available, the network will ring the caller's phone. When the caller

answers, the called party phone is then rung. This feature relies on the capabilities of SS7 to send messages from one switch to another switch, allowing the two systems to invoke features within each switch without setting up a circuit between the two systems.

The mobile operators use many features requiring switching equipment to communicate with each other over a data communications network. Before deploying SS7, cellular


providers were dependent on X.25 networks to carry IS-41 signaling information through their network. This did not allow them to interconnect through the fixed telephone network, because the X.25 network was not compatible with the PSTN signaling network (SS7). The cellular providers are aggressively changing this situation today, deploying their own SS7 networks. Seamless roaming is one such feature of the cellular network that relies

on the SS7 protocol. In Bangladesh, the CityCell customers' roaming between Dhaka and Chittagong and GrameenPhone subscribers' inter-zonal roaming are the applications of SS7. GrameenPhone and AKTEL's international roaming is also the blessings of SS7. The caller's ID display is another feature of SS7 in cellular mobile. The mobile bound BTB numbers are displayed only if the call is originated from the digital exchange of Alcatel or Ericsson. Calls from NEC exchanges still do not show the number as SS7 is yet to be incorporated in those systems. Similarly, the calls from BTB's analog exchanges do not display their number in the mobile handsets.

SS7 has empowered BTB to offer numerous value added services. BTB exchanges supplied by Alcatel and Ericsson are very much ready to offer services like call divert, call hold, conference etc. Cultural bankruptcy on providing services coupled with ignorance in marketing has kept these invaluable resources unutilized by BTB. All they know is, how to refrain the others from providing cost-effective and modern telecom solutions. After waging an all out and prolonged hostility against the mobile operators, BTB is now making itself a laughing stock against the ISPs on VoIP issue. BTB's hue and cry for losing revenue is a proven bluff due to its negligence towards the potentials of SS7. The government should form an independent inquiry committee to assess the amount of lost revenue in this regard. The BTB officials must be held responsible for causing such financial loss to the national treasury.

Today, SS7 is being deployed throughout the world. This makes SS7 the world's largest data communications network, linking telephone companies, cellular service providers, and long distance carriers together into one large information-sharing network. SS7 supports many new features and applications. Because of its ability to transfer all types of digital information, this new network is being used to deliver many sophisticated services to the customer premises. Many new applications are still under development. The SS7 network interconnects thousands of telephone company providers all over the world into one common signaling network. They are launching new service packages by exploiting the power of SS7. BTB has no reason to follow through.

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