

# WLL could ring in a telecom revolution

*Prof Jhunjhunwala's wired local loops in Chennai show the way to cheaper communication networks*

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BANGALORE: In a presentation that floored his audience, Prof. Ashok Jhunjhunwala of Indian Institute of Technology, Madras outlined how simple innovations could pare down present telecom network costs by more than 60 per cent.

Quite clearly, Prof. Jhunjhunwala's contribution in the morning session of Wednesday's Global Village seminars at the IT.Com show here set the cat among the pigeons, so to speak, gauging by the impact later. He was literally mobbed by technologists, students and entrepreneurs.

The professor's talk centred around how the imaginative use of the latest software and hardware tools could bring down the cost of a telephone line, for instance, from Rs 30,000 to Rs 10-12,000. He and his students actually implemented these in a Chennai suburb, using three companies — Midas, Banyan

and Vembu — set up by them.

The professor detailed how the three parts of a telecom network — backbone network, the exchange and the local loop (cabling from exchange to receiver) — cost around Rs 28,000 (at Rs 5,000, Rs 8,000 and Rs 15,000 respectively). "If infrastructure costs (estimated at about Rs 4,000) are added, we get a figure of around Rs 32,000."

Explaining each segment, he said costs in both backbone network and exchange technology had come down. The last part — the local loop — was the most interesting. Prof. Jhunjhunwala proposes getting rid of the expensive copper wire (getting dearer every year) that is the physical cabling and which costs nearly half the price of the line. His solution is to replace the wire with a wireless local loop (WLL). "This can be done by fixing a base station, either on top of a building or on a street pole. The station is still connected by wire to the exchange but the station transmits on wireless to



the subscriber. About 150-200 subscribers can be served by the station this way. Each telephone line of this sort would cost around Rs 10,000."

The professor observed that if a goal of, say, 100 million telephone subscribers was to be met so that India could keep abreast with the communications revolution, it was essential that more economical means of installing a telephone line are found. "In the West, installing a line costs about \$800, not expensive

## Zeroing in on the last link

BANGALORE: Prof. Jhunjhunwala's talk concentrated on the local loop — akin to the last mile, the connection between exchange and the subscriber's receiver.

There are three entities — connecting from exchange to exchange, the exchange itself and then the local loop. Exchanges per se, thanks to digital tech, are quite smart already. Exchange-to-exchange links are mainly via optical fibre; which cut cost and bone up quality.

The local loop still relies on

good old copper wire and the professor's solution is to do away with at least a part of it. Apart from long installation time and labour costs, it also entails loss of revenue to the telephones department because the network must be ready before subscriber connections are granted.

Also, recent moves to use cable TV as the Internet medium notwithstanding, Prof. Jhunjhunwala believes his type of telecom network must be Net-integratable. "The lines have to have a data connectivity of 64kbps."

for them. So they will not bother about such technology. But the tragedy is that we in India think that because no one in the West has done anything about it, nothing can

be done," he said.

The experimental telephone exchange launched at Adyar has, by all accounts, vindicated Prof. Jhunjhunwala and his team — they are

shipping the technology to France, China, Brazil and Indonesia, among other countries. He also received the Shanti Swarup Bhatnagar Award this year for his work.

But the three companies are also doing extremely interesting work in areas like Digital Internet Access Systems (DIAS). Those who do not have a leased line are painfully aware of the glitches in dialling up the Internet Service Provider (ISP). Prof. Jhunjhunwala says widespread deployment of Fibre in the Local Loop (FiLL) network "holds the promise of providing permanent Net access at affordable cost". Banyan has also developed a way to multiplex calls from subscriber to ISP which reduces line congestion.

"We have the people who can come up with the necessary hardware and software. They are already doing it for companies abroad. If they can do it here, we can really make telecom technology cost-effective, something that is very important in India," he said.