Internet Telephony

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The government has given Indians a gift in the new financial year – it has permitted internet telephony. Unfortunately, the habit of imposing restrictions continues (no doubt a result of the terms of issue of earlier telecom licenses). Starting April 1st, *voice transmission is permitted 'PC to PC' and 'PC to a phone outside of India'. 'PC to phone in India' and 'phone to phone' are still not permitted.*

Internet or IP (internet protocol) telephony involves transmitting voice over data networks using Internet technology. How is internet telephony different from normal telephony?

Normal telephony operates on the basis of *'circuit switching'.* Thus, when Mr A calls Mr B, a circuit is opened between Mr A and Mr B for the duration of the conversation. During this period, the circuit cannot be used for anything else, thus leading to under utilization of the connection.

Internet telephony operates on the basis of *'packet switching'.* When Mr A says 'hello', software turns the 'hello' into a digital code & splits it into packets, each with a destination address. These packets are then transmitted over the Internet to the Internet Telephone Service Provider (ITSP). The ITSP aggregates the multiple packets, converts them into sound and passes the sound to the local telephone network. The local telephone network directs the call to Mr B's voice receiving instrument.

'Packet switching' technology ensures that the connection is open only for as long as is required to transmit the data. This reduces load on the network, and thus the cost of communication. Since the technology is still evolving, voice quality can be low. It however gives *an opportunity to integrate voice mail, video, e-mail and fax into a single value added offering.*

Voice over Internet Protocol (VoIP) can transform the communication set up in multiple-location corporates with large communication needs. Those with existing WAN set up and existing data network with 64kbps leased line facility can easily add voice capabilities with incremental equipment investment of around Rs2.5mn. This can convert their variable cost of inter-office communication into a fixed cost. No wonder large global organizations are increasingly moving over to Internet protocol-based communication networks.

For small and medium enterprises (SMEs), the capital investment may be an entry barrier for a dedicated network. SMEs as well as home users can access internet telephony service providers. If you have a PC and net connection at home, just download any free software such as BuddyPhone, DialPad or PC2Phone and call anywhere.

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Government of India has stipulated that *only licensed internet service providers (ISPs) can offer internet telephony – that too within their respective service areas.* Most national ISPs already have their networks capable of carrying voice services. They would however need to firm up agreements with international carriers for voice landing on their networks. Net2phone, Dialpad, Delta 3 are prospective allies. Billing software and call metering issues too need to be addressed.

Net4India has quickly tied with Delta3. It is offering pre-paid IP calling cards in denominations of Rs1,000 to Rs10,000, which would permit calls to the US at Rs7 – 8 per minute.

IP telephony is clearly a threat to National Long Distance (NLD) service providers. This has led to a crash in the charges for ISD calls originating in India. This will of course affect what ISPs can charge for their IP telephony service – and hence the payback period.

In our neighborhoods, *for the first time cyber cafes and STD / ISD booths will be competing head on.* The latter, numbering nearly 100,000 all over India, may choose to upgrade to be able to offer IP telephony, with incidental impact on NLD economics.

One likely beneficiary segment is the hardware manufacturers, who can expect IP telephony-led boost in demand for computers. But the "Yap Jack" could upset their apple cart. Manufactured by US-based Net2Phone, Yap Jack enables existing telephone instruments to access internet telephony services. The device, which could cost around Rs6,000, serves as an interface between a touch-tone phone and the wall socket for telephone connections, obviating the need for a PC for IP telephony.

Hyderabad-based Surana Telecom is offering "netFone" customer premises equipment that has the requisite features of a PC and includes embedded software to cut voice transmission delays.

Since the TRAI provides for IP calls originating in PCs, the legality of use of Yap Jack, netFone etc. is open to question. But how is the government going to prevent their use? *It is time the government started framing regulations that it can implement.*