

Tech Focus

Why not WLL?

MIR NADIA NIVIN

FOR any given nation, to get a feel of its telecommunication sector, the term 'Teledensity' is often used. Measured in per cent, it basically means the number of telephones in a cross section of 100 people. In Bangladesh this teledensity is about 1%, making it one of the least wired of developing nations.

In these times of global connectivity, when more than 97% of the country's population lacks even Plain Old Telephone Sets (POTS), we do not have the luxury to debate connectivity issues or experiment aspects. The priority is clear: telephone to homes and that too in a cost effective manner.

This is where the concept and technology of Wireless Local Loop (WLL) comes in. Although not at all a new concept as far as deployment in Bangladesh is concerned, nevertheless, given the country's telecomm scenario, its prevalence and usage has been disappointingly low.

Let us first see what this WLL is. By definition, a local loop is the connection from a subscriber's telephone set or any other telephone system to the local exchange. Traditionally this link is provided by copper. However, as the name suggests, in case of WLL this connection between subscribers and the Public Switched Telephone Network (PSTN) is provided using radio signals.

Strictly speaking, the subscribers communicate via radio signals with a wireless base via in turn is wired to the PSTN. But then, for practical purposes the distance between the wireless base and the PSTN is considered negligible.

So, WLL is basically a communication access method that provides the same service that a regular, traditional telephone does. The perk here is that it does so without the added cost and the added trouble of burying tons of copper. On simplest terms, all that is

needed for a particular subscriber to enjoy the services is an authorised antenna. The existence of a wired infrastructure is not mandatory.

Besides that, the perks of WLL are numerous. Firstly, in these times when the world is moving at dazzling speed towards wireless communications all over, it is only natural that the cost of wireless access methods continue to fall as opposed to the cost of copper,

driving force behind our telecomm policy makers' sanctioning its mass deployment.

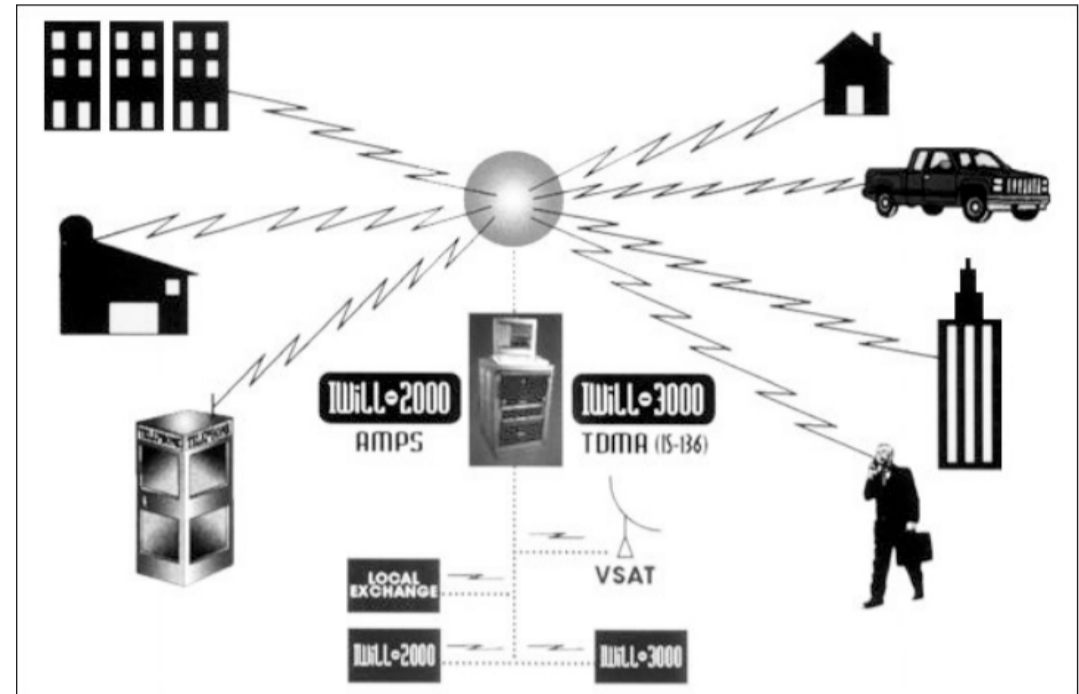
WLL comes as a solution to other problems like where the terrain does not permit the laying of copper wires or in low population density areas where it does not make the burying of expensive copper wires cost effective.

As mentioned earlier, Bangladesh is no stranger to the WLL technology.

country while Sheba was to do so in the southern regions.

Both these companies have made great use of WLL for the fast roll out of services and reliable communication with the scattered subscriber base. They have been successful in bringing a large percentage of their respective regions under the country's telecomm network.

BRTA has installed 10 x TFL WLL



Prospects of WLL at a glance

that at best remains constant. Moreover, the expense of provisioning service via WLL is independent of the distance between the subscriber and the exchange. So economically it is viable.

Then comes the ease of deployment. A typical WLL system can be up and running within 90-120 days. If nothing else, considering our initial priority of increasing teledensity, this fact about WLL should alone be the

Under the rural communication strategy, WLL has been deployed to quite some extent in the rural areas.

License for rural telecommunication was provided to two private sector companies.

Bangladesh Rural Telecom Authority (BRTA) and Sheba Telecom (Pvt.) Ltd, on 1989 and 1994 respectively. BRTA was to develop telecomm services in the northern regions of the

base stations in rural thanas. In case of Sheba, the simplified network architecture consists of Mobile Switching Centers (MSC) to which are connected Remote Base Stations (RBS). The subscribers are connected to the RBS on WLL.

With the completion of the WLL expansion by 2007, both BRTA and Sheba hope to bring almost 90% of the northern and southern rural areas

under coverage.

However, the efforts of BRTA and Sheba are but little consolation. Because in the urban, suburban and other parts of the country WLL is almost unheard of. And more lamentable is the fact that no efforts towards adopting this technology is readily visible.

One should also keep in mind that as far as scalability is concerned, it is very easy to add to the existing network for WLL. Moreover maintenance is expected to be at an all time low, as the system is not based on fault prone wires and will reliably keep communications open during monsoon season and other difficult weather conditions.

Then there is definitely the enticing fact of having an 'always on' internet access.

WLL can be deployed using any of the digital cellular technologies like TDMA, GSM etc. Although GSM dominates the cellular wireless market, it is not a good choice as a WLL platform. This is because as GSM's architecture was designed to handle international roaming, it carries a large amount of overhead that makes it cumbersome and unsuitable for WLL applications.

CDMA, on the other, is the digital standard best suited to WLL. This is because CDMA uses a spread spectrum modulation technique in which wide frequencies are employed for transmission and the system's low power signal is spread across wide frequency bands. Moreover, CDMA offers higher capacity, high voice quality and a high level of privacy.

At this point one may get to wondering what the difference between WLL and mobile communications is. Well, the distinction is easily understood. The basic motto of mobile telephone systems is to allow people to communicate when they are on a move and not at a fixed location. As such a moderate voice quality with high ambient noise acceptable. Data communication does not take a front

seat in requirements and low bit data communication is acceptable. Airtime charges for such services are acceptable.

On the other hand, WLL is intended to serve customers at their homes or offices. And so the phone services provided must be as good as wired phones. The voice quality must be high. One must be able to use speakerphones, cordless phones and parallel phones. It must also support fax and internet access. Airtime charges in this case are not expected and totally unacceptable.

As a developing nation, it is vitally important to Bangladesh that its teledensity rates be increased. And for that we need technology that is easy, fast and reliable to deploy. In such scenario WLL seems to be the solution. In developing nations across the globe this has been used with wide success.

Moreover, as far as Bangladesh is concerned, WLL is not entirely new to us that the waters need to be tested before launching it on a commercial scale. It has been utilized and utilized with success in the remote northern and southern regions of our country. So it is about time that we adopt it in the cities, suburbs and other parts of the country. For if we sit waiting for the cumbersome copper wire infrastructure to be set thoroughly, it would be too late. One day we might suddenly find ourselves well into the 21st century and our teledensity no better than a mere 5 percent.

Dr Tech

Dear Dr. Tech, I have downloaded some software and installed them by running its setup program. Now I want to delete the setup program, but should I do it? Is it going to harm the installed programme or my windows? Please let me know. Safia

Dear Safia Usually, if the setup programme you downloaded was a .ZIP file, you are normally safe. If it was an .EXE file, make sure it's only a setup program and not the actual program itself (in most cases, it's only a setup program). Here's why:

The way most setup programs work is they are a "package" for the program and its associated files. It installs the program and files to where they belong then it just sits there. Taking up space. Once the installation procedure is over, you no longer need the program.

HOWEVER - Make sure that if something happens to your computer you will be able to re-download the software and re-install it all over again. If there is any question about the future availability of the software, it may be a better idea to save the file to a floppy disk, zip disk, or CD-R.

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Tech Toon

FAIRY TALES FOR THE NEW MILLENNIUM ...



GIASBERGEN

Star Tech Quiz

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Check the box beside the correct answer

- Which of the following will connect you to the Internet?
 - A commercial online service
 - A network connection
 - An Internet service provider
 - All of the above
- What type of network methodology allows the computers to act as both workstations and servers?
 - Client/Server
 - Switched Network
 - Peer-to-Node
 - Peer-to-Peer
- Which layer of the OSI model does TCP, UDP and SPX use?
 - Application Layer
 - Transport Layer
 - Datalink Layer
 - Network Layer

Name: _____ Occupation: _____

Address: _____

Contact Number: _____ E-mail: _____

Last week's answers

1. FTP
2. Fiber-optic Cable
3. Router

Winners: None

Please fill this up and send your answers to Star Tech Quiz, The Daily Star, 19 Karwan Bazaar, Dhaka 1215 by April 14, 2003.

Marine Tech

Super squid surfaces in Antarctic

BBC ONLINE

A colossal squid has been caught in Antarctic waters, the first example of *Mesonychoteuthis hamiltoni* retrieved virtually intact from the surface of the ocean.

"All we knew prior to this specimen coming through was that this animal lived in the abyssal environment down in Antarctica," New Zealand squid expert and senior research fellow at Auckland University of Technology, Dr Steve O'Shea, told BBC News Online.

"Now we know that it is moving right through the water column, right up to the very surface and it grows to a spectacular size."

Mesonychoteuthis hamiltoni was first identified in 1925 after two arms were recovered from a sperm whale's

stomach. Lethal hooks There have only ever been six specimens of this squid recovered: five have come from the stomachs of sperm whales and the sixth was caught in a trawl net at a depth of 2,000 to 2,200 metres.

"It's been known since 1925, but no one really paid any attention to it," Dr O'Shea said.

"Now we can say that it attains a size larger than the giant squid. Giant squid is no longer the largest squid that's out there. We've got something that's even larger, and not just larger but an order of magnitude larger."

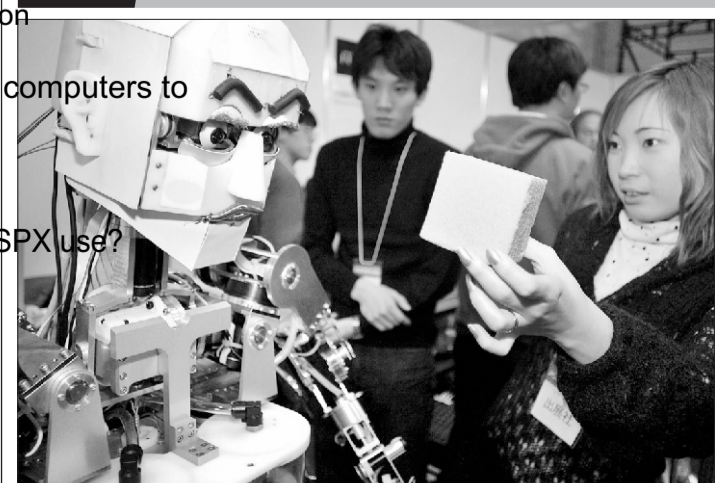
This squid has one of the largest beaks known of any squid and also has unique swivelling hooks on the clubs at the ends of its tentacles.

Bigger still This combination allows it to attack fish as large as the Patagonian toothfish and



'Colossal' squid has a powerful beak

Robo world



A face robot "WE-4R", developed by Japan's Waseda University, follows an object with its eyes and shows six patterns of facial expression, happiness, anger, surprise, disgust, sadness and fear during Japan's largest robot exhibition "Robodex 2003" in Yokohama, suburban Tokyo on April 03, 2003.



The specimen is a sub-adult

probably also attempt to maul sperm whales.

"When this animal was alive, it really has to be one of the most frightening predators out there. It's without parallel in the oceans," said Dr O'Shea, whose work is sponsored by Discovery Channel.

The specimen, which was caught in the past few weeks in the Ross Sea, has a mantle length of 2.5 metres. That is a larger mantle than any giant squid that Dr O'Shea has seen and this specimen is still immature, the NZ scientist believes.

"It's only half to two-thirds grown, so it grows up to four metres in mantle length." By comparison, the mantle of the giant squid, *Architeuthis dux*, is not known to attain more than 2.25 metres.

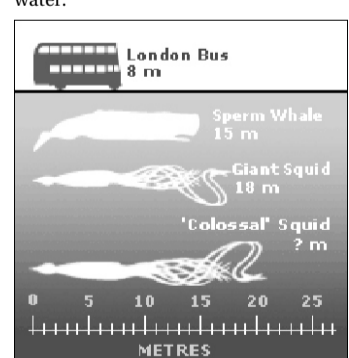
Common name The squid researchers are calling *Mesonychoteuthis hamiltoni* the "colossal squid".

"We'd like to give this animal the name colossal squid in order to have a common name for it as opposed to just

the scientific name," said Kat Bolstad, research associate at Auckland University of Technology.

"We feel that colossal conveys both the size and the aggressiveness of the animal."

"This animal, armed as it is with the hooks and the beak that it has, not only is colossal in size but is going to be a phenomenal predator and something you are not going to want to meet in the water."



Tech Snaps

Programming contest and software fair at AUB

To provide an opportunity to the students to express their IT skills, Asian University of Bangladesh (AUB) organised a two daylong programming contest and software fair on March 30 and 31 at their main campus at Uttara.

Abdus Salam Pintu, deputy minister for education inaugurated the programming contest. Prof. Dr. Abulhasan M Sadeq, vice chancellor of AUB was also present at inauguration ceremony on the first day. The software fair was jointly inaugurated by Dr. Kaykobad professor, CSE department, BUET and the editor of Computer Barta, M Motahar Hossain Forhan.

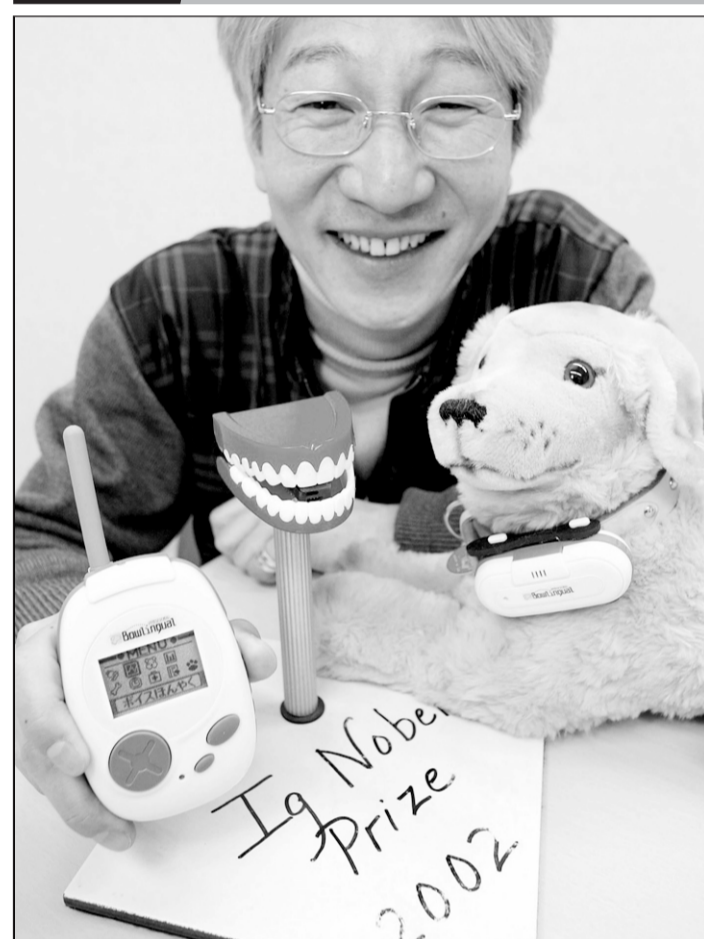
"Bangladesh is falling behind in information technology because the lack of opportunities provided to our students. But many organisations are taking this initiative in order to bring out new talents," said Abdus Salam Pintu while speaking at the ceremony.

A total of 37 teams participated at the programming contest and they were given seven problems to solve. The first prize went to 'Asian Killers' of AUB for solving four problems.

The software fair displayed many useful computerised management systems, such as: text-to-speech, security management and device controlling, secured network data transmission system and official web site of AUB. These software were inspected by Dr. Kaykobad and later on the first prize went to the team who created the text-to-speech software.

SAAD BIN FAZLE HAMMADI

Photo Tech



This photo shows Masahiko Kajita, 41, known as the Doctor Dolittle of Japan's number two toymaker, Takara, showing off the 2002 Ig Nobel Peace Prize (C) awarded from a US-based science humor magazine at the company's headquarters in Tokyo on March 13 along with his invention of the smash hit dog-language electronic interpreter 'Bowlingual'.

Best 10 Websites

- Stonewall Kitchen**
Stonewall Kitchen is the premier Speciality Food manufacturer, producing jams, marmalades, chutney, mustard, grille sauces and dessert topping.
URL: <http://www.stonewallkitchen.com>
- The New Braunfels Smokehouse**
The New Braunfels Smokehouse is a half-century-old popular for everyone around as well as travelers from around the world...
URL: <http://www.nbsmokehouse.com>
- Lobster Gram**
The #1 Live Lobster Gift Delivery Company
URL: <http://www.livelob.com>
- Cooking.com**
The premier online source for people who cook.
URL: <http://www.cooking.com>
- foodtv.com**
With this new site you can do recipe searches, view technique videos, look up terms in the culinary encyclopaedia, get personalised wine recommendations and much more.
URL: <http://www.foodtv.com>
- Fulton Street**
Gourmet Seafood delivered from the Internet to your home!
URL: <http://www.fultonstreet.com>
- hickoryfarms.com**
Gourmet food and Gifts for all occasions.
URL: <http://www.hickoryfarms.com>
- omahasteaks.com**
Purveyor of steaks and other frozen gourmet foods.
URL: <http://www.omahasteaks.com>
- The Sweet Lobster Co.**
Very popular retailer of delicious North Atlantic lobster. Appealing web site!
URL: <http://www.sweetlobster.com>
- A.G. Ferrari Foods**
A.G. Ferrari Foods are committed to using only the best ingredients and cooking with them just like the artigiani back in Italy.
URL: <http://www.agferrari.com>

Tech Jobs

- Australasia Institute of Business and Technology**
Post: System Engineer
Last Date: April 30, 2003
- Jamuna Group**
Post: Computer Engineer /Programmer
Last Date: April 14, 2003
- Desh Group**
Post: Assistant Manager (IT & MIS)
Last Date: April 15, 2003
- Grameenphone**
Post: System Engineer, NNMC/OMC
Last Date: April 10, 2003
- Net Access Bangladesh**
Post: Web Designer
Last Date: April 12, 2003
- Onirban**
Post: VB 6.0/ASP Programmer and MS SQL Database Programmer
Last Date: April 15, 2003
- www.bdservers.com**
Post: System Admin
Last Date: April 15, 2003
- Ranks ITT Ltd. (a member of Rangs Group)**
Post: Marketing Executive (Software)
Last Date: April 29, 2003
- BSM Limited**
Post: MCSE, MCSD and MCDBA Faculty fulltime or part-time
Last Date: April 25, 2003
source: www.bdjobs.com