

Tech View

Wireless environment -- an untapped avenue



SAYEEDUR RAHMAN

TELECOMMUNICATIONS has not been on the Bangladesh government's priority list for some time. Available resources are directed at other more basic infrastructure requirements. However, there are signs that those in the planning commissions are increasingly motivated to support telecommunications as they view this as a necessity rather than a luxury.

Growth in Bangladesh's mobile telephone sector, from a humble beginning in the early

1990s, has really picked up pace in the past few years, aided by higher subscriber volumes, lower tariffs and falling handset prices. In this report the development of the mobile market in Bangladesh is examined. Bangladesh had more than 1.5 million subscribers by mid-2003. This represented an annual growth of 100% over the previous year. Analysts predict that the market will continue to grow strongly, moving at a compounded annual rate of more than 75%. Bangladesh is a market now for 13 million mobile phones. There is

tremendous potential for wireless internet in Bangladesh as Bangladesh telephony infrastructure is relatively poor. Pacific Bangladesh Telecom Limited (CityCell) has consistently set the benchmark for the telecoms industry in Bangladesh. It was the first to launch mobile phone in the sub-continent, first-ever private wireless network in Bangladesh, first to adopt CDMA technology in the sub-continent. At the inception of mobile phone in Bangladesh in early 1990s it used to cost \$1,500 to get a mobile connection, the cost has

now come down to \$100, while the lowest per minute tariff is about .01 cents. In November 1996, licences for cellular mobile telephone were issued to GrameenPhone, Telecom Malaysia International BD Ltd. and Sheba Telecom Ltd. All these are joint venture between Bangladeshi companies and their foreign partners. The state telephone monopoly Bangladesh Telegraph and Telephone Board (BTTB) now operates 800,000 fixed line phones and in the next five years the demand for fixed line phones will be 3.5 million, experts believe the BTTB will be unable to meet. Recently, the use of wireless networks, and in particular wi-fi, has drawn a lot of attention as a relatively low-cost way of getting fast network access to rural areas and less-developed country like Bangladesh. Wi-fi is not the only wireless networking technology, of course. Packet radio, microwave links and even 3G phone networks could all do a similar job. But wi-fi is the latest cool thing and -- not entirely coincidentally -- a growing number of companies and market analysts have started touting it as the next big thing, the focus for a second-generation internet-style boom. Learn Foundation, a Sylhet-based non-profit charity set up in 1997, has worked to reach computers and the internet to isolated rural areas of Bangladesh, using wireless technology. The Foundation has already built seven radio towers in seven

villages in the region and aims to establish a broadband network in a 2,500 square kilometre (965 square mile) area. GrameenPhone launched Wireless Application Protocol (WAP) service and Short Message Service on July 1, 2001. Anyone can send short message to GrameenPhone via the web. Try <http://www.icq.com/> or <http://203.76.110.210:8181/vas/webSMS/login.xml> for City Cell, where two leading dailies provides SMS news alerts. GrameenPhone ladies provide villagers with a vital link to services such as hospitals and to relatives both at home and abroad, in a country with the lowest number of phones in South Asia. Villagers flock to Village Phone ladies to use a mobile to call relatives, friends or business associates, paying for calls by the minute. The Grameen scheme has been hailed as a successful example of introducing technology to the poor. The mobile technology has literally changed many village phone ladies' life. At present, 32,000 village phones are at work in 52 districts and 50,000 Bangladeshi women are making a living as GrameenPhone Ladies, as they are known. And so emerged Bangladesh's 'telephone ladies,' who gained social importance and income from selling wireless service to fellow villagers. The women, who power their phones with solar panels, now

make \$500 a month, about the same amount as earned by the typical CEO of a Bangladeshi bank and a lot more than a Bangladeshi's average annual income of \$380. As for the villagers there is no more traveling to the city to make phone calls. There are few local companies engaged in hardware/software development for wireless devices and networks. Recently, few universities took initiatives to teach courses in wireless media. As Bangladesh telephony infrastructure is relatively poor, mobile phone is creating huge impact especially among poor people in the village; a good example is Village Phone and Farmers. Rural areas are greatly benefiting from Mobile phone in Bangladesh. In the early 1990s, when Iqbal Quadir, who conceived the idea of launching a mobile phone network in Bangladesh, was looking for investors to back his idea. Quadir said initially he was turned down by an executive of a cellphone company in New York who told him, "We're not the Red Cross." At the end of 2001, Quadir showed how Third World ventures can be profitable -- and provide a useful service -- when GrameenPhone Ltd made \$27 million in pretax profits. It notched this profit after just five years, far sooner than many First World start-ups. "We keep coming down to this

basic conundrum of the purchasing power of the poor," says Peter Reiling, president and CEO of Techno-Serve, a nonprofit organisation in Norwalk, Conn. "Iqbal Quadir seems to have found the perfect technology that's within their reach."

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Next generation image sensor

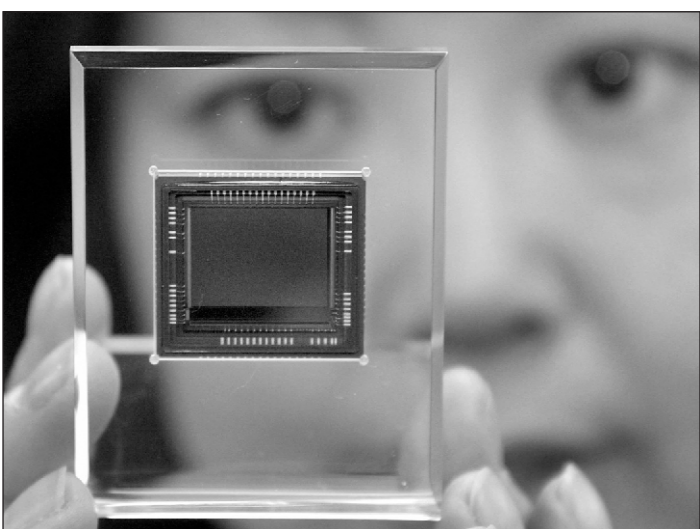


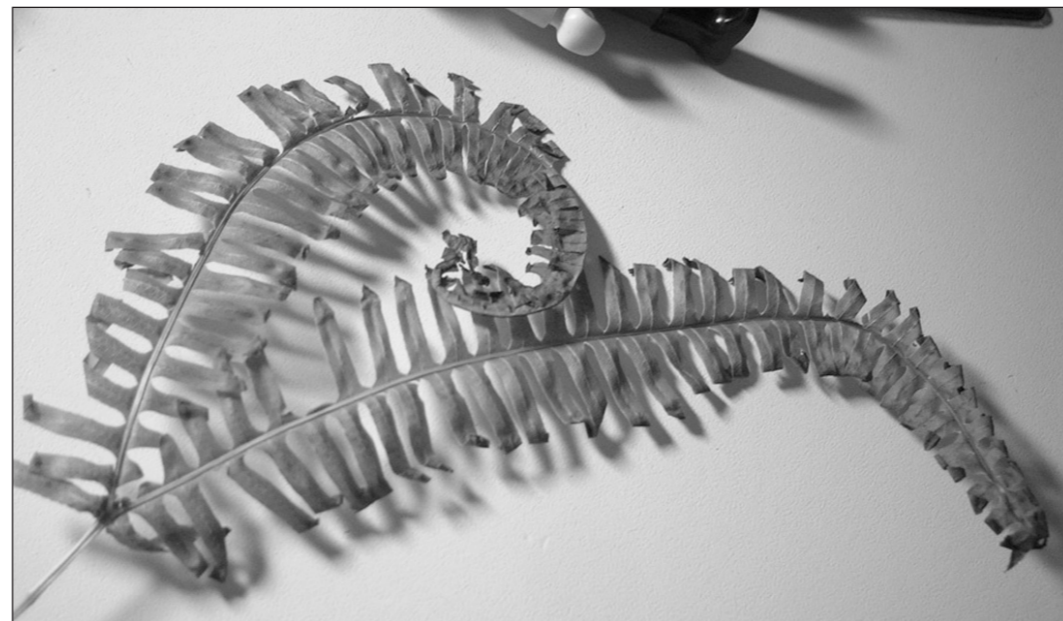
PHOTO: AFP Japan's electronics giant Matsushita Electric Industrial unveils the next generation image sensor "Maicovicon" which is the smallest pixel in the industry and low power consumption for mobile phone, digital camera and camcorder at a press preview in Tokyo on February 16. The new image sensor, achieving the 2.8 micrometer-square pixel-size, has less power consumption than the CCD and higher quality image production.

Tech Focus

Medicinal importance of Pteridophytic flora

MOMTAZ MAHAL MIRZA

PTERIDOPHYTIC flora (fern) do not produce major vegetation in Bangladesh, but still they can play an important role in the economy because some plants with their beautiful fronds (long leaves) have ornamental as well as medicinal values. They grow everywhere in the country, especially in the districts of Chittagong and Sylhet. Ecologically they are terrestrial, epiphytic, aquatic and mangroves. The medicinal values of the pteridophytes are known for more than 2000 years. Cure of diseases like malaria, typhoid, tuberculosis, bronchitis, asthma, diabetes, dysentery, diarrhoea, cough and cold, and various skin diseases may be possible using these types of plants. Medicines are prepared from their roots, stems or rhizomes, fronds and sometimes using the whole plant. Countrywide surveys by scientists of Bangladesh National Herbarium reveal the existence of about 180 species of Pteridophytic flora in Bangladesh. Of them, about 40 species are medicinally important. Some of



the very important medicinal plants are *Acrostichum aureum* (a common mangrove, locally called tiger fern); the paste from its stems is used to heal wounds), *Drynaria Quercifolia*, (an epiphyte that grows all over Bangladesh and locally called *Pankhiraj*, its

rhizom-paste mixed with oil cools the brain), *Adiantum*, (commonly called maiden hair ferns, locally called *Bidda pata*, belonging to the family *Adiantaceae*, including *Adiantum (A) caudatum*, *A. caudatum* var. *flabellatum*, *A. capillus-veneris*, *A. capillus-*

veneris var. *dissecta*, *A. capillus-veneris* var. *watti*, *A. flabellatum*, *A. peruvianum*, *A. philippense*, *A. tenerum*, *A. watti* and *A. zollingeri*). Each of the species are important for their useful medicinal values and high demand for ornamental use.

Adiantum caudatum mostly grow on damp walls and shady places all over Bangladesh. The plant is a medium-sized herb. Its fronds are used as medicine. The juice from the fronds are used to cure diabetes, cough and cold, and fever. Frond paste is used for skin disease because it has antibacterial properties. *Adiantum capillus-veneris* generally grow in the crevices of moist, shady rocks in the hilly areas. The plant is a medium-sized herb. The entire plant is medicinally important. The decoction (extract obtained from boiling) of the fronds are used in bronchitis and fever, relieves cold and pain in the stomach. Fresh juice of the whole plant mixed with sugar and honey cures irregular menstruation in women. The rhizome paste is used for antibacterial purposes. It is also prescribed for relief from different respiratory problems. *Adiantum philippense*, also called *Adiantum lunulatum*, is very common and grows all over Bangladesh. It is found mostly on damp walls, shady old building walls, by canals and riverbanks. Fronds and rhizome are used in herbal

medicine. Fresh juice of the fronds is used for the treatment of dysentery, ulcer and burning sensation. Rhizome paste is used for treatment of glandular swellings accompanied by fever. The decoction of the whole plant is also known to have antibacterial properties. Estimates of the number of species of pteridophytes are in the range of 10-12,000 (Encyclopedia of ferns and fern-allies). Compared to angiosperms, however, they are much less used both in food and traditional medicine, modern medicine and also in academic studies. Besides these known ferns and fern-allies, there are many unknown and little-known ferns and fern-allies in Bangladesh. More species await discovery and description by modern Pteridologist in the country. Hence, more attention should be given to this field, so that "our unknown pteridophytic flora become known in our search for medicinal plants and biodiversity."

Momtaz Mahal Mirza is a senior scientific officer of Bangladesh National Herbarium

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URL: <http://www.fahrenheit.com/>
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URL: <http://www.paulsmith.co.uk/>
- Hyro**
Effective "visually immersed" site navigation from this cool creative new media group.
URL: <http://www.hyro.com/>
- Franklin Lloyd Culley & Stone**
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Photo Tech

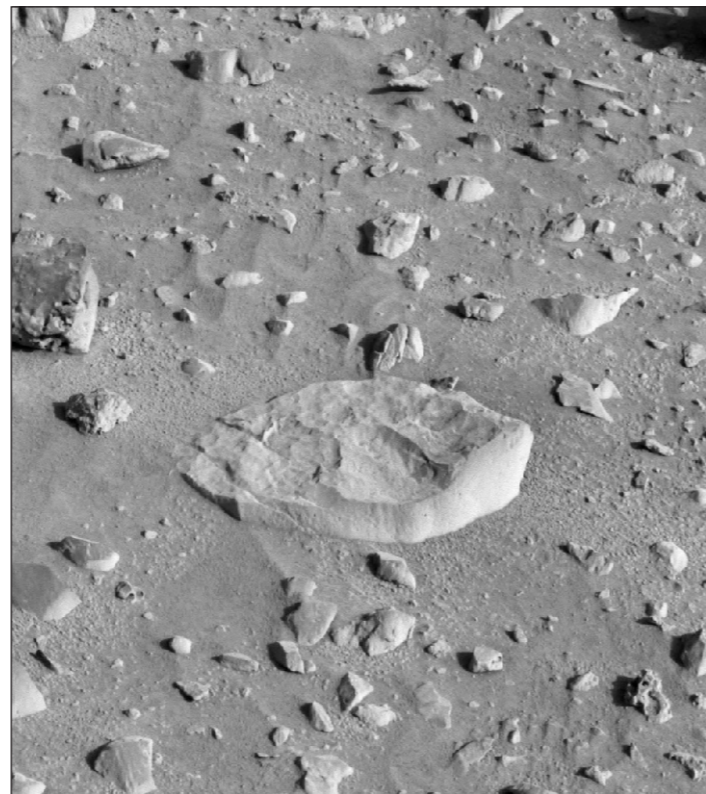


PHOTO: AFP This image captured by the Mars Exploration Rover "Spirit" released by NASA on February 15, is a composite red-green-blue image of the rock called White Boat (C). It is the first rock target that Spirit drove to after finishing a series of investigations on the rock Adirondack. White Boat stood out to scientists due to its light color and more tabular shape compared to the dark, rounded rocks that surround it.

Tech News

Rover goes for longest trip yet on Mars

AP, Los Angeles THE Spirit rover went for its longest trip yet on the surface of Mars, traveling just over 88 feet but stopping short of the distance NASA had hoped it would cover, scientists said Monday. Engineers had hoped the rover would travel 164 feet on its way to a crater known as "Bonnevillie" to examine rocks and soil for evidence that water may have existed on the Red Planet, mission manager Jim Erickson said. "Spirit, she's put some more territory behind her," Erickson said. "We're closer but not as close as we'd wanted to be." The rover didn't cover the full distance because it spent more time than initially planned studying rocks and soil along the way, he said. Spirit's longest previous distance covered in a day was 70 feet. That occurred last week. Before setting off for the crater, Spirit investigated a flaky

rock dubbed "Mimi." Scientists want to know why the rock is flaky when nearby rocks are not. Erickson said flakiness may indicate layering a possible sign the rock was formed over time instead of all at once, as may be the case with a rock spit from a volcano. Scientists revised their estimate of the distance to the "Bonnevillie" crater, saying it's about 1,150 feet from Spirit's landing place. The robot still has about 800 feet to go to reach the crater. Meanwhile, on the other side of Mars, Opportunity was digging a trench in an area called "Hematite Slope" because it is rich in the iron-bearing mineral that typically forms in water. "What we're trying to do is figure if the surface that we see is the same all the way down," Erickson said. NASA scientists hoped Opportunity would finish the trench on Monday so they could see if layering had occurred.



This image released by NASA on February 16, shows a view of Mars after NASA's Mars Exploration Rover Opportunity made its first U-Turn on February 14, after completing its longest one-day drive, about 9 meters or 30 feet. This view from the right front hazard identification camera shows the scene in front of Opportunity after the turn, with the selected location for the mission's first trenching operation now directly in front of the rover.