

Home

Magazine Archive

2001

2000

1999

1998

1997

1996

1995

Special Sites

Power 50 2001

Asiaweek 1000

Financial 500

Best Cities

Salary Survey

Best Universities

Best MBA Program

More...

Other News

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## Heroes of the Digital Divide

The Internet boom sharpened global awareness that technology can drive a wedge between those with access and those without. While the experts talk, a few people are doing something about it

By YASMIN GHAREMANI

Gaopeidian is one of those numberless dusty towns scattered across the plains of northern China. If asked, locals would say it's important because of its rail hub. Few realize that Gaopeidian is also a huge nexus for a broadband network. China Netcom, the country's third-largest telecommunications firm, has laid fiber-optic cables along the railroad tracks that intersect here as part of a \$1.2 billion plan to pipe 40 gigabytes of data traffic among 34 cities in China. But that means nothing to Gaopeidian's few thousand residents. With annual incomes that measure in the hundreds, not thousands, of dollars, they have been bypassed by the information revolution. Most don't even have telephones. "They're still living as though it was a few centuries ago," says Edward Tian, the president of China Netcom. Tian plans to change that for at least a few residents. His company will wire one local elementary school with broadband hook-ups that will let children take part in classes in Beijing or Hong Kong, using Netcom teleconferencing technology. The nonprofit project will be done by year-end. "Internet technology is fundamentally good for China," says Tian. "It changes the way of living and learning, like electricity."

There are hundreds of Gaopeidians all over Asia — and most of them don't have a patron like Tian. Only 6% of people on the planet have ever accessed the Internet; half the people in developing countries have never used a telephone. Those kinds of figures have set alarm bells ringing in the international community. The United Nations, World Bank, ASEAN, the Group of Eight leading industrialized nations, and other multilateral institutions are all mobilizing to tackle the so-called digital divide — the gap between the information haves and have-nots. The Asian-Pacific Economic Cooperation group (APEC) has pledged to triple the number of Internet users in the region to 750 million by 2005. It is a monumental task. But a handful of people already is making a difference. In the first installment of a three-part series, we profile five individuals who are meeting some of the toughest challenges of the 21st century head-on.

They've got their work cut out for them. The digital divide actually falls along old

**Digital Divide**

Here are five philanthropists helping to bridge the digital divide ([cover story](#))

**the heroes**

- [M.S. Swaminathan](#)  
A prize-winning scientist puts theory into practice
- [Lin Mui Kiang](#)  
A head-start in rural Malaysia for the next generation
- [Roger Harris](#)  
The Internet as the new jungle telegraph
- [Bernard Krisher](#)  
Telemedicine turns Cambodia into the healing fields
- [Iqbal Quadir](#)  
A Bangladesh mobile venture does well by doing good

### PROMOTION CNN HEADLINES

[Two questioned over Bali bombings](#)

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[India, Pakistan sign missile pact](#)

### IN THIS ISSUE

#### COVER STORY

[Heroes of the Digital Divide:](#)

The information revolution has left millions of Asians out of the loop. Here are five philanthropists helping to bridge the digital divide  
[Swaminathan](#) | [Lin](#) | [Harris](#) | [Krisher](#) | [Quadir](#)



#### THREE SIXTY

[The Week:](#) Team Taiwan takes on the Kuomintang — and Beijing

#### DATELINE MALAYSIA

Prime Minister Mahathir wants to rebrand UMNO as an anti-corruption, modern party. But will the new image sell?

#### INDONESIA

Illegal migrants, increased piracy — the Southeast Asian giant's woes have its smaller neighbors on tenterhooks

#### SOUTH KOREA

Striking unions are out of step in the reforming economy

#### ENTERPRISE

[Retail:](#) After an earlier ban, direct selling is back in China. American companies like Mary Kay cosmetics are sitting very pretty

#### LIFE

[Bricks:](#) A designer commune for China's new elite

[Society:](#) A comic-book hero

fault lines that have always segmented societies: gender, urban/rural and most of all, income. Those cracks are readily apparent in Asia, which has countries at every point along the development spectrum. The rifts are within nations as well. In India's celebrated software mecca of Bangalore, for instance, 85% of the population has no access to a computer.

And the gap is growing. The poorest levels of society are multiplying much faster than new technologies can reach them. Meanwhile, advances are boosting productivity in higher social strata at an ever-faster pace, making the rich even richer. With that wealth they buy more machines and get still further ahead. At this rate, more than half of all South Koreans are expected to be online by 2004, compared with less than 1% in Indonesia.

Bringing the poorer countries up to speed has become critical, not just for moral reasons but for economic ones. "Imagine if the 3 billion people who live on less than \$2 a day could come into the market, not just as consumers but as producers too — imagine how big the market would be," says Muhammad Yunus, founder of Bangladesh's Grameen Bank and numerous other companies aimed at eliminating poverty. You don't have to convince Hewlett-Packard. The U.S.-based high-tech firm has started a global effort called World e-Inclusion to bring relevant computing technologies to markets that have been ignored by most other firms. "This is not a donation program," says Lyle Hurst, worldwide director of the project. "Addressing this market makes good business sense."

There may be a political payoff too. Iqbal Quadir, who with Yunus started a mobile phone service for rural Bangladesh, says the poor are usually too marginalized to participate in politics. Raising their standard of living increases democracy; information is power. "A larger number of people having a say improves society. If the society is run by a few people, the decisions are necessarily arbitrary and pursue narrow interests."

Nevertheless, some experts see efforts to computerize the underclass — many of whom can't read — as a waste. "Do you have any idea what it's like to live on \$1 a day?" asked Microsoft chairman Bill Gates at a conference last October. "There are things people need at that level other than technology." The nonprofit organization Jubilee 2000 points out that for the price of one PC you could vaccinate 2,000 children against six killer diseases.

Certainly most slum dwellers can get by without real-time stock quotes. But that's not the idea. The aim is to spread knowledge and bring relevant information, such as medical advice, to communities through shared computers or even phones. In the Indian fishing village of Veerampatinam, weather reports downloaded from the Internet are broadcast over public loudspeakers at the beach. "Now we know when my husband should go out fishing," says Veeralakshmi, who listens to the reports before allowing her spouse to leave for work. Job opportunities, too, open up once a community is wired — and not just for the well-educated. You don't need a degree to watch a security camera for a company halfway around the world.

You do need to be connected though. And the cost of connectivity is the biggest challenge in tackling the digital divide. Setting up telephone service in rural areas costs millions of dollars. Countries that have deregulated their telecom markets have an advantage. "Nepal deregulated its market, and spurred an entire industry of Internet service providers and technicians," says Gabriel Accascina, founder of technology development consultancy IT4dev.org and former Asian coordinator for the U.N. Development Program. "Laos, Cambodia and Vietnam did not. And those countries have very little penetration of technology. What they do have is too expensive for most people to use." That may start to change. The Asian Development Bank is considering a plan to build a fiber-optic loop connecting Vietnam, Cambodia, Laos and Thailand — contingent upon those countries opening up their telecom industries. Satellites are another option for delivering data signals. But an earth station costs at least \$1,000. On top of that there are transmission costs of \$1,000-\$2,000 a month. Having multiple users helps defray those costs, but in rural areas there often aren't that many users. A telemedicine project in the remote Cambodian village of Robib only works because its founder convinced a satellite firm owned by

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More aid is in the pipeline. At the G8 summit last year in Okinawa, Japan pledged \$15 billion over five years to help alleviate the digital divide, mainly in Asia. Members are expected to approve an action plan at another summit in July. Accascina is impatient. "We've been stuck for a year with very little action but an incredible amount of talk," he says. The heroes of the digital divide aren't waiting around for the bureaucrats to act. They're too busy bringing technology to the people.

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[Back to the top](#)

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