It’s a Flat World, After All

By Thomas L. Friedman, New York Times, April 3, 2005

In 1492 Christopher Columbus set sail for India, going west. He had the Nina, the Pinta and the Santa Maria. He never did find India, but he called the people he met ''Indians'' and came home and reported to his king and queen: ''The world is round.'' I set off for India 512 years later. I knew just which direction I was going. I went east. I had Lufthansa business class, and I came home and reported only to my wife and only in a whisper: “The world is flat.”

And therein lies a tale of technology and geoeconomics that is fundamentally reshaping our lives -- much, much more quickly than many people realize. It all happened while we were sleeping, or rather while we were focused on 9/11, the dot-com bust and Enron -- which even prompted some to wonder whether globalization was over. Actually, just the opposite was true, which is why it's time to wake up and prepare ourselves for this flat world, because others already are, and there is no time to waste.

I wish I could say I saw it all coming. Alas, I encountered the flattening of the world quite by accident. It was in late February of last year, and I was visiting the Indian high-tech capital, Bangalore, working on a documentary for the Discovery Times channel about outsourcing. In short order, I interviewed Indian entrepreneurs who wanted to prepare

my taxes from Bangalore, read my X-rays from Bangalore, trace my lost luggage from Bangalore and write my new software from Bangalore. The longer I was there, the more upset I became -- upset at the realization that while I had been off covering the 9/11 wars, globalization had entered a whole new phase, and I had missed it. I guess the eureka moment came on a visit to the campus of Infosys Technologies, one of the crown jewels of the Indian outsourcing and software industry. Nandan Nilekani, the Infosys C.E.O., was showing me his global video-conference room, pointing with pride to a wall-size flat-screen TV, which he said was the biggest in Asia. Infosys, he explained, could hold a virtual meeting of the key players from its entire global supply chain for any project at any time on that supersize screen. So its American designers could be on the screen speaking with their Indian software writers and their Asian manufacturers all at once. That's what globalization is all about today, Nilekani said. Above the screen there were eight clocks that pretty well summed up the Infosys workday: 24/7/365. The clocks were labeled U.S. West, U.S. East, G.M.T., India, Singapore, Hong Kong, Japan, Australia.

"Outsourcing is just one dimension of a much more fundamental thing happening today in the world," Nilekani explained. "What happened over the last years is that there was a massive investment in technology, especially in the bubble era, when hundreds of millions of dollars were invested in putting broadband connectivity around the world, undersea cables, all those things." At the same time,

he added, computers became cheaper and dispersed all over the world, and there was an explosion of e-mail software, search engines like Google and proprietary software that can chop up any piece of work and send one part to Boston, one part to Bangalore and one part to Beijing, making it easy for anyone to do remote development. When all of these things suddenly came together around 2000, Nilekani said, they “created a platform where intellectual work, intellectual capital, could be delivered from anywhere. It could be disaggregated, delivered, distributed, produced and put back together again -- and this gave a whole new degree of freedom to the way we do work, especially work of an intellectual nature. And what you are seeing in Bangalore today is really the culmination of all these things coming together.”

At one point, summing up the implications of all this, Nilekani uttered a phrase that rang in my ear. He said to me, “Tom, the playing field is being leveled.” He meant that countries like India were now able to compete equally for global knowledge work as never before -- and that America had better get ready for this. As I left the Infosys campus that evening and bounced along the potholed road back to Bangalore, I kept chewing on that phrase: “The playing field is being leveled.”

“What Nandan is saying,” I thought, “is that the playing field is being flattened. Flattened? Flattened? My God, he's telling me the world is flat!”

Here I was in Bangalore -- more than 500 years after Columbus sailed over the horizon, looking for a shorter route to India using the rudimentary navigational technologies of his day, and returned safely to prove definitively that the world was round -- and one of India's smartest engineers, trained at his country's top technical institute and backed by the most modern technologies of his day, was telling me that the world was flat, as flat as that screen on which he can host a meeting of his whole global supply chain. Even more interesting, he was citing this development as a new milestone in human progress and a great opportunity for India and the world -- the fact that we had made our world flat!

This has been building for a long time. Globalization 1.0 (1492 to 1800) shrank the world from a size large to a size medium, and the dynamic force in that era was countries globalizing for resources and imperial conquest. Globalization 2.0 (1800 to 2000) shrank the world from a size medium to a size small, and it was spearheaded by companies globalizing for markets and labor. Globalization 3.0 (which started around 2000) is shrinking the world from a size small to a size tiny and flattening the playing field at the same time. And while the dynamic force in Globalization 1.0 was countries globalizing and the dynamic force in Globalization 2.0 was companies globalizing, the dynamic force in Globalization 3.0 -- the thing that gives it its unique character -- is individuals and small groups globalizing. Individuals must, and can, now ask: where do I fit into the global competition and

opportunities of the day, and how can I, on my own, collaborate with others globally? But Globalization 3.0 not only differs from the previous eras in how it is shrinking and flattening the world and in how it is empowering individuals. It is also different in that Globalization 1.0 and 2.0 were driven primarily by European and American companies and countries. But going forward, this will be less and less true. Globalization 3.0 is not only going to be driven more by individuals but also by a much more diverse -- non-Western, nonwhite -- group of individuals. In Globalization 3.0, you are going to see every color of the human rainbow take part.

"Today, the most profound thing to me is the fact that a 14-year-old in Romania or Bangalore or the Soviet Union or Vietnam has all the information, all the tools, all the software easily available to apply knowledge however they want," said Marc Andreessen, a co-founder of Netscape and creator of the first commercial Internet browser. "That is why I am sure the next Napster is going to come out of left field. As bioscience becomes more computational and less about wet labs and as all the genomic data becomes easily available on the Internet, at some point you will be able to design vaccines on your laptop."

Andreessen is touching on the most exciting part of Globalization 3.0 and the flattening of the world: the fact that we are now in the process of connecting all the knowledge pools in the world together. We've tasted some of the downsides of that in the way that Osama bin Laden

has connected terrorist knowledge pools together through his Qaeda network, not to mention the work of teenage hackers spinning off more and more lethal computer viruses that affect us all. But the upside is that by connecting all these knowledge pools we are on the cusp of an incredible new era of innovation, an era that will be driven from left field and right field, from West and East and from North and South. Only 30 years ago, if you had a choice of being born a B student in Boston or a genius in Bangalore or Beijing, you probably would have chosen Boston, because a genius in Beijing or Bangalore could not really take advantage of his or her talent. They could not plug and play globally. Not anymore. Not when the world is flat, and anyone with smarts, access to Google and a cheap wireless laptop can join the innovation fray.

When the world is flat, you can innovate without having to emigrate. This is going to get interesting. We are about to see creative destruction on steroids.

How did the world get flattened, and how did it happen so fast? It was a result of 10 events and forces that all came together during the 1990's and converged right around the year 2000. Let me go through them briefly. The first event was 11/9. That's right -- not 9/11, but 11/9. Nov. 9, 1989, is the day the Berlin Wall came down, which was critically important because it allowed us to think of the world as a single space. “The Berlin Wall was not only a symbol of keeping people inside Germany; it was a way of preventing a kind of global view of our future,” the Nobel Prize-

winning economist Amartya Sen said. And the wall went down just as the windows went up -- the breakthrough Microsoft Windows 3.0 operating system, which helped to flatten the playing field even more by creating a global computer interface, shipped six months after the wall fell.

The second key date was 8/9. Aug. 9, 1995, is the day Netscape went public, which did two important things. First, it brought the Internet alive by giving us the browser to display images and data stored on Web sites. Second, the Netscape stock offering triggered the dot-com boom, which triggered the dot-com bubble, which triggered the massive overinvestment of billions of dollars in fiber-optic telecommunications cable. That overinvestment, by companies like Global Crossing, resulted in the willy-nilly creation of a global undersea-underground fiber network, which in turn drove down the cost of transmitting voices, data and images to practically zero, which in turn accidentally made Boston, Bangalore and Beijing next-door neighbors overnight. In sum, what the Netscape revolution did was bring people-to-people connectivity to a whole new level. Suddenly more people could connect with more other people from more different places in more different ways than ever before.

No country accidentally benefited more from the Netscape moment than India. “India had no resources and no infrastructure,” said Dinakar Singh, one of the most respected hedge-fund managers on Wall Street, whose parents earned doctoral degrees in biochemistry from the

University of Delhi before emigrating to America. “It produced people with quality and by quantity. But many of them rotted on the docks of India like vegetables. Only a relative few could get on ships and get out. Not anymore, because we built this ocean crosser, called fiber-optic cable. For decades you had to leave India to be a professional. Now you can plug into the world from India. You don't have to go to Yale and go to work for Goldman Sachs.” India could never have afforded to pay for the bandwidth to connect brainy India with high-tech America, so American shareholders paid for it. Yes, crazy overinvestment can be good. The overinvestment in railroads turned out to be a great boon for the American economy. “But the railroad overinvestment was confined to your own country and so, too, were the benefits,” Singh said. In the case of the digital railroads, “it was the foreigners who benefited.” India got a free ride.

The first time this became apparent was when thousands of Indian engineers were enlisted to fix the Y2K -- the year 2000 -- computer bugs for companies from all over the world. (Y2K should be a national holiday in India. Call it “Indian Interdependence Day,” says Michael Mandelbaum, a foreign-policy analyst at Johns Hopkins.) The fact that the Y2K work could be outsourced to Indians was made possible by the first two flatteners, along with a third, which I call “workflow.” Workflow is shorthand for all the software applications, standards and electronic transmission pipes, like middleware, that connected all those computers and fiber-optic cable. To put it another way, if the Netscape

moment connected people to people like never before, what the workflow revolution did was connect applications to applications so that people all over the world could work together in manipulating and shaping words, data and images on computers like never before.

Indeed, this breakthrough in people-to-people and application-to-application connectivity produced, in short order, six more flatteners -- six new ways in which individuals and companies could collaborate on work and share knowledge. One was “outsourcing.” When my software applications could connect seamlessly with all of your applications, it meant that all kinds of work -- from accounting to software-writing -- could be digitized, disaggregated and shifted to any place in the world where it could be done better and cheaper. The second was “offshoring.” I send my whole factory from Canton, Ohio, to Canton, China. The third was “open-sourcing.” I write the next operating system, Linux, using engineers collaborating together online and working for free. The fourth was “insourcing.” I let a company like UPS come inside my company and take over my whole logistics operation -- everything from filling my orders online to delivering my goods to repairing them for customers when they break. (People have no idea what UPS really does today. You'd be amazed!). The fifth was “supply-chaining.” This is Wal-Mart's specialty. I create a global supply chain down to the last atom of efficiency so that if I sell an item in Arkansas, another is immediately made in China. (If Wal-Mart were a country, it would be China's eighth-largest trading partner.)

The last new form of collaboration I call “informing” -- this is Google, Yahoo and MSN Search, which now allow anyone to collaborate with, and mine, unlimited data all by themselves.

So the first three flatteners created the new platform for collaboration, and the next six are the new forms of collaboration that flattened the world even more. The 10th flattener I call “the steroids,” and these are wireless access and voice over Internet protocol (VoIP). What the steroids do is turbocharge all these new forms of collaboration, so you can now do any one of them, from anywhere, with any device.