

ALSO BY THOMAS L. FRIEDMAN

From Beirut to Jerusalem (1989)

The Lexus and the Olive Tree (1999)

Longitudes and Attitudes (2002)

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THE WORLD IS FLAT

*A Brief History of
the Twenty-first Century*

ONE

While I Was Sleeping

Your Highnesses, as Catholic Christians, and princes who love and promote the holy Christian faith, and are enemies of the doctrine of Mahomet, and of all idolatry and heresy, determined to send me, Christopher Columbus, to the above-mentioned countries of India, to see the said princes, people, and territories, and to learn their disposition and the proper method of converting them to our holy faith; and furthermore directed that I should not proceed by land to the East, as is customary, but by a Westerly route, in which direction we have hitherto no certain evidence that anyone has gone.

—Entry from the journal of Christopher Columbus on his voyage of 1492

NO one ever gave me directions like this on a golf course before: “Aim at either Microsoft or IBM.” I was standing on the first tee at the KGA Golf Club in downtown Bangalore, in southern India, when my playing partner pointed at two shiny glass-and-steel buildings off in the distance, just behind the first green. The Goldman Sachs building wasn’t done yet; otherwise he could have pointed that out as well and made it a threesome. HP and Texas Instruments had their offices on the back nine, along the tenth hole. That wasn’t all. The tee markers were from Epson, the printer company, and one of our caddies was wearing a hat from 3M. Outside, some of the traffic signs were also sponsored by Texas Instruments, and the Pizza Hut billboard on the way over showed a steaming pizza, under the headline “Gigabites of Taste!”

No, this definitely wasn't Kansas. It didn't even seem like India. Was this the New World, the Old World, or the Next World?

I had come to Bangalore, India's Silicon Valley, on my own Columbus-like journey of exploration. Columbus sailed with the *Niña*, the *Pinta*, and the *Santa María* in an effort to discover a shorter, more direct route to India by heading west, across the Atlantic, on what he presumed to be an open sea route to the East Indies—rather than going south and east around Africa, as Portuguese explorers of his day were trying to do. India and the magical Spice Islands of the East were famed at the time for their gold, pearls, gems, and silk—a source of untold riches. Finding this shortcut by sea to India, at a time when the Muslim powers of the day had blocked the overland routes from Europe, was a way for both Columbus and the Spanish monarchy to become wealthy and powerful. When Columbus set sail, he apparently assumed the Earth was round, which was why he was convinced that he could get to India by going west. He miscalculated the distance, though. He thought the Earth was a smaller sphere than it is. He also did not anticipate running into a landmass before he reached the East Indies. Nevertheless, he called the aboriginal peoples he encountered in the new world “Indians.” Returning home, though, Columbus was able to tell his patrons, King Ferdinand and Queen Isabella, that although he never did find India, he could confirm that the world was indeed round.

I set out for India by going due east, via Frankfurt. I had Luftansa business class. I knew exactly which direction I was going thanks to the GPS map displayed on the screen that popped out of the armrest of my airline seat. I landed safely and on schedule. I too encountered people called Indians. I too was searching for the source of India's riches. Columbus was searching for hardware—precious metals, silk, and spices—the source of wealth in his day. I was searching for software, brainpower, complex algorithms, knowledge workers, call centers, transmission protocols, breakthroughs in optical engineering—the sources of wealth in our day. Columbus was happy to make the Indians he met his slaves, a pool of free manual labor.

I just wanted to understand why the Indians I met were taking out

of service and information technology work from America and other industrialized countries. Columbus had more than one hundred men on his three ships; I had a small crew from the Discovery Times channel that fit comfortably into two banged-up vans, with Indian drivers who drove barefoot. When I set sail, so to speak, I too assumed that the world was round, but what I encountered in the real India profoundly shook my faith in that notion. Columbus accidentally ran into America but thought he had discovered part of India. I actually found India and thought many of the people I met there were Americans. Some had actually taken American names, and others were doing great imitations of American accents at call centers and American business techniques at software labs.

Columbus reported to his king and queen that the world was round, and he went down in history as the man who first made this discovery. I returned home and shared my discovery only with my wife, and only in a whisper.

“Honey,” I confided, “I think the world is flat.”

How did I come to this conclusion? I guess you could say it all started in Nandan Nilekani's conference room at Infosys Technologies Limited. Infosys is one of the jewels of the Indian information technology world, and Nilekani, the company's CEO, is one of the most thoughtful and respected captains of Indian industry. I drove with the Discovery Times crew out to the Infosys campus, about forty minutes from the heart of Bangalore, to tour the facility and interview Nilekani. The Infosys campus is reached by a pockmarked road, with sacred cows, horse-drawn carts, and motorized rickshaws all jostling alongside our vans. Once you enter the gates of Infosys, though, you are in a different world. A massive resort-size swimming pool nestles amid boulders and manicured lawns, adjacent to a huge putting green. There are multiple restaurants and a fabulous health club. Glass-and-steel buildings seem to sprout up like weeds each week. In some of those buildings, Infosys employees are writing specific software programs for American or European companies; in others, they are running the back rooms of major

American- and European-based multinationals—everything from computer maintenance to specific research projects to answering customer calls routed there from all over the world. Security is tight, cameras monitor the doors, and if you are working for American Express, you cannot get into the building that is managing services and research for General Electric. Young Indian engineers, men and women, walk briskly from building to building, dangling ID badges. One looked like he could do my taxes. Another looked like she could take my computer apart. And a third looked like she designed it!

After sitting for an interview, Nilekani gave our TV crew a tour of Infosys's global conferencing center—ground zero of the Indian outsourcing industry. It was a cavernous wood-paneled room that looked like a tiered classroom from an Ivy League law school. On one end was a massive wall-size screen and overhead there were cameras in the ceiling for teleconferencing. "So this is our conference room, probably the largest screen in Asia—this is forty digital screens [put together]," Nilekani explained proudly, pointing to the biggest flat-screen TV I had ever seen. Infosys, he said, can hold a virtual meeting of the key players from its entire global supply chain for any project at any time on that supesize screen. So their American designers could be on the screen speaking with their Indian software writers and their Asian manufacturers all at once. "We could be sitting here, somebody from New York, London, Boston, San Francisco, all live. And maybe the implementation is in Singapore, so the Singapore person could also be live here . . . That's globalization," said Nilekani. Above the screen there were eight clocks that pretty well summed up the Infosys workday: 24/7/365. The clocks were labeled US West, US East, GMT, 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 [few] 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

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, added Nilekani, 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."

We were sitting on the couch outside of Nilekani's office, waiting for the TV crew to set up its cameras. 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 are now able to compete for global knowledge work as never before—and that America had better get ready for this. America was going to be challenged, but, he insisted, the challenge would be good for America because we are always at our best when we are being challenged. As I left the Infosys campus that evening and bounced along the 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 five hundred years after Columbus sailed over the horizon, 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 essentially 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 good thing, 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!

In the back of that van, I scribbled down four words in my notebook:

underlying message of everything that I had seen and heard in Bangalore in two weeks of filming. The global competitive playing field was being leveled. The world was being flattened.

As I came to this realization, I was filled with both excitement and dread. The journalist in me was excited at having found a framework to better understand the morning headlines and to explain what was happening in the world today. Clearly, it is now possible for more people than ever to collaborate and compete in real time with more other people on more different kinds of work from more different corners of the planet and on a more equal footing than at any previous time in the history of the world—using computers, e-mail, networks, teleconferencing, and dynamic new software. That is what Nandan was telling me. That was what I discovered on my journey to India and beyond. And that is what this book is about. When you start to think of the world as flat, a lot of things make sense in ways they did not before. But I was also excited personally, because what the flattening of the world means is that we are now connecting all the knowledge centers on the planet together into a single global network, which—if politics and terrorism do not get in the way—could usher in an amazing era of prosperity and innovation.

But contemplating the flat world also left me filled with dread, professional and personal. My personal dread derived from the obvious fact that it's not only the software writers and computer geeks who get empowered to collaborate on work in a flat world. It's also al-Qaeda and other terrorist networks. The playing field is not being leveled only in ways that draw in and superempower a whole new group of innovators. It's being leveled in a way that draws in and superempowers a whole new group of angry, frustrated, and humiliated men and women.

Professionally, the recognition that the world was flat was unnerving because I realized that this flattening had been taking place while I was sleeping, and I had missed it. I wasn't really sleeping, but I was otherwise engaged. Before 9/11, I was focused on tracking globalization and exploring the tension between the "Lexus" forces of economic integration and the "Olive Tree" forces of identity and nationalism—hence my 1999 book, *The Lexus and the Olive Tree*. But after 9/11, the olive tree was became all-

consuming for me. I spent almost all my time traveling in the Arab and Muslim worlds. During those years I lost the trail of globalization.

I found that trail again on my journey to Bangalore in February 2004. Once I did, I realized that something really important had happened while I was fixated on the olive groves of Kabul and Baghdad. Globalization had gone to a whole new level. If you put *The Lexus and the Olive Tree* and this book together, the broad historical argument you end up with is that there have been three great eras of globalization. The first lasted from 1492—when Columbus set sail, opening trade between the Old World and the New World—until around 1800. I would call this era Globalization 1.0. It shrank the world from a size large to a size medium. Globalization 1.0 was about countries and muscles. That is, in Globalization 1.0 the key agent of change, the dynamic force driving the process of global integration was how much brawn—how much muscle, how much horsepower, wind power, or, later, steam power—your country had and how creatively you could deploy it. In this era, countries and governments (often inspired by religion or imperialism or a combination of both) led the way in breaking down walls and knitting the world together, driving global integration. In Globalization 1.0, the primary questions were: Where does my country fit into global competition and opportunities? How can I go global and collaborate with others through my country?

The second great era, Globalization 2.0, lasted roughly from 1800 to 2000, interrupted by the Great Depression and World Wars I and II. This era shrank the world from a size medium to a size small. In Globalization 2.0, the key agent of change, the dynamic force driving global integration, was multinational companies. These multinationals went global for markets and labor, spearheaded first by the expansion of the Dutch and English joint-stock companies and the Industrial Revolution. In the first half of this era, global integration was powered by falling transportation costs, thanks to the steam engine and the railroad, and in the second half by falling telecommunication costs—thanks to the diffusion of the telegraph, telephones, the PC, satellites, fiber-optic cable, and the early version of the World Wide Web. It was during this era that we really saw the

birth and maturation of a global economy, in the sense that there was enough movement of goods and information from continent to continent for there to be a global market, with global arbitrage in products and labor. The dynamic forces behind this era of globalization were breakthroughs in hardware—from steamships and railroads in the beginning to telephones and mainframe computers toward the end. And the big questions in this era were: Where does my company fit into the global economy? How does it take advantage of the opportunities? How can I go global and collaborate with others through my company? *The Lexus and the Olive Tree* was primarily about the climax of this era, an era when the walls started falling all around the world, and integration, and the backlash to it, went to a whole new level. But even as the walls fell, there were still a lot of barriers to seamless global integration. Remember, when Bill Clinton was elected president in 1992, virtually no one outside of government and the academy had e-mail, and when I was writing *The Lexus and the Olive Tree* in 1998, the Internet and e-commerce were just taking off.

Well, they took off—along with a lot of other things that came together while I was sleeping. And that is why I argue in this book that around the year 2000 we entered a whole new era: Globalization 3.0. Globalization 3.0 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 the newfound power for *individuals* to collaborate and compete globally. And the lever that is enabling individuals and groups to go global so easily and so seamlessly is not horsepower, and not hardware, but software—all sorts of new applications—in conjunction with the creation of a global fiber-optic network that has made us all next-door neighbors. 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 indi-

viduals. It is different in that Globalization 1.0 and 2.0 were driven primarily by European and American individuals and businesses. Even though China actually had the biggest economy in the world in the eighteenth century, it was Western countries, companies, and explorers who were doing most of the globalizing and shaping of the system. But going forward, this will be less and less true. Because it is flattening and shrinking the world, Globalization 3.0 is going to be more and more driven not only by individuals but also by a much more diverse—non-Western, non-white—group of individuals. Individuals from every corner of the flat world are being empowered. Globalization 3.0 makes it possible for so many more people to plug and play, and you are going to see every color of the human rainbow take part.

(While this empowerment of individuals to act globally is the most important new feature of Globalization 3.0, companies—large and small—have been newly empowered in this era as well. I discuss both in detail later in the book.)

Needless to say, I had only the vaguest appreciation of all this as I left Nandan's office that day in Bangalore. But as I sat contemplating these changes on the balcony of my hotel room that evening, I did know one thing: I wanted to drop everything and write a book that would enable me to understand how this flattening process happened and what its implications might be for countries, companies, and individuals. So I picked up the phone and called my wife, Ann, and told her, "I am going to write a book called *The World Is Flat*." She was both amused and curious—well, maybe *more* amused than curious! Eventually, I was able to bring her around, and I hope I will be able to do the same with you, dear reader. Let me start by taking you back to the beginning of my journey to India, and other points east, and share with you some of the encounters that led me to conclude the world was no longer round—but flat.

Faithbith "Jerry" Rao was one of the first people I met in Bangalore—and I hadn't been with him for more than a few minutes at the Leela Palace hotel before he told me that he could handle my tax returns and any other accounting needs I had—from Bangalore. No thanks, I de-

mured, I already have an accountant in Chicago. Jerry just smiled. He was too polite to say it—that he may already be my accountant, or rather my accountant's accountant, thanks to the explosion in the outsourcing of tax preparation.

"This is happening as we speak," said Rao, a native of Mumbai, formerly Bombay, whose Indian firm, MphasIS, has a team of Indian accountants able to do outsourced accounting work from any state in America and the federal government. "We have tied up with several small and medium-sized CPA firms in America."

"You mean like my accountant?" I asked. "Yes, like your accountant," said Rao with a smile. Rao's company has pioneered a work flow software program with a standardized format that makes the outsourcing of tax returns cheap and easy. The whole process starts, Jerry explained, with an accountant in the United States scanning my last year's tax returns, plus my W-2, W-4, 1099, bonuses, and stock statements—everything—into a computer server, which is physically located in California or Texas. "Now your accountant, if he is going to have your taxes done overseas, knows that you would prefer not to have your surname be known or your Social Security number known [to someone outside the country], so he can choose to suppress that information," said Rao. "The accountants in India call up all the raw information directly from the server in America [using a password], and they complete your tax returns, with you remaining anonymous. All the data stays in the U.S. to comply with privacy regulations . . . We take data protection and privacy very seriously. The accountant in India can see the data on his screen, but he cannot take a download of it or print it out—our program does not allow it. The most he could do would be to try to memorize it, if he had some ill intention. The accountants are not allowed to even take a paper and pen into the room when they are working on the returns."

I was intrigued at just how advanced this form of service outsourcing had become. "We are doing several thousand returns," said Rao. What's more, "Your CPA in America need not even be in their office. They can be sitting on a beach in California and e-mail us and say, 'Jerry, you are really good at doing New York State returns, so you do Tom's returns."

returns.' Sonia, by the way, is working out of her house in India, with no overhead [for the company to pay]. And these others, they are really complicated, so I will do them myself."

In 2003, some 25,000 U.S. tax returns were done in India. In 2004, the number was 100,000. In 2005, it is expected to be 400,000. In a decade, you will assume that your accountant has outsourced the basic preparation of your tax returns—if not more.

"How did you get into this?" I asked Rao.

"My friend Jeroen Tas, a Dutchman, and I were both working in California for Citigroup," Rao explained. "I was his boss and we were coming back from New York one day together on a flight and I said that I was planning to quit and he said, 'So am I.' We both said, 'Why don't we start our own business?' So in 1997-98, we put together a business plan to provide high-end Internet solutions for big companies . . . Two years ago, though, I went to a technology convention in Las Vegas and was approached by some medium-size [American] accounting firms, and they said they could not afford to set up big tax outsourcing operations to India, but the big guys could, and [the medium guys] wanted to get ahead of them. So we developed a software product called VTR—Virtual Tax Room—to enable these medium-size accounting firms to easily outsource tax returns."

These midsize firms "are getting a more level playing field, which they were denied before," said Jerry. "Suddenly they can get access to the same advantages of scale that the bigger guys always had."

Is the message to Americans, "Mama, don't let your kids grow up to be accountants"? I asked.

Not really, said Rao. "What we have done is taken the grunt work. You know what is needed to prepare a tax return? Very little creative work. This is what will move overseas."

"What will stay in America?" I asked.

"The accountant who wants to stay in business in America will be the one who focuses on designing creative complex strategies, like tax avoidance or tax sheltering, managing customer relationships," he said. "He or she will say to his clients, 'I am getting the grunt work done efficiently far

going to do about your kids. Do you want to leave some money in your trusts? It means having the quality-time discussions with clients rather than running around like chickens with their heads cut off from February to April, and often filing for extensions into August, because they have not had the quality time with clients."

Judging from an essay in the journal *Accounting Today* (June 7, 2004), this does, indeed, seem to be the future. L. Gary Boomer, a CPA and CEO of Boomer Consulting in Manhattan, Kansas, wrote, "This past [tax] season produced over 100,000 [outsourced] returns and has now expanded beyond individual returns to trusts, partnerships and corporations . . . The primary reason that the industry has been able to scale up as rapidly as it has over the past three years is due to the investment that these [foreign-based] companies have made in systems, processes and training." There are about seventy thousand accounting grads in India each year, he added, many of whom go to work for local Indian firms starting at \$100 a month. With the help of high-speed communications, stringent training, and standardized forms, these young Indians can fairly rapidly be converted into basic Western accountants at a fraction of the cost. Some of the Indian accounting firms even go about marketing themselves to American firms through teleconferencing and skip the travel. Concluded Boomer, "The accounting profession is currently in transformation. Those who get caught in the past and resist change will be forced deeper into commoditization. Those who can create value through leadership, relationships and creativity will transform the industry, as well as strengthen relationships with their existing clients."

What you're telling me, I said to Rao, is that no matter what your profession—doctor, lawyer, architect, accountant—if you are an American, you better be good at the touchy-feely service stuff, because anything that can be digitized can be outsourced to either the smartest or the cheapest producer, or both. Rao answered, "Everyone has to focus on what exactly is their value-add."

But what if I am just an average accountant? I went to a state university. I had a B+ average. Eventually I got my CPA. I work in a big accounting firm, doing a lot of standard work. I rarely meet with clients.

They keep me in the back. But it is a decent living and the firm is basically happy with me. What is going to happen to me in this system?

"It is a good question," said Rao. "We must be honest about it. We are in the middle of a big technological change, and when you live in a society that is at the cutting edge of that change [like America], it is hard to predict. It's easy to predict for someone living in India. In ten years we are going to be doing a lot of the stuff that is being done in America today. We can predict our future. But we are behind you. You are defining the future. America is always on the edge of the next creative wave . . . So it is difficult to look into the eyes of that accountant and say this is what is going to be. We should not trivialize that. We must deal with it and talk about it honestly . . . Any activity where we can digitize and decompose the value chain, and move the work around, will get moved around. Some people will say, 'Yes, but you can't serve me a steak.' True, but I can take the reservation for your table sitting anywhere in the world, if the restaurant does not have an operator. We can say, 'Yes, Mr. Friedman, we can give you a table by the window.' In other words, there are parts of the whole dining-out experience that we can decompose and outsource. If you go back and read the basic economics textbooks, they will tell you: Goods are traded, but services are consumed and produced in the same place. And you cannot export a haircut. But we are coming close to exporting a haircut, the appointment part. What kind of haircut do you want? Which barber do you want? All those things can and will be done by a call center far away."

As we ended our conversation, I asked Rao what he is up to next. He was full of energy. He told me he'd been talking to an Israeli company that is making some big advances in compression technology to allow for easier, better transfers of CAT scans via the Internet so you can quickly get a second opinion from a doctor half a world away.

A few weeks after I spoke with Rao, the following e-mail arrived from Bill Brody, the president of Johns Hopkins University, whom I had just interviewed for this book:

Dear Tom, I am speaking at a Hopkins continuing education medical meeting for radiologists (I used to be a radiologist) . . . I

came upon a very fascinating situation that I thought might interest you. I have just learned that in many small and some medium-size hospitals in the US, radiologists are outsourcing reading of CAT scans to doctors in India and Australia!! Most of this evidently occurs at night (and maybe weekends) when the radiologists do not have sufficient staffing to provide in-hospital coverage. While some radiology groups will use teleradiology to ship images from the hospital to their home (or to Vail or Cape Cod, I suppose) so that they can interpret images and provide a diagnosis 24/7, apparently the smaller hospitals are shipping CAT scan images to radiologists abroad. The advantage is that it is daytime in Australia or India when it is nighttime here—so after-hours coverage becomes more readily done by shipping the images across the globe. Since CAT (and MRI) images are already in digital format and available on a network with a standardized protocol, it is no problem to view the images anywhere in the world... I assume that the radiologists on the other end... must have trained in [the] US and acquired the appropriate licenses and credentials... The groups abroad that provide these after-hours readings are called "Nighthawks" by the American radiologists that employ them.

Best,
Bill

Thank goodness I'm a journalist and not an accountant or a radiologist. There will be no outsourcing for me—even if some of my readers wish my column could be shipped off to North Korea. At least that's what I thought. Then I heard about the Reuters operation in India. I didn't have time to visit the Reuters office in Bangalore, but I was able to get hold of Tom Glocer, the CEO of Reuters, to hear what he was doing. Glocer is a pioneer in the outsourcing of elements of the news supply chain.

With 2,300 journalists around the world, in 197 bureaus, serving a

market including investment bankers, derivatives traders, stockbrokers, newspapers, radio, television, and Internet outlets, Reuters has always had a very complex audience to satisfy. After the dot-com bust, though, when many of its customers became very cost-conscious, Reuters started asking itself, for reasons of both cost and efficiency: Where do we actually need our people to be located to feed our global news supply chain? And can we actually disaggregate the work of a journalist and keep part in London and New York and shift part to India?

Glocer started by looking at the most basic bread-and-butter function Reuters provides, which is breaking news about company earnings and related business developments, every second of every day. "Exxon comes out with its earnings and we need to get that as fast possible up on screens around the world: 'Exxon earned thirty-nine cents this quarter as opposed to thirty-six cents last quarter.' The core competency there is speed and accuracy," explained Glocer. "You don't need a lot of analysis. We just need to get the basic news up as fast as possible. The flash should be out in seconds after the company releases, and the table [showing the recent history of quarterly earnings] a few seconds later."

Those sorts of earnings flashes are to the news business what vanilla is to the ice cream business—a basic commodity that actually can be made anywhere in the flat world. The real value-added knowledge work happens in the next five minutes. That is when you need a real journalist who knows how to get a comment from the company, a comment from the top two analysts in the field, and even some word from competitors to put the earnings report in perspective. "That needs a higher journalistic skill set—someone in the market with contacts, who knows who the best industry analysts are and has taken the right people to lunch," said Glocer.

The dot-com bust and the flattening of the world forced Glocer to re-think how Reuters delivered news—whether it could disaggregate the functions of a journalist and ship the low-value-added functions to India. His primary goal was to reduce the overlap Reuters payroll, while preserving as many good journalism jobs as possible. "So the first thing we did," said Glocer, "was hire six reporters in Bangalore as an experiment.

We said, 'Let's let them just do the flash headlines and the tables and whatever else we can get them to do in Bangalore.'

These new Indian hires had accounting backgrounds and were trained by Reuters, but they were paid standard local wages and vacation and health benefits. "India is an unbelievably rich place for recruiting people, not only with technical skills but also financial skills," said Glocer. When a company puts out its earnings, one of the first things it does is hand it to the wires—Reuters, Dow Jones, and Bloomberg—for distribution. "We will get that raw data," he said, "and then it's a race to see how fast we can turn it around. Bangalore is one of the most wired places in the world, and although there's a slight delay—one second or less—in getting the information over there, it turns out you can just as easily sit in Bangalore and get the electronic version of a press release and turn it into a story as you can in London or New York."

The difference, however, is that wages and rents in Bangalore are less than one-fifth what they are in those Western capitals.

While economics and the flattening of the world have pushed Reuters down this path, Glocer has tried to make a virtue of necessity. "We think we can off-load commoditized reporting and get that done efficiently somewhere else in the world," he said, and then give the conventional Reuters journalists, whom the company is able to retain, a chance to focus on doing much higher-value-added and personally fulfilling journalism and analysis. "Let's say you were a Reuters journalist in New York. Do you reach your life's fulfillment by turning press releases into boxes on the screen, or by doing the analysis?" asked Glocer. Obviously, it is the latter. Outsourcing news bulletins to India also allows Reuters to extend the breadth of its reporting to more small-cap companies, companies it was not cost-efficient for Reuters to follow before with higher-paid journalists in New York. But with lower-wage Indian reporters, who can be hired in large numbers for the cost of one reporter in New York, it can now do that from Bangalore. By the summer of 2004, Reuters had grown its Bangalore content operation to three hundred staff, aiming eventually for a total of fifteen hundred. Some of those are Reuters veterans sent out to train the Indian teams,

slightly more specialized data analysis—number crunching—for securities offerings.

"A lot of our clients are doing the same thing," said Glocer. "Investment research has had to have huge amounts of cost ripped out of it, so a lot of firms are using shift work in Bangalore to do bread-and-butter company analysis." Until recently the big Wall Street firms had conducted investment research by spending millions of dollars on star analysts and then charging part of their salaries to their stockbrokerage departments, which shared the analysis with their best customers, and part to their investment banking business, which sometimes used glowing analyses of a company to lure its banking business. In the wake of New York State Attorney General Eliot Spitzer's investigations into Wall Street practices, following several scandals, investment banking and stockbrokerage have had to be distinctly separated—so that analysts will stop hyping companies in order to get their investment banking. But as a result, the big Wall Street investment firms have had to sharply reduce the cost of their market research, all of which has to be paid for now by their brokerage departments alone. And this created a great incentive for them to outsource some of this analytical work to places like Bangalore. In addition to being able to pay an analyst in Bangalore about \$15,000 in total compensation, as opposed to \$80,000 in New York or London, Reuters has found that its India employees tend to be financially literate and highly motivated as well. Reuters also recently opened a software development center in Bangkok because it turned out to be a good place to recruit developers who had been overlooked by all the Western companies vying for talent in Bangalore.

I find myself torn by this trend. Having started my career as a wire service reporter with United Press International, I have enormous sympathy with wire service reporters and the pressures, both professional and financial, under which they toil. But UPI might still be thriving today as a wire service, which it is not, if it had been able to outsource some of its lower-end business when I started as a reporter in London twenty-five years ago.

"It is delicate with the staff," said Glocer, who has cut the entire Reuters staff by roughly a quarter, without deep cuts among the re-

that the company can survive and then thrive again. At the same time, said Cloccer, "these are sophisticated people out reporting. They see that our clients are doing the exact same things. They get the plot of the story . . . What is vital is to be honest with people about what we are doing and why and not sugarcoat the message. I firmly believe in the lesson of classical economists about moving work to where it can be done best. However, we must not ignore that in some cases, individual workers will not easily find new work. For them, retraining and an adequate social safety net are needed."

In an effort to deal straight with the Reuters staff, David Schlesinger, who heads Reuters America, sent all editorial employees a memo, which included the following excerpt:

OFF-SHORING WITH OBLIGATION

I grew up in New London, Connecticut, which in the 19th century was a major whaling center. In the 1960's and 70's the whales were long gone and the major employers in the region were connected with the military—not a surprise during the Vietnam era. My classmates' parents worked at Electric Boat, the Navy and the Coast Guard. The peace dividend changed the region once again, and now it is best known for the great gambling casinos of Mohegan Sun and Foxwoods and for the pharmaceutical researchers of Pfizer. Jobs went; jobs were created. Skills went out of use; new skills were required. The region changed; people changed. New London, of course, was not unique. How many mill towns saw their mills close; how many shoe towns saw the shoe industry move elsewhere; how many towns that were once textile powerhouses now buy all their linens from China? Change is hard. Change is hardest on those caught by surprise. Change is hardest on those who have difficulty changing too. But change is natural; change is not new; change is important. The current debate about off-shoring is dangerously hot. But the debate about work going to India, China and Mexico is actually no different from the debate once held about submarine work leaving New

London or shoe work leaving Massachusetts or textile work leaving North Carolina. Work gets done where it can be done most effectively and efficiently. That ultimately helps the New Londons, New Bedfords and New Yorks of this world even more than it helps the Bangalores and Shenzhen. It helps because it frees up people and capital to do different, more sophisticated work, and it helps because it gives an opportunity to produce the end product more cheaply, benefiting customers even as it helps the corporation. It's certainly difficult for individuals to think about "their" work going away, being done thousands of miles away by someone earning thousands of dollars less per year. But it's time to think about the opportunity as well as the pain, just as it's time to think about the obligations of off-shoring as well as the opportunities. . . . Every person, just as every corporation, must tend to his or her own economic destiny, just as our parents and grandparents in the mills, shoe shops and factories did.

"THE MONITOR IS BURNING?"

Do you know what an Indian call center sounds like?

While filming the documentary about outsourcing, the TV crew and I spent an evening at the Indian-owned "24/7 Customer" call center in Bangalore. The call center is a cross between a co-ed college frat house and a phone bank raising money for the local public TV station. There are several floors with rooms full of twenty-somethings—some twenty-five hundred in all—working the phones. Some are known as "outbound" operators, selling everything from credit cards to phone minutes. Others deal with "inbound" calls—everything from tracing lost luggage for U.S. and European airline passengers to solving computer problems for confused American consumers. The calls are transferred here by satellite and undersea fiber-optic cable. Each vast floor of a call center consists of clusters of cubicles. The young people work in little

teams under the banner of the company whose phone support they are providing. So one corner might be the Dell group, another might be flying the flag of Microsoft. Their working conditions look like those at your average insurance company. Although I am sure that there are call centers that are operated like sweatshops, 24/7 is not one of them.

Most of the young people I interviewed give all or part of their salary to their parents. In fact, many of them have starting salaries that are higher than their parents' retiring salaries. For entry-level jobs into the global economy, these are about as good as it gets.

I was wandering around the Microsoft section around six p.m. Bangalore time, when most of these young people start their workday to coincide with the dawn in America, when I asked a young Indian computer expert there a simple question: What was the record on the floor for the longest phone call to help some American who got lost in the maze of his or her own software?

Without missing a beat he answered, "Eleven hours."

"Eleven hours?" I exclaimed.

"Eleven hours," he said.

I have no way of checking whether this is true, but you do hear snippets of some oddly familiar conversations as you walk the floor at 24/7 and just listen over the shoulders of different call center operators doing their things. Here is a small sample of what we heard that night while filming for *Discovery Times*. It should be read, if you can imagine this, in the voice of someone with an Indian accent trying to imitate an American or a Brit. Also imagine that no matter how rude, unhappy, irritated, or ornery the voices are on the other end of the line, these young Indians are incessantly and unfailingly polite.

Woman call center operator: "Good afternoon, may I speak with . . . ?"

(Someone on the other end just slammed down the phone.)

Male call center operator: "Merchant services, this is Jerry, may I help you?" (The Indian call center operators adopt Western names of their own choosing. The idea, of course, is to make their American or European customers feel more comfortable. Most of the young Indians

have some fun. While a few just opt for Susan or Bob, some really get creative.)

Woman operator in Bangalore speaking to an American: "My name is Ivy Timbertwoods and I am calling you . . ."

Woman operator in Bangalore getting an American's identity number: "May I have the last four digits of your Social Security?"

Woman operator in Bangalore giving directions as though she were in Manhattan and looking out her window: "Yes, we have a branch on Seventy-fourth and Second Avenue, a branch at Fifty-fourth and Lexington . . ."

Male operator in Bangalore selling a credit card he could never afford himself: "This card comes to you with one of the lowest APR . . ."

Woman operator in Bangalore explaining to an American how she screwed up her checking account: "Check number six-six-five for eighty-one dollars and fifty-five cents. You will still be hit by the thirty-dollar charge. Am I clear?"

Woman operator in Bangalore after walking an American through a computer glitch: "Not a problem, Mr. Jassup. Thank you for your time. Take care. Bye-bye."

Woman operator in Bangalore after someone has just slammed down the phone on her: "Hello? Hello?"

Woman operator in Bangalore apologizing for calling someone in America too early: "This is just a courtesy call, I'll call back later in the evening . . ."

Male operator in Bangalore trying desperately to sell an airline credit card to someone in America who doesn't seem to want one: "Is that because you have too many credit cards, or you don't like flying, Mrs. Bell?"

Woman operator in Bangalore trying to talk an American out of her computer crash: "Start switching between memory okay and memory test . . ."

Male operator in Bangalore doing the same thing: "All right, then, let's just punch in three and press Enter . . ."

Woman operator in Bangalore trying to help an American who cannot stand being on the help line another second: "Yes, ma'am, I do

understand that you are in a hurry right now. I am just trying to help you out . . ."

Woman operator in Bangalore getting another phone slammed down on her: "Yes, well, so what time would be good . . ."

Same woman operator in Bangalore getting another phone slammed down on her: "Why, Mrs. Kent, it's not a . . ."

Same woman operator in Bangalore getting another phone slammed down on her: "As a safety back . . . Hello?"

Same woman operator in Bangalore looking up from her phone: "I definitely have a bad day!"

Woman operator in Bangalore trying to help an American woman with a computer problem that she has never heard before: "What is the problem with this machine, ma'am? The monitor is burning?"

There are currently about 245,000 Indians answering phones from all over the world or dialing out to solicit people for credit cards or cell phone bargains or overdue bills. These call center jobs are low-wage, low-prestige jobs in America, but when shifted to India they become high-wage, high-prestige jobs. The esprit de corps at 24/7 and other call centers I visited seemed quite high, and the young people were all eager to share some of the bizarre phone conversations they've had with Americans who dialed 1-800-HELP, thinking they would wind up talking to someone around the block, not around the world.

C. M. Meghna, a 24/7 call center female operator, told me, "I've had lots of customers who call in [with questions] not even connected to the product that we're dealing with. They would call in because they had lost their wallet or just to talk to somebody. I'm like, 'Okay, all right, maybe you should look under the bed [for your wallet] or where do you normally keep it,' and she's like, 'Okay, thank you so much for helping.'"

Nitu Somaiah: "One of the customers asked me to marry him."

Sophie Sunder worked for Delta's lost-baggage department: "I remember this lady called from Texas," she said, "and she was, like, weep-

ing and I felt so sad for her and there was nothing I could do. I had no information.

"Most of the customers were irate," said Sunder. "The first thing they say is, 'Where's my bag? I want my bag now!' We were like supposed to say, 'Excuse me, can I have your first name and last name?' But where's my bag? Some would ask which country am I from? We are supposed to tell the truth, [so] we tell them India. Some thought it was Indiana, not India! Some did not know where India is. I said it is the country next to Pakistan."

Although the great majority of the calls are rather routine and dull, competition for these jobs is fierce—not only because they pay well, but because you can work at night and go to school during part of the day, so they are stepping-stones toward a higher standard of living. P. V. Kannan, CEO and cofounder of 24/7, explained to me how it all worked: "Today we have over four thousand associates spread out in Bangalore, Hyderabad, and Chennai. Our associates start out with a take-home pay of roughly \$200 a month, which grows to \$300 to \$400 per month in six months. We also provide transportation, lunch, and dinner at no extra cost. We provide life insurance, medical insurance for the entire family—and other benefits."

Therefore, the total cost of each call center operator is actually around \$500 per month when they start out and closer to \$600 to \$700 per month after six months. Everyone is also entitled to performance bonuses that allow them to earn, in certain cases, the equivalent of 100 percent of their base salary. "Around 10 to 20 percent of our associates pursue a degree in business or computer science during the day hours," said Kannan, adding that more than one-third are taking some kind of extra computer or business training, even if it is not toward a degree. "It is quite common in India for people to pursue education through their twenties—self-improvement is a big theme and actively encouraged by parents and companies. We sponsor an MBA program for consistent performers [with] full-day classes over the weekend. Everyone works eight hours a day, five days a week, with two fifteen-minute breaks and an hour of class time on the weekend."

dred applications a day, but only 6 percent of applicants are hired. Here is a snippet from a recruiting session for call center operators at a women's college in Bangalore:

Recruiter 1: "Good morning, girls."

Class in unison: "Good morning, ma'am."

Recruiter 1: "We have been retained by some of the multinationals here to do the recruitment for them. The primary clients that we are recruiting [for] today are Honeywell. And also for America Online."

The young women—dozens of them—then all lined up with their application forms and waited to be interviewed by a recruiter at a wooden table. Here is what some of the interviews sounded like:

Recruiter 1: "What kind of job are you looking at?"

Applicant 1: "It should be based on accounts, then, where I can grow, I can grow in my career."

Recruiter 1: "You have to be more confident about yourself when you're speaking. You're very nervous. I want you to work a little on that and then get in touch with us."

Recruiter 2 to another applicant: "Tell me something about yourself." Applicant 2: "I have passed my SSC with distinction. Second P also with distinction. And I also hold a 70 percent aggregate in previous two years." (This is Indian lingo for their equivalents of GPA and SAT scores.)

Recruiter 2: "Go a little slow. Don't be nervous. Be cool."

The next step for those applicants who are hired at a call center is the training program, which they are paid to attend. It combines learning how to handle the specific processes for the company whose calls they will be taking or making, and attending something called "accent neutralization class." These are daylong sessions with a language teacher who prepares the new Indian hires to disguise their pronounced Indian accents when speaking English and replace them with American, Canadian, or British ones—depending on which part of the world they will be speaking with. It's pretty bizarre to watch. The class I sat in on was being trained to speak in a neutral middle-American accent. The students were asked to read over and over a single phonetic paragraph designed to teach them how to soften their *t*'s and to roll their *r*'s.

dressed in a traditional Indian sari, moved seamlessly among British, American, and Canadian accents as she demonstrated reading a paragraph designed to highlight phonetics. She said to the class, "Remember the first day I told you that the Americans flap the 'uh' sound? You know, it sounds like an almost 'duh' sound—not crisp and clear like the British. So I would not say"—here she was crisp and sharp—"Betty bought a bit of better butter" or "Insert a quarter in the meter." But I would say"—her voice very flat—"Insert a quarter in the meter" or "Betty bought a bit of better butter." So I'm just going to read it out for you once, and then we'll read it together. All right? "Thirty little turtles in a bottle of bottled water. A bottle of bottled water held thirty little turtles. It didn't matter that each turtle had to rattle a metal ladle in order to get a little bit of noodles."

"All right, who's going to read first?" the instructor asked. Each member of the class then took a turn trying to say this tongue twister in an American accent. Some of them got it on the first try, and others, well, let's just say that you wouldn't think they were in Kansas City if they answered your call to Delta's lost-luggage number.

After listening to them stumble through this phonetics lesson for half an hour, I asked the teacher if she would like me to give them an authentic version—since I'm originally from Minnesota, smack in the Midwest, and still speak like someone out of the movie *Fargo*. Absolutely, she said. So I read the following paragraph: "A bottle of bottled water held thirty little turtles. It didn't matter that each turtle had to rattle a metal ladle in order to get a little bit of noodles, a total turtle delicacy . . . The problem was that there were many turtle battles for less than oodles of noodles. Every time they thought about grappling with the haggler turtles their little turtle minds boggled and they only caught a little bit of noodles."

The class responded enthusiastically. It was the first time I ever got an ovation for speaking Minnesotan. On the surface, there is something unappealing about the idea of inducing other people to flatten their accents in order to compete in a flatter world. But before you disparage it, you have to taste just how hungry these kids are to escape the lower end of the middle class and move up. If a little accent modification is the price they

"This is a high-stress environment," said Nilekani, the CEO of Infosys, which also runs a big call center. "It is twenty-four by seven. You work in the day, and then the night, and then the next morning." But the working environment, he insisted, "is not the tension of alienation. It is the tension of success. They are dealing with the challenges of success, of high-pressure living. It is not the challenge of worrying about whether they would have a challenge."

That was certainly the sense I got from talking to a lot of the call center operators on the floor. Like any explosion of modernity, outsourcing is challenging traditional norms and ways of life. But educated Indians have been held back so many years by both poverty and a socialist bureaucracy that many of them seem more than ready to put up with the hours. And needless to say, it is much easier and more satisfying for them to work hard in Bangalore than to pack up and try to make a new start in America. In the flat world they can stay in India, make a decent salary, and not have to be away from families, friends, food, and culture. At the end of the day, these new jobs actually allow them to be more Indian. Said Anneey Unnikrishnan, a personnel manager at 24/7, "I finished my MBA and I remember writing the GMAT and getting into Purdue University. But I couldn't go because I couldn't afford it. I didn't have the money for it. Now I can, [but] I see a whole lot of American industry has come into Bangalore and I don't really need to go there. I can work for a multinational sitting right here. So I still get my rice and sambar [a traditional Indian dish], which I eat. I don't need to, you know, learn to eat coleslaw and cold beef. I still continue with my Indian food and I still work for a multinational. Why should I go to America?"

The relatively high standard of living that she can now enjoy—enough for a small apartment and car in Bangalore—is good for America as well. When you look around at 24/7's call center, you see that all the computers are running Microsoft Windows. The chips are designed by Intel. The phones are from Lucent. The air-conditioning is by Carrier, and even the bottled water is by Coke. In addition, 90 percent of the shares in 24/7 are owned by U.S. investors. This explains why, although the United States has lost some service jobs to India in recent years, total exports from American-

\$2.5 billion in 1990 to \$5 billion in 2003. So even with the outsourcing of some service jobs from the United States to India, India's growing economy is creating a demand for many more American goods and services.

What goes around, comes around.

Nine years ago, when Japan was beating America's brains out in the auto industry, I wrote a column about playing the computer geography game *Where in the World is Carmen Sandiego?* with my nine-year-old daughter, Orly. I was trying to help her by giving her a clue suggesting that Carmen had gone to Detroit, so I asked her, "Where are cars made?" And without missing a beat she answered, "Japan."

Ouchi!

Well, I was reminded of that story while visiting Global Edge, an Indian software design firm in Bangalore. The company's marketing manager, Rajesh Rao, told me that he had just made a cold call to the VP for engineering of a U.S. company, trying to drum up business. As soon as Mr. Rao introduced himself as calling from an Indian software firm, the U.S. executive said to him, "*Namaste*," a common Hindi greeting. Said Mr. Rao, "A few years ago nobody in America wanted to talk to us. Now they are eager." And a few even know how to say hello in proper Hindu fashion. So now I wonder: If I have a granddaughter one day, and I tell her I'm going to India, will she say, "Grandpa, is that where software comes from?"

No, not yet, honey. Every new product—from software to widgets—goes through a cycle that begins with basic research, then applied research, then incubation, then development, then testing, then manufacturing, then deployment, then support, then continuation engineering in order to add improvements. Each of these phases is specialized and unique, and neither India nor China nor Russia has a critical mass of talent that can handle the whole product cycle for a big American multinational. But these countries are steadily developing their research and development capabilities to handle more and more of these phases. As that continues, we really will see the beginning of what Satyam

called "the globalization of innovation" and an end to the old model of a single American or European multinational handling all the elements of the development product cycle from its own resources. More and more American and European companies are outsourcing significant research and development tasks to India, Russia, and China.

According to the information technology office of the state government in Karnataka, where Bangalore is located, Indian units of Cisco Systems, Intel, IBM, Texas Instruments, and GE have already filed 1,000 patent applications with the U.S. Patent Office. Texas Instruments alone has had 225 U.S. patents awarded to its Indian operation. "The Intel team in Bangalore is developing microprocessor chips for high-speed broadband wireless technology, to be launched in 2006," the Karnataka IT office said, in a statement issued at the end of 2004, and "at GE's John F. Welch Technology Centre in Bangalore, engineers are developing new ideas for aircraft engines, transport systems and plastics." Indeed, GE over the years has frequently transferred Indian engineers who worked for it in the United States back to India to integrate its whole global research effort. GE now even sends non-Indians to Bangalore. Vivek Paul is the president of Wipro Technologies, another of the elite Indian technology companies, but he is based in Silicon Valley to be close to Wipro's American customers. Before coming to Wipro, Paul managed GE's CT scanner business out of Milwaukee. At the time he had a French colleague who managed GE's power generator business for the scanners out of France.

"I ran into him on an airplane recently," said Paul, "and he told me he had moved to India to head up GE's high-energy research there."

I told Vivek that I love hearing an Indian who used to head up GE's CT business in Milwaukee but now runs Wipro's consulting business in Silicon Valley tell me about his former French colleague who has moved to Bangalore to work for GE. That is a flat world.

Every time I think I have found the last, most obscure job that could be

for attracting high technology global investment. After stepping down from that post in 2003, he started a company called B2K, with a division called Brickwork, which offers busy global executives their own personal assistant in India. Say you are running a company and you have been asked to give a speech and a PowerPoint presentation in two days. Your "remote executive assistant" in India, provided by Brickwork, will do all the research for you, create the PowerPoint presentation, and e-mail the whole thing to you overnight so that it is on your desk the day you have to deliver it.

"You can give your personal remote executive assistant their assignment when you are leaving work at the end of the day in New York City, and it will be ready for you the next morning," explained Kulkarni. "Because of the time difference with India, they can work on it while you sleep and have it back in your morning." Kulkarni suggested I hire a remote assistant in India to do all the research for this book. "He or she could also help you keep pace with what you want to read. When you wake up, you will find the completed summary in your in-box." (I told him no one could be better than my longtime assistant, Maya Gorman, who sits ten feet away!)

Having your own personal remote executive assistant costs around \$1,500 to \$2,000 a month, and given the pool of Indian college grads from which Brickwork can recruit, the brainpower you can hire dollar-for-dollar is substantial. As Brickwork's promotional material says, "India's talent pool provides companies access to a broad spectrum of highly qualified people. In addition to fresh graduates, which are around 2.5 million per year, many qualified homemakers are entering the job market." India's business schools, it adds, produce around eighty-nine thousand MBAs per year.

"We've had a wonderful response," said Kulkarni, with clients coming from two main areas. One is American health-care consultants, who often need lots of numbers crunched and PowerPoint presentations drawn up. The other, he said, are American investment banks and financial services companies, which often need to prepare glossy pamphlets with graphs to illustrate the benefits of an IPO or a proposed merger. In the case of a

general market conditions and trends, where most of the research can be gleaned off the Web and summarized in a standard format. "The judgment of how to price the deal will come from the investment bankers themselves," said Kulkarni. "We will do the lower-end work, and they will do the things that require critical judgment and experience, close to the market." The more projects his team of remote executive assistants engages in, the more knowledge they build up. They are full of ambition to do their higher problem solving as well, said Kulkarni. "The idea is to constantly learn. You are always taking an examination. There is no end to learning... There is no real end to what can be done by whom."

Unlike Columbus, I didn't stop with India. After I got home, I decided to keep exploring the East for more signs that the world was flat. So after India, I was soon off to Tokyo, where I had a chance to interview Kenichi Ohmae, the legendary former McKinsey & Company consultant in Japan. Ohmae has left McKinsey and struck out on his own in business, Ohmae & Associates. And what do they do? Not consulting anymore, explained Ohmae. He is now spearheading a drive to outsource low-end Japanese jobs to Japanese-speaking call centers and service providers in China. "Say what?" I asked. "To China? Didn't the Japanese once colonize China, leaving a very bad taste in the mouths of the Chinese?"

Well, yes, said Ohmae, but he explained that the Japanese also left behind a large number of Japanese speakers who have maintained a slice of Japanese culture, from sushi to karaoke, in northeastern China, particularly around the northeastern port city of Dalian. Dalian has become for Japan what Bangalore has become for America and the other English-speaking countries: outsourcing central. The Chinese may never forgive Japan for what it did to China in the last century, but the Chinese are so focused on leading the world in the next century that they are ready to brush up on their Japanese and take all the work Japan can outsource.

"The recruiting is quite easy," said Ohmae in early 2004. "About one-

third of the people in this region [around Dalian] have taken Japanese as a second language in high school. So all of these Japanese companies are coming in." Ohmae's company is doing primarily data-entry work in China, where Chinese workers take handwritten Japanese documents, which are scanned, faxed, or e-mailed over from Japan to Dalian, and then type them into a digital database in Japanese characters. Ohmae's company has developed a software program that takes the data to be entered and breaks it down into packets. These packets can then be sent around China or Japan for typing, depending on the specialty required, and then reassembled at the company's database in its Tokyo headquarters. "We have the ability to allocate the job to the person who knows the area best." Ohmae's company even has contracts with more than seventy thousand housewives, some of them specialists in medical or legal terminologies, to do data-entry work at home. The firm has recently expanded into computer-aided designs for a Japanese housing company. "When you negotiate with the customer in Japan for building a house," he explained, "you would sketch out a floor plan—most of these companies don't use computers." So the hand-drawn plans are sent electronically to China, where they are converted into digital designs, which then are e-mailed back to the Japanese building firm, which turns them into manufacturing blueprints. "We took the best-performing Chinese data operators," said Ohmae, "and now they are processing seventy houses a day." Chinese doing computer drawings for Japanese homes, nearly seventy years after a rapacious Japanese army occupied China, razing many homes in the process. Maybe there is hope for this flat world...

I needed to see Dalian, this Bangalore of China, firsthand, so I kept moving around the East. Dalian is impressive not just for a Chinese city. With its wide boulevards, beautiful green spaces, and nexus of universities, technical colleges, and massive software park, Dalian would stand out in Silicon Valley. I had been here in 1998, but there had been so much new building since then that I did not recognize the place. Dalian, which is located about an hour's flight northeast of Beijing, sym-

bolizes how rapidly China's most modern cities—and there are still plenty of miserable, backward ones—are grabbing business as knowledge centers, not just as manufacturing hubs. The signs on the buildings tell the whole story: GE, Microsoft, Dell, SAP, HP, Sony, and Accenture—to name but a few—all are having backroom work done here to support their Asian operations, as well as new software research and development.

Because of its proximity to Japan and Korea, each only about an hour away by air, its large number of Japanese speakers, its abundance of Internet bandwidth, and many parks and a world-class golf course (all of which appeal to knowledge workers), Dalian has become an attractive locus for Japanese outsourcing. Japanese firms can hire three Chinese software engineers for the price of one in Japan and still have change to pay a roomful of call center operators (\$90 a month starting salary). No wonder some twenty-eight hundred Japanese companies have set up operations here or teamed up with Chinese partners.

"I've taken a lot of American people to Dalian, and they are amazed at how fast the China economy is growing in this high-tech area," said Win Liu, director of U.S./EU projects for DHQ, one of Dalian's biggest homegrown software firms, which has expanded from thirty to twelve hundred employees in six years. "Americans don't realize the challenge to the extent that they should."

Dalian's dynamic mayor, Xia Deren, forty-nine, is a former college president. (For a Communist authoritarian system, China does a pretty good job of promoting people on merit. The Mandarin meritocratic culture here still runs very deep.) Over a traditional ten-course Chinese dinner at a local hotel, the mayor told me how far Dalian has come and just where he intends to take it. "We have twenty-two universities and colleges with over two hundred thousand students in Dalian," he explained. More than half those students graduate with engineering or science degrees, and even those who don't, those who study history or literature, are still being directed to spend a year studying Japanese or English, plus computer science, so that they will be employable. The mayor estimated that more than half the residents of Dalian had access to the Internet at the office, home, or school.

"The Japanese enterprises originally started some data processing industries here," the mayor added, "and with this as a base they have now moved to R & D and software development . . . In the past one or two years, the software companies of the U.S. are also making some attempts to move outsourcing of software from the U.S. to our city . . . We are approaching and we are catching up with the Indians. Exports of software products [from Dalian] have been increasing by 50 percent annually. And China is now becoming the country that develops the largest number of university graduates. Though in general our English is not as competent as that of the Indian people, we have a bigger population, [so] we can pick out the most intelligent students who can speak the best English."

Are Dalian residents bothered by working for the Japanese, whose government has still never formally apologized for what the wartime Japanese government did to China?

"We will never forget that a historical war occurred between the two nations," he answered, "but when it comes to the field of economy, we only focus on the economic problems—especially if we talk about the software outsourcing business. If the U.S. and Japanese companies make their products in our city, we consider that to be a good thing. Our youngsters are trying to learn Japanese, to master this tool so they can compete with their Japanese counterparts to successfully land high-salary positions for themselves in the future."

The mayor then added for good measure, "My personal feeling is that Chinese youngsters are more ambitious than Japanese or American youngsters in recent years, but I don't think they are ambitious enough, because they are not as ambitious as my generation. Because our generation, before they got into university and colleges, were sent to distant rural areas and factories and military teams, and went through a very hard time, so in terms of the spirit to overcome and face the hardships, [our generation had to have more ambition] than youngsters nowadays."

Mayor Xia had a charmingly direct way of describing the world, and although some of what he had to say gets lost in translation, he gets it—and Americans should too: "The rule of the market economy," this

Communist official explained to me, "is that if somewhere has the richest human resources and the cheapest labor, of course the enterprises and the businesses will naturally go there." In manufacturing, he pointed out, "Chinese people first were the employees and working for the big foreign manufacturers, and after several years, after we have learned all the processes and steps, we can start our own firms. Software will go down the same road . . . First we will have our young people employed by the foreigners, and then we will start our own companies. It is like building a building. Today, the U.S., you are the designers, the architects, and the developing countries are the bricklayers for the buildings. But one day I hope we will be the architects."

I just kept exploring—east and west. By the summer of 2004, I was in Colorado on vacation. I had heard about this new low-fare airline called JetBlue, which was launched in 1999. I had no idea where they operated, but I needed to fly between Washington and Atlanta, and couldn't quite get the times I wanted, so I decided to call JetBlue and see where exactly they flew. I confess I did have another motive. I had heard that JetBlue had outsourced its entire reservation system to housewives in Utah, and I wanted to check this out. So I dialed JetBlue reservations and had the following conversation with the agent:

"Hello, this is Dolly. Can I help you?" answered a grandmotherly voice.

"Yes, I would like to fly from Washington to Atlanta," I said. "Do you fly that route?"

"No, I'm sorry we don't. We fly from Washington to Ft. Lauderdale," said Dolly.

"How about Washington to New York City?" I asked.

"I'm sorry, we don't fly that route. We do fly from Washington to Oakland and Long Beach," said Dolly.

"Say, can I ask you something? Are you really at home? I read that JetBlue agents just work at home."

"Yes, I am," said Dolly in the most cheerful voice. (I later confirmed

upstairs in my house, looking out the window at a beautiful sunny day. Just five minutes ago someone called and asked me that same question and I told them and they said, 'Good, I thought you were going to tell me you were in New Delhi!'"

"Where do you live?" I asked.

"Salt Lake City, Utah," said Dolly. "We have a two-story home, and I love working here, especially in the winter when the snow is swirling and I am up here in the office at home."

"How do you get such a job?" I asked.

"You know, they don't advertise," said Dolly in the sweetest possible voice. "It's all by word of mouth. I worked for the state government and I retired, and [after a little while] I thought I have to do something else and I just love it."

David Neeleman, the founder and CEO of JetBlue Airways Corp., has a name for all this. He calls it "homesourcing." JetBlue now has four hundred reservation agents, like Dolly, working at home in the Salt Lake City area, taking reservations—in between babysitting, exercising, writing novels, and cooking dinner.

A few months later I visited Neeleman at JetBlue's headquarters in New York, and he explained to me the virtues of homesourcing, which he actually started at Morris Air, his first venture in the airline business. (It was bought by Southwest.) "We had 250 people in their homes doing reservations at Morris Air," said Neeleman. "They were 30 percent more productive—they take 30 percent more bookings, by just being happier. They were more loyal and there was less attrition. So when I started JetBlue, I said, 'We are going to have 100 percent reservation at home.'"

Neeleman has a personal reason for wanting to do this. He is a Mormon and believes that society will be better off if more mothers are able to stay at home with their young children but are given a chance to be wage earners at the same time. So he based his home reservations system in Salt Lake City, where the vast majority of the women are Mormons and many are stay-at-home mothers. Home reservationists work twenty-five hours a week and have to come into the JetBlue regional office in Salt Lake City for four hours a month to learn new skills and be brought up to date on what is going on inside the company.

"We will never outsource to India," said Neeleman. "The quality we can get here is far superior . . . [Employers] are more willing to outsource to India than to their own homes, and I can't understand that. Somehow they think that people need to be sitting in front of them or some boss they have designated. The productivity we get here more than makes up for the India [wage] factor."

A *Los Angeles Times* story about JetBlue (May 9, 2004) noted that "in 1997, 11.6 million employees of U.S. companies worked from home at least part of the time. Today, that number has soared to 23.5 million—16% of the American labor force. (Meanwhile, the ranks of the self-employed, who often work from home, have swelled during the same period—to 23.4 million from 18 million.) In some eyes, homesourcing and outsourcing aren't so much competing strategies as they are different manifestations of the same thing: a relentless push by corporate America to lower costs and increase efficiency, wherever that may lead."

That is exactly what I was learning on my own travels: Homesourcing to Salt Lake City and outsourcing to Bangalore were just flip sides of the same coin—sourcing. And the new, new thing, I was also learning, is the degree to which it is now possible for companies and individuals to source work anywhere.

I just kept moving. In the fall of 2004, I accompanied the chairman of the Joint Chiefs of Staff, General Richard Myers, on a tour of hot spots in Iraq. We visited Baghdad, the U.S. military headquarters in Fallujah, and the 24th Marine Expeditionary Unit encampment outside Babil, in the heart of Iraq's so-called Sunni Triangle. The makeshift 24th MEU base is a sort of Fort Apache, in the middle of a pretty hostile Iraqi Sunni Muslim population. While General Myers was meeting with officers and enlisted men there, I was free to walk around the base, and eventually I wandered into the command center, where my eye was immediately caught by a large flat-screen TV. On the screen was a live TV feed that looked to be coming from some kind of overhead camera. It showed some people moving around behind a house. Also on the screen, along

the right side, was an active instant-messaging chat room, which seemed to be discussing the scene on the TV.

"What is that?" I asked the soldier who was carefully monitoring all the images from a laptop. He explained that a U.S. Predator drone—a small pilotless aircraft with a high-power television camera—was flying over an Iraqi village, in the 24th MEU's area of operation, and feeding real-time intelligence images back to his laptop and this flat screen. This drone was actually being "flown" and manipulated by an expert who was sitting back at Nellis Air Force Base in Las Vegas, Nevada. That's right, the drone over Iraq was actually being remotely directed from Las Vegas. Meanwhile, the video images it was beaming back were being watched simultaneously by the 24th MEU, United States Central Command headquarters in Tampa, CentCom regional headquarters in Qatar, in the Pentagon, and probably also at the CIA. The different analysts around the world were conducting an online chat about how to interpret what was going on and what to do about it. It was their conversation that was scrolling down the right side of the screen.

Before I could even express my amazement, another officer traveling with us took me aback by saying that this technology had "flattened" the military hierarchy—by giving so much information to the low-level officer, or even enlisted man, who was operating the computer, and empowering him to make decisions about the information he was gathering. While I'm sure that no first lieutenant is going to be allowed to start a firefight without consulting superiors, the days when only senior officers had the big picture are over. The military playing field is being leveled.

I told this story to my friend Nick Burns, the U.S. ambassador to NATO and a loyal member of the Red Sox Nation. Nick told me he was at CentCom headquarters in Qatar in April 2004, being briefed by General John Abizaid and his staff. Abizaid's team was seated across the table from Nick with four flat-screen TVs behind them. The first three had overhead images being relayed in real time from different sectors of Iraq by Predator drones. The last one, which Nick was focused on, was showing a Yankees–Red Sox game.

On one screen it was Pedro Martinez versus Derek Jeter, and on the other three it was Jihadists versus the First Cavalry.

FLATBURGERS AND FRIES

I kept moving—all the way back to my home in Bethesda, Maryland. By the time I settled back into my house from this journey to the edges of the earth, my head was spinning. But no sooner was I home than more signs of the flattening came knocking at my door. Some came in the form of headlines that would unnerve any parent concerned about where his college-age children are going to fit in. For instance, Forrester Research, Inc., was projecting that more than 3 million service and professional jobs would move out of the country by 2015. But my jaw really dropped when I read a July 19, 2004, article from the *International Herald Tribune* headlined: “Want Fries With Outsourcing?”

“Pull off U.S. Interstate Highway 55 near Cape Girardeau, Missouri, and into the drive-through lane of a McDonald’s next to the highway and you’ll get fast, friendly service, even though the person taking your order is not in the restaurant—or even in Missouri,” the article said. “The order taker is in a call center in Colorado Springs, more than 900 miles, or 1,450 kilometers, away, connected to the customer and to the workers preparing the food by high-speed data lines. Even some restaurant jobs, it seems, are not immune to outsourcing.”

“The man who owns the Cape Girardeau restaurant, Shannon Davis, has linked it and three other of his 12 McDonald’s franchises to the Colorado call center, which is run by another McDonald’s franchisee, Steven Bigari. And he did it for the same reasons that other business owners have embraced call centers: lower costs, greater speed and fewer mistakes.”

“Cheap, quick and reliable telecommunications lines let the order takers in Colorado Springs converse with customers in Missouri, take an electronic snapshot of them, display their order on a screen to make sure

it is right, then forward the order and the photo to the restaurant kitchen. The photo is destroyed as soon as the order is completed, Bigari said. People picking up their burgers never know that their order traverses two states and bounces back before they can even start driving to the pickup window.”

“Davis said that he had dreamed of doing something like this for more than a decade. ‘We could not wait to go with it,’ he added. Bigari, who created the call center for his own restaurants, was happy to oblige—for a small fee per transaction.”

The article noted that McDonald’s Corp. said it found the call center idea interesting enough to start a test with three stores near its headquarters in Oak Brook, Illinois, with different software from that used by Bigari. “Jim Sappington, a McDonald’s vice president for information technology, said that it was ‘way, way too early’ to tell if the call center idea would work across the thirteen thousand McDonald’s restaurants in the United States . . . Still, franchisees of two other McDonald’s restaurants, beyond Davis’s, have outsourced their drive-through ordering to Bigari in Colorado Springs. (The other restaurants are in Brainerd, Minnesota, and Norwood, Massachusetts.) Central to the system’s success, Bigari said, is the way it pairs customers’ photos with their orders; by increasing accuracy, the system cuts down on the number of complaints and therefore makes the service faster. In the fast-food business, time is truly money: shaving even five seconds off the processing time of an order is significant,” the article noted. “Bigari said he had cut order time in his dual-lane drive-throughs by slightly more than 30 seconds, to about 1 minute, 5 seconds, on average. That’s less than half the average of 2 minutes, 36 seconds, for all McDonald’s, and among the fastest of any franchise in the country, according to QSRweb.com, which tracks such things. His drive-throughs now handle 260 cars an hour, Bigari said, 30 more than they did before he started the call center . . . Though his operators earn, on average, 40 cents an hour more than his line employees, he has cut his overall labor costs by a percentage point, even as drive-through sales have increased . . . Tests conducted by outside companies found that Bigari’s drive-throughs now make mistakes on fewer than

2 percent of all orders, down from about 4 percent before he started using the call centers, Bigari said."

Bigari "is so enthusiastic about the call center idea," the article noted, "that he has expanded it beyond the drive-through window at his seven restaurants that use the system. While he still offers counter service at those restaurants, most customers now order through the call center, using phones with credit card readers on tables in the seating area."

Some of the signs of flattering I encountered back home, though, had nothing to do with economics. On October 3, 2004, I appeared on the CBS News Sunday morning show *Face the Nation*, hosted by veteran CBS correspondent Bob Schieffer. CBS had been in the news a lot in previous weeks because of Dan Rather's *60 Minutes* report about President George W. Bush's Air National Guard service that turned out to be based on bogus documents. After the show that Sunday, Schieffer mentioned that the oddest thing had happened to him the week before. When he walked out of the CBS studio, a young reporter was waiting for him on the sidewalk. This isn't all that unusual, because as with all the Sunday-morning shows, the major networks—CBS, NBC, ABC, CNN, and Fox—always send crews to one another's studios to grab exit interviews with the guests. But this young man, Schieffer explained, was not from a major network. He politely introduced himself as a reporter for a Web site called InDC Journal and asked whether he could ask Schieffer a few questions. Schieffer, being a polite fellow, said sure. The young man interviewed him on a device Schieffer did not recognize and then asked if he could take his picture. A picture? Schieffer noticed that the young man had no camera. He didn't need one. He turned his cell phone around and snapped Schieffer's picture.

"So I came in the next morning and looked up this Web site and there was my picture and the interview and there were already three hundred comments about it," said Schieffer, who, though keenly aware of online journalism, was nevertheless taken aback at the incredibly fast, low-cost, and solo manner in which this young man had put him up in

I was intrigued by this story, so I tracked down the young man from InDC Journal. His name is Bill Ardolino, and he is a very thoughtful guy. I conducted my own interview with him online—how else?—and began by asking about what equipment he was using as a one-man network/newspaper.

"I used a minuscule MP3 player/digital recorder (three and a half inches by two inches) to get the recording, and a separate small digital camera phone to snap his picture," said Ardolino. "Not quite as sexy as an all-in-one phone/camera/recorder (which does exist), but a statement on the ubiquity and miniaturization of technology nonetheless. I carry this equipment around D.C. at all times because, hey, you never know. What's perhaps more startling is how well Mr. Schieffer thought on his feet, after being jumped on by some stranger with interview questions. He blew me away."

Ardolino said the MP3 player cost him about \$125. It is "primarily designed to play music," he explained, but it also "comes prepackaged as a digital recorder that creates a WAV sound file that can be uploaded back to a computer . . . Basically, I'd say that the barrier to entry to do journalism that requires portable, ad hoc recording equipment, is [now] about \$100—\$200 to \$300 if you add a camera, \$400 to \$500 for a pretty nice recorder and a pretty nice camera. [But] \$200 is all that you need to get the job done."

What prompted him to become his own news network?

"Being an independent journalist is a hobby that sprang from my frustration about biased, incomplete, selective, and/or incompetent information gathering by the mainstream media," explained Ardolino, who describes himself as a "center-right libertarian." "Independent journalism and its relative, blogging, are expressions of market forces—a need is not being met by current information sources. I started taking pictures and doing interviews of the antiwar rallies in D.C., because the media was grossly misrepresenting the nature of the groups that were organizing the gatherings—unrepentant Marxists, explicit and implicit supporters of terror, etc. I originally chose to use humor as a device, but I've since branched out. Do I have more power, power to get my message out was The Schieffer interview actually brought in about twenty-five

thousand visits in twenty-four hours. My peak day since I've started was fifty-five thousand when I helped break 'Rathergate' . . . I interviewed the first forensics expert in the Dan Rather National Guard story, and he was then specifically picked up by *The Washington Post*, *Chicago Sun-Times*, *Globe*, *NYT*, etc., within forty-eight hours.

"The pace of information gathering and correction in the CBS fake memo story was astounding," he continued. "It wasn't just that CBS News 'stonewalled' after the fact, it was arguably that they couldn't keep up with an army of dedicated fact-checkers. The speed and openness of the medium is something that runs rings around the old process . . . I'm a twenty-nine-year-old marketing manager [who] always wanted to write for a living but hated the AP style book. As *iberblogger* Glenn Reynolds likes to say, blogs have given the people a chance to stop yelling at their TV and have a say in the process. I think that they serve as sort of a 'fifth estate' that works in conjunction with the mainstream media (often by keeping an eye on them or feeding them raw info) and potentially function as a journalism and commentary farm system that provides a new means to establish success.

"Like many facets of the topic that you're talking about in your book, there are good and bad aspects of the development. The splintering of media makes for a lot of incoherence or selective cognition (look at our country's polarization), but it also decentralizes power and provides a better guarantee that the *complete* truth is out there . . . somewhere . . . in pieces."

On any given day one can come across any number of stories, like the encounter between Bob Schieffer and Bill Ardolino, that tell you that old hierarchies are being flattened and the playing field is being leveled. As Micah L. Sift nicely put it in *The Nation* magazine (November 22, 2004): "The era of top-down politics—where campaigns, institutions and journalism were cloistered communities powered by hard-to-amass capital—is over. Something wilder, more engaging and infinitely more satisfying to individual participants is arising alongside the old order."

I offer the Schieffer-Ardolino encounter as just one example of how the flattening of the world has happened faster and changed rules, roles,

though I know it is a cliché, I have to say it nevertheless: *You don't see nothing yet*. As I detail in the next chapter, we are entering a phase where we are going to see the digitization, virtualization, and automation of almost everything. The gains in productivity will be staggering for those countries, companies, and individuals who can absorb the new technological tools. And we are entering a phase where more people than ever before in the history of the world are going to have access to these tools—as innovators, as collaborators, and, alas, even as terrorists. You say you want a revolution? Well, the real information revolution is about to begin. I call this new phase Globalization 3.0 because it followed Globalization 2.0, but I think this new era of globalization will prove to be such a difference of degree that it will be seen, in time, as a difference in kind. That is why I introduced the idea that the world has gone from round to flat. Everywhere you turn, hierarchies are being challenged from below or transforming themselves from top-down structures into more horizontal and collaborative ones.

"Globalization is the word we came up with to describe the changing relationships between governments and big businesses," said David Rothkopf, a former senior Department of Commerce official in the Clinton administration and now a private strategic consultant. "But what is going on today is a much broader, much more profound phenomenon." It is not simply about how governments, business, and people communicate, not just about how organizations interact, but is about the emergence of completely new social, political, and business models. "It is about things that impact some of the deepest, most ingrained aspects of society right down to the nature of the social contract," added Rothkopf. "What happens if the political entity in which you are located no longer corresponds to a job that takes place in cyberspace, or no longer really encompasses workers collaborating with other workers in different corners of the globe, or no longer really captures products produced in multiple places simultaneously? Who regulates the work? Who taxes it? Who should benefit from those taxes?"

If I am right about the flattening of the world, it will be remembered as one of those fundamental changes—like the rise of the nation-state or the Industrial Revolution—each of which in its day noted Rothkopf

produced changes in the role of individuals, the role and form of governments, the way we innovated, the way we conducted business, the role of women, the way we fought wars, the way we educated ourselves, the way religion responded, the way art was expressed, the way science and research were conducted, not to mention the political labels we assigned to ourselves and to our opponents. "There are certain pivot points or watersheds in history that are greater than others because the changes they produced were so sweeping, multifaceted, and hard to predict at the time," Rothkopf said.

If the prospect of this flattening—and all of the pressures, dislocations, and opportunities accompanying it—causes you unease about the future, you are neither alone nor wrong. Whenever civilization has gone through one of these disruptive, dislocating technological revolutions—like Gutenberg's introduction of the printing press—the whole world has changed in profound ways. But there is something about the flattening of the world that is going to be qualitatively different from other such profound changes: the speed and breadth with which it is taking hold. The introduction of printing happened over a period of decades and for a long time affected only a relatively small part of the planet. Same with the Industrial Revolution. This flattening process is happening at warp speed and directly or indirectly touching a lot more people on the planet at once. The faster and broader this transition to a new era, the more likely is the potential for disruption, as opposed to an orderly transfer of power from the old winners to the new winners.

To put it another way, the experiences of the high-tech companies in the last few decades who failed to navigate the rapid changes brought about in their marketplace by these types of forces may be a warning to all the businesses, institutions, and nation-states that are now facing these inevitable, even predictable, changes but lack the leadership, flexibility, and imagination to adapt—not because they are not smart or aware, but because the speed of change is simply overwhelming them.

And that is why the great challenge for our time will be to absorb these changes in ways that do not overwhelm people but also do not leave them behind. None of this will be easy. But this is our task. It

is inevitable and unavoidable. It is the ambition of this book to offer a framework for how to think about it and manage it to our maximum benefit.

I have shared with you in this chapter how I personally discovered that the world is flat. The next chapter details how it got that way.