

Do we need a flat world?

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Narayana N. R. Murthy
Chairman of the Board
Infosys Technologies Limited
Bangalore, INDIA

It is a great privilege to deliver the first Michael Dell lecture at this famous university. It is rare that a distinguished university and a visionary leader like Michael come together. I am honored to be part of this confluence. Michael is a rare individual. A visionary at a very young age, a dynamic entrepreneur who unleashed a business revolution from the dorm room, creator of a business model that disrupted the PC industry, the youngest Fortune 500 CEO at the age of 27, Michael has been a role model for entrepreneurs all over the world. I can go on and on about his accomplishments. Let me close it by these words. Even if I subtract from him all his extraordinary achievements in business, he still remains as great an individual as before, thanks to his courtesy, decency and humility.

I have decided to speak on the "Flat World" phenomenon. I will talk about the opportunities and the challenges that the 'Flat World' brings with it. This subject should be dear to Michael and to me as we have both benefited from the flat world phenomenon. While Infosys derives most of its revenues from the developed world, Dell does some significant manufacturing in Asia. Asia is also an important market for Dell. Both Infosys and Dell have derived significant operational efficiency and profitability by the flattening of the world. Both the firms have always operated unconstrained by the geographical boundaries, be it sourcing or processing the inputs or selling. I am sure that every one of us, here, has been exposed to the unfolding of the 'flat world' phenomenon in some way or the other.

What is a flat world? Tom Friedman used the term 'flat world' to popularize the power of globalization. A flat world is a world that facilitates globalization to flourish. Globalization is about sourcing capital from where it is cheapest, sourcing talent from where it is best available, producing where it is most efficient and selling where the markets are, without being constrained by national boundaries. Globalization is nothing new. Nayan Chanda, a well known journalist, in his recent book *Bound Together - a masterful history of globalization from the prehistoric days to the modern era* – notes that globalization is a process of ever-growing interconnectedness and interdependence that began thousands of years ago, and continues to this day with increasing speed and ease.

Globalization provides opportunity for every nation to offer the best-value-for-money products and services in the global bazaar without being restricted by the bureaucracy, political hindrance or xenophobia. It provides a corporation with an opportunity to hire the best talent in the world, and to list on the best stock exchanges of the world. A globalized corporation is different from a multinational corporation (MNC). A MNC, generally, starts a subsidiary in a country to produce and sell in that country alone. A globalized corporation, on the other hand, produces its products for the entire world in a country or a region where it is cheapest to produce. In a typical globalized corporation, product development takes place where the human talent and innovation is best; production takes place at the factories situated in countries where it is most cost-effective to produce; and sales take place in countries with high disposable incomes.

However, we are far from the *ideal globalized world*. Pankaj Ghemawat, a well-respected professor of strategy at the Harvard Business School, argues in his paper – *Why the world is not flat and what to do about it* – that domestic focus is still the primary focus in most sectors of the economy even after a century of attempts at globalization. He shows that international telephone calls are still just 3% of the total volume; foreign direct

investment is less than 3% of the total direct investment; and international tourists account for less than 10% of the total tourist traffic. He concludes that we are still a long way from being a borderless world.

My own view is that globalization has indeed advanced significantly in industries where a corporation from a country or a region has a distinctive, monetizable competitive advantage to offer in the global market. Examples abound. The computer industry, investment banking, hospitality industry, and education sector are all clear examples of the prominent market share that the US has in the global bazaar, thanks to the distinctive competitive advantages and brand positions built up by the US companies and universities in these sectors.

Let me give you a couple of examples of globalized operations leveraging the power of a flat world. Reebok and Nike are pretty good examples of such a corporation. During the early eighties, these pioneers of modern sports shoes realized the huge market potential for such shoes in advanced markets, and the tremendous cost efficiency, quality and productivity of labor in countries like Taiwan and South Korea. They hired brilliant designers in their markets like the US and Europe to design leading-edge sports shoes, they got them produced in Asian countries, hired brand experts and star brand ambassadors in G-7 countries to create powerful brands and gained huge sales. The result was a huge win for customers since they got world-class shoes at a fraction of the prevailing prices.

A second example is my own company – Infosys. In 1981, we realized that the demand for software in developed world would skyrocket, thanks to reduction in prices of hardware and availability of inexpensive software engines that support robust on-line transaction processing on minicomputers and super mini-computers. At the same time, we saw a tremendous shortage of skills in the developed world. Additionally, almost every prospect told us about the cost and time overruns in most software projects, and their

desire to bring engineering discipline to software development. Being in India, we found a large supply pool of technically-trained talent with excellent work ethic available at very competitive costs. This led to the creation of the Global Delivery Model, a model that is based on collaborative software development. In this model, about 20% to 25% of the work involving heavy customer interaction is delivered by our people at or near customer premises while 75% to 80% of the effort with little or no customer interaction is delivered from scalable, talent-rich, process-driven and cost-competitive development centers in countries like India and China. This model has resulted in the delivery of superior quality software at a fraction of the prevailing prices. Most importantly, over 95% of such projects were completed on time and within budgets against the then-prevailing average of only 45% of projects. This was a true win for our customers.

One aspect of globalization that has received most attention is Outsourcing, the globalization of services delivered from abroad. There have been several passionate arguments for and against outsourcing. Theory as well as data shows that outsourcing benefits a nation and her people, and that outsourcing is not the cause of wage declines or job losses. Well-known economists, Paul Krugman and Robert Lawrence, found that increased trade does not impact real income and that low-wage US workers do not suffer due to foreign trade and competition. According to David Ricardo, even if a country could produce everything more efficiently than another country, it would reap gains from specializing in what it was best at producing and trading with other nations. Heckscher-Ohlin theorem notes that a capital-abundant country will export capital-intensive goods, while a labor-abundant country will export labor-intensive goods. In fact, a research by McKinsey shows that US Corporations and its investors actually benefit from outsourcing their IT services to India.

What are the benefits of a flat world? Is it a panacea for the ills of world trade as made out by the proponents of globalization, or is it all bad as

made out by several journalists, special interest groups and human rights organizations? Let me cover a few benefits first, then talk about some concerns, and finally how we can overcome some of these concerns.

First, a flat world is clearly a powerful platform for leveraging global intelligentsia in enhancing the innovation power of corporations in the developed world. India and China, thanks to their huge population and their focus on higher technical education, have become reservoirs of technical talent. Every year, China produces 600,000 engineers and India produces 450,000 engineers. In comparison, the US produces 70,000 engineers, probably of a higher quality. Several global corporations have realized the importance of sourcing this global talent. For example, General Electric (GE) has setup an R and D laboratory, the largest R and D center of its kind outside the US, in Bangalore and over 1000 GE researchers work on leading-edge solutions out of this facility. Microsoft has established R and D facilities in China and India. Indian units of US firms like Cisco Systems, General Electric, IBM, Intel, Motorola and Texas Instruments filed over 1000 patents in the year 2004 alone. Manufacturing firms like Ford and Boeing see India as critical for their global supply chain and R & D. I can go on and on. The important point is that there is a vast pool of highly-educated talent in several emerging countries that can add value to the giant corporations of the US and the West.

Second, the demographics of the West will result in a large number of old people and retirees in the next 25 years. There is likely to be shortfall of labor even for basic services. For example, the share of the US population of people aged 65 and older is projected to increase from 10.7 percent in 2003 to almost 14 percent in 2015. Currently, the baby boomers alone represent around 27% of the total US population, and account for nearly half of US consumer expenditure. Additionally, the retirees would require services with very efficient cost structures since their post-retirement disposable incomes will be low. Countries like India with demographic advantage can provide

many of such services – accounting, legal, tax advice, travel and hotel bookings, medical appointments, and medical analysis - remotely at a fraction of the cost in the US.

Third, globalization enhances the competitiveness of corporations. In a competitive market which US is, corporations are forced to continually improve their efficiency, trim their costs and reduce the product prices to obtain larger market share. This is possible only if corporations can leverage the power of the flat world by moving some of their functions to less expensive places in the world. Such competitive positioning requires reduction of cycle times and improvement of productivity. One way of achieving these reductions and improvements is to use the power of 24-hour work-day by combining the prime time of the US with the prime time of countries like India and China which have abundant skilled professionals. These countries are 10 to 12 time zones away from the US. Such a move will also enhance the profits of US corporations so that they can employ more US labor, pay them better compensation and invest more in R and D. Thus, it is a win-win-win proposition for the corporation, the local labor and the outsourced countries.

Fourth, globalization helps a nation overcome its supply challenges. Thanks to tremendous focus on innovation in developed markets, there is considerable demand for qualified professionals in the US. The US has always been at the forefront of innovation, thanks to its world-beating talent. However, there is a huge shortage of professionals in most engineering areas, in general, and in Computer Science, in particular, in the US. The enrollment of students in Computer Science in the US, I am told, has gone down from 52,196 in 2001 to 48,046 in 2005. Interestingly, over 40% of the enrolled students are from abroad, particularly from India and China. Asian students account for over 44% of the total student visas in the US. Data shows that the US has benefited from immigration. A World Bank study noted that a 10 percent rise in the number of skilled immigrants as a

share of the US labor force tends to increase future patent applications by 0.8 percent and university patent grants by 1.3 percent.

Given that the living conditions in these talent-supplying countries are improving and the opportunities there for research are increasing, it is likely that these well-qualified people will return to their native lands. If the US corporations have to leverage their expertise, it is necessary to outsource some of the advanced work to these countries. It is best to remember the views of several well-known corporate leaders in the US that this country must have favorable immigration policies to enable the local corporations, particularly, the technology firms, to retain foreign students to continue and enhance the competitive position of these corporations.

Fifth, globalization expands the market geographically. Most corporations with traditional products like food, clothing and automobiles have found that the markets in developed nations have matured and the growth rates are low. Hence, they have started focusing on emerging markets. The opportunities offered by the flat world have enhanced the purchasing power in these countries, making these markets important. For example, India and China are some of the fastest growing markets for auto and airline industries. A recent report by PricewaterhouseCoopers notes that the BRIC countries — Brazil, Russia, India and China — will account for more than 40 percent of the forecast for global light vehicle assembly increases, and represent 52 percent of the industry's forecast for global capacity expansion during 2005-2010. Thus, providing outsourcing opportunities in some sectors to these countries will open up huge opportunities for corporations in developed countries like the US in other areas. This again is a win-win proposition.

Sixth, the flat world paradigm is sine qua non for a peaceful world. It is generally agreed that most of the anger, violence and terrorism that we see today is due to the huge economic divide that exists between the haves and

the have-nots. A sure way to reduce this divide is to focus on bringing the poorer world into the mainstream by making them trade partners so that it is a win-win proposition. A world concentrating on improving the quality of life through international trade is likely to be a peaceful world. Thanks to the multilateral trading system, ideological blocks get weakened. Once trade becomes the focus of relationship between two countries, any geo-political differences are likely to be resolved peacefully since no politician will be ready to lose trade and bring down the economic well being of his / her people.

Having covered the benefits from the flat world phenomenon let me now address some of the concerns expressed in this country about the flat world.

Clearly, the first concern is about the loss of some jobs in the short term. Critics argue that globalization favors outsourcing and increase in immigration, both of which result in job losses and lower wages. These are clearly important views. Robert Feenstra, Professor of Economics at University of California (Davis) and Gordon Hanson, Professor of Economics at University of California (San Diego) have examined the impact of outsourcing of labor intensive components on the US manufacturing firms. They concluded that outsourcing raised the real wages of US workers. Take the case of immigration. Philippe Legrain in his recent book, 'Immigrants', notes that flexible advanced economies can absorb large numbers of immigrants without any cost to native workers if the inflows are reasonably predictable, and with only a short-term cost to them if they are unexpected. Legrain looks at how cities like London, New York and Toronto have benefited from the diversity of immigrants. Quoting several studies, Legrain also concludes that the influx of immigrants does little or no harm to the wages or employment prospects of native workers.

My view is that short term job losses are inevitable if we want to create new opportunities for a larger number of people in the medium term, and to

provide better value-for-money for a large number of consumers. Let me give you an example. A few years ago, I was asked by a journalist in Australia about my views on the loss of jobs in Australia, I took the example of India and demonstrated how the entry of multinationals had benefited consumers in a big way even though there was some loss of jobs in the short term. I told the Australian journalist that I would any day accept benefit to a vast majority of people at the cost of a small number of jobs which is likely to get redistributed over a short period of time. Let me elaborate this with a few examples.

In my house, my old, wonderful Indian refrigerator has been replaced by a gleaming new one from a South Korean company. This indeed has led to some loss of jobs in India since many components for the new refrigerator are imported from South Korea. However, when the South Korean and the Western firms like Samsung, LG, Electrolux and Whirlpool started their manufacturing in India and sourcing components locally, they created more jobs than the jobs that were lost earlier.

I use a Toyota car to get to my office. India had just a few car manufacturing firms prior to the entry of companies like Toyota, Honda, Ford, GM and Suzuki. Hence, prior to the entry of these auto majors from abroad, the consumers had very little choice in selecting the cars. The quality of cars was very poor. When the global auto majors started expanding in India, the Indian players reported massive losses and some of them were even forced to shut down. This resulted in loss of jobs. Meanwhile, the entry of global majors expanded the car market and India now is among the fastest growing car markets of the world. This has resulted in a boom in the auto component industry creating huge employment opportunities in this sector. The story is the same even in the case of electronic equipments and computer hardware industries. I use a Dell computer in the office. We too had our computer manufacturers, not very efficient, but they had indeed created lots of jobs. These jobs were lost

since most of the computers and laptops are imported into India, today. Currently, firms like Flextronics, Dell and Nokia have their manufacturing locations in India creating thousands of new jobs in India. While India lost about 3 to 4 million jobs due to the closure of these old and inefficient domestic companies, the country has created at least three times the number of such jobs, thanks to these new multinational companies. More importantly, we have seen keener competition in the market; prices have come down; and the consumers have benefited immensely. Thus, while 3 to 4 million jobs were lost in the short term, the country has seen benefit to 300 to 400 million consumers. However, we *must* provide new opportunities to those people who have lost their jobs. This has indeed happened. A recent OECD report noted that India adds over 11 million jobs every year, thanks to globalization.

In the case of the US, the job market has adjusted itself positively. In a recent speech, Federal Reserve Board Chairman Ben S. Bernanke noted that a 'positive churn' in the US job market has resulted in higher-paying jobs. According to the Fed Chairman, over the past decade, nearly 16 million private-sector jobs have been eliminated each year in the US, while more than 17 million jobs are being created per year. Another study by Prof. Lori Kletzer which Prof. Jagdish Bhagwati quotes in his paper - "The muddles over outsourcing" - corroborates this. Prof. Kletzer examined three types of manufacturing industries by classifying them into low, medium and high import competing, based on the change in the import share during 1979-1994. Across the three groups of industries, about two-thirds of the people who were displaced earlier were reemployed within two years, with about half of that group ending up with jobs that paid roughly as much or more than their previous jobs and the other half experiencing a wage cut of 15 percent or more.

During the period 1965 to 2006, the share of imports in the US economy increased from 4.4 percent of GDP to 16.8 percent. Employment more than

doubled during that time, and the unemployment rate remained around 4.5 percent at both the beginning and end of this period. The average real compensation per hour in the US has nearly doubled since 1965.

The second concern is the possible lowering of quality of life for people in the developed world. Let us look at the data on per-capita GDP of the US itself. According to a recent paper published by the Economic Policy Institute, US trade with China has eliminated production that could have supported 2,166,000 US jobs during the period 1997 to 2006. However, during the same period, the per-capita GDP of US increased from \$ 31,011 in 1997 to about \$ 43,500 in 2006. This has happened because the US corporations have used innovation to move up the value chain, and created new products and services which other countries have not been able to do. The US has been able to export several high-end and innovative products with higher productivity or higher revenue per person. In comparison, the sales revenue per employee of products exported out of China or India is low. The US has always been and will continue to move up the chain in terms of higher sales per employee.

What is the solution to the temporary loss of jobs in the US brought about by the flat world? Even famous economists like Paul Samuelson have warned about the loss of jobs resulting from a flat world. Let me share my views on how to stem the loss of jobs. First, people who are entering the workforce must be well equipped to manage changing demands of workforce. To make this happen, they must be provided industry-oriented education and training. Second, the existing skill levels of the labor force must be increased. I understand that the Trade Adjustment Program which looks at offering up to thirty months of job training, income support and health insurance support is already looking into this.

It is best to remember the words of Jagdish Bhagwati, a well-known free-market economist, who has argued that the US will always maintain her

supremacy in global trade and will retain her prosperity if she continues her focus on higher education, innovation, and merit-based immigration policy to attract the best and the brightest. He notes that the US is a reasonably flexible, dynamic and innovative society and that the dynamic twists and turns of the US economy will produce higher-wage jobs.

Finally, let me reiterate that we need a flat world because it spreads the conviction of the US in free trade to the rest of the world; it benefits consumers from all over the world; it helps create a world with better opportunities for everybody in the world; and finally, it brings global trade to focus, shunning terrorism and creating a more peaceful world.

As a great admirer of the US, I am extremely optimistic that the US will continue to be the unquestioned leader in prosperity in this flat world through scientific and technological innovation.

Thank you.