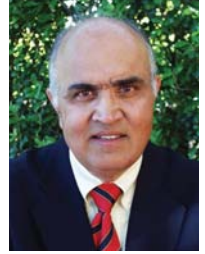


# Rise of Indians in Silicon Valley & Rise of India

By Kanwal REKHI



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## India & China: Different Paths

The rapid and sudden rise of India in the first decade of the 21st century has taken the world by surprise. Most people have been entranced by the unbelievably fast rise of China over the last three decades. Whereas the rise of China has been very visible in its export numbers, the amount of foreign direct investment (FDI) into China and, above all, its new and modern infrastructure, the rise of India has been hard to see and explain. It has received less than a 10th of the FDI into China and it still has creaky, old, very inadequate infrastructure. China has an efficient and purposeful government focused on building economic and military strength to lift its vast population out of poverty.

There has been a strong consensus in China about its goals and priorities; India on the other hand has a very chaotic and what would seem like a barely functioning democracy with its endless debates, and frequent change of government and priorities. India seemed to be muddling through while China was making grand strides. In spite of all this, the rise of India has become unmistakable. It appears that India and China are taking very different paths to the same destination. China has let a disciplined, technocratic elite have a free hand to drive progress top-down whereas India has let loose its entrepreneurial hordes to let things happen bottom-up. China clearly has an upper hand in the short term but what about the long term? I think jury is still out on that.

## Birth of World-class IT Industry

While there are many contributors to the rise of India (e.g. good demographics, economic liberalization in the 1990s), there is a very interesting and under-appreciated connection between the rise of India in this decade and the rise of Indian-American entrepreneurs in California's Silicon Valley during the 1980s and 1990s. Indian-Americans are among the most tenacious entrepreneurs who, in a very short period, boot-strapped themselves from the technical ranks into the highest ranks of entrepreneurial and business leadership.

Their rise has inspired their brethren in India to follow suit and build a world-class information technology (IT) industry which crossed \$50 billion in 2008, representing 5% of the Indian economy. This industry is expected to grow to \$300 billion by 2020. Nobody had foreseen the creation and growth of this industry. The role played by the government was almost adversarial until it became very clear that this industry was beginning to employ a large number of people and generate strong export income in a foreign currency-starved nation with seemingly no investments. Nothing, not in the least lack of infrastructure, was slowing it down. Lack of power, lack

of bandwidth, lack of available managerial talent, lack of capital and lack of government support were all overcome by entrepreneurs. This industry has trained its own talent and managers, generated its own power and organized itself to successfully lobby the government.

## Indian Immigrants Break Glass Ceiling

Indian immigration to the United States started in 1965, prompted by a change in immigration laws as a result of the Hart-Celler Act of 1965. This law removed national origin as the basis of immigration and replaced it with technical skills and expertise. The United States, in response to the Soviet lead in space in the early 1960s, felt that it needed to import scientists and engineers to catch up. This favored India, which had a large pool of trained manpower that was not finding suitable employment. In other words, the launch of Sputnik launched Indian immigration to the United States.

I came to the United States in 1967 and, after doing my masters in electrical engineering in Michigan, ended up in Silicon Valley in 1971. Most of the Indian immigration to the United States was of fresh graduates from newly established Indian institutes of technology (IITs), medical schools and Indian institutes of management (IIMs). These immigrants mostly came to universities for graduate studies. By the late 1960s and early 1970s they were getting employed in large numbers by industry, especially in the newly emerging and fast growing computer industry in Silicon Valley and along Boston's Route 128. By the late 1970s many had reached the top rungs of technical ladders and were beginning to butt against the glass ceilings of American corporations which would not admit them into management ranks.

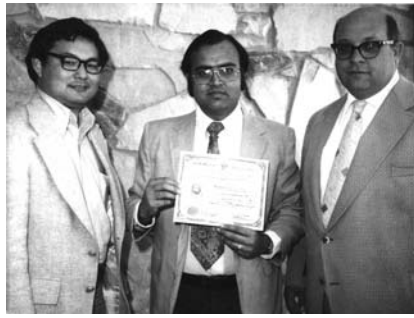
By the early 1980s, a handful of frustrated but talented engineers, including myself, took matters in their own hands and turned entrepreneurs. By the late 1980s many of us were successful in our new endeavors and were becoming very visible and inspirational to a set of entrepreneurs in the newly emerging IT industry in India. The emergence of the domestic IT industry in India was in a way a consequence of the Indian government asking IBM to leave India. This left a vacuum in the market where customers who had bought IBM machines still needed service and support for their hardware and software. Thus began the humble industry which a quarter of a century later became a world beater.

## Aggressive Pricing in Software Business

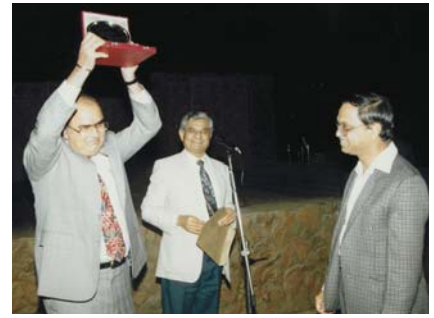
From the mid-1970s the rapidly emerging microprocessor industry started to transform the computer industry in the United States,



*The author (with a turban) on his first day in New York in 1967*



*The author poses with a citizenship certificate on the day he became a US citizen in 1975.*



*With Narayana Murthy, founder of Infosys, in 1993*

and IBM mainframes started to lose out to minicomputers, super microcomputers and eventually to personal computers. The software industry went through an even more radical change as operating systems started to standardize around UNIX and DOS. As early multiuser machines adopted UNIX as their operating systems, Indian entrepreneurs found an early niche in helping rewrite older applications on mainframes and minicomputers on these cheaper, newer machines. Rewriting an old application to work on a new machine is a tedious and time-consuming business that Americans were ill-suited to do, either by economics or by temperament.

Indian entrepreneurs grabbed this opportunity by aggressively pricing their services to become very attractive low-risk suppliers. Various techniques were used to grow rapidly. The most common initially was the wage arbitrage between the Indian worker and the US worker. Initial entrepreneurs sometimes offered onsite workers to be managed by customers themselves or offshoring work to India at lower rates. This wholesale conversion of applications had trained a large army of Indian engineers in most applications being used in the United States.

When the awareness of the millennium bug, later called the Y2K problem, started to worry users about its potential consequences in the mid-1990s, Indian entrepreneurs came to their rescue. For the next several years the Indian IT industry grew by leaps and bounds. The industry had reached \$1 billion in size by the end of the millennium.

### Highest-quality, Lowest-cost Suppliers

There was a fear that the industry would collapse after the work for the Y2K problem was over. This was not to be as the collapse of the dot-com industry caused havoc with industry players in the United States. Overnight, budgets were slashed, but the amount of work needed to be done remained the same. American customers, who had been working with Indian suppliers for almost a decade, turned to them en masse to do their work, first to get their applications converted and then to have them fixed.

The Indian industry took off like a rocket. The Indian entrepreneurs by then had become very seasoned and confident. They started to assume more responsibility and started to build strong in-house expertise in various aspects of software design and also in various industry verticals. They also started to innovate in-process engineering to improve quality and reduce costs. As a result, Indians have become highest-quality and lowest-cost suppliers. This has hastened the growth of the industry and this growth continues unabated.

The successful emergence of the IT industry has inspired entre-

preneurs in other industries. Old industries restructured themselves to become more entrepreneurial and competitive. Other high-value-added service industries requiring specialized talent have started to emerge in pharmaceuticals, biotechnology, custom-design engineering of automobile and machine tool parts, etc.

### Recipe Found for Development in Democracy, Economy

Early success of Indian entrepreneurs in Silicon Valley also inspired the Indian diaspora. Indians gained self-confidence and organized themselves to focus on entrepreneurship as their calling. Groups like TiE (The Indo-US Entrepreneurs) emerged to provide role models, mentoring and other kinds of support to younger entrepreneurs. TiE as an organization emerged in 1994; by 2009 it had grown into 53 chapters worldwide, including one in Tokyo. It has been instrumental in turbocharging Indian-American and later Indian entrepreneurship.

TiE has also engaged with policymakers in India to help change policy frameworks and was directly responsible for liberalization in the telecom industry in January of 2001. India had only one million cell-phones and 17 million landlines at the time. Today India has over 400 million cell-phones and almost 50 million landlines. Indian-Americans have emerged as most successful immigrants; they are the highest per-capita income group with almost double the national average. They are doctors, engineers, professors, business managers and entrepreneurs. Almost half a dozen of them are CEOs of "Fortune 500" companies.

Indian democracy has started to function in that the aspirations of the youthful Indian population are beginning to drive Indian politics. The most recent elections held in March through May 2009 showed the impatience of Indian voters with politicians who were not in synch with them. Only politicians who have responded to voter demands to focus on economics and efficiency were rewarded.

India, a very large and very diverse country, was plagued by illiteracy and extreme poverty at the time of independence. It seems to have found its recipe for development in democracy and entrepreneurial free-market economy. Sure, China is more efficient and is ahead of India in the short term, but I am not sure whether this will be the case in the long term.

**JS**

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