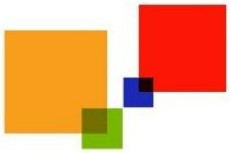

INDIA-U.S. PARTNERSHIP
$1 TRILLION BY 2030

By Nish Acharya

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The India-U.S. Partnership: $1 Trillion by 2030

1. Introduction

The United States and India must strive to create a $1 trillion economic relationship by 2030 not because it is easy, but because it is hard—to paraphrase that great American President and friend of India, John F. Kennedy.

An ambitious bilateral agenda will help both countries: it will put in place thinking, planning, innovation and execution by the private sector and entrepreneurs of both nations for mutual benefit and beyond. It will lay out a plan for the Indian economy to achieve its potential and for the U.S. to serve the needs of workers at home and consumers in the emerging markets of the world.

A joint agenda will necessitate intense collaboration by American and Indian companies across sectors as varied as technology and agriculture. And it will require governments and non-profits to move dramatically out of their comfort zones and welcome ideas, skills and execution from new sources.

How can this be achieved? Countless papers and books have been written about the enigma of US-India relations, about its opportunities, challenges and unrealized potential. Indians and Americans have spoken at conferences and in the media about the reasons why two countries—both managing diversity at a level that few other nations understand, yet committed to democracy and capitalism—cannot come together more often on the great issues of the day.

But the reality, as most experts understand, is that the short-term objectives of each nation have never been aligned. And until the information technology revolution in India began in the 1990s, there was little deep and sustained interaction between the people of the U.S. and India.

Today, the U.S. is the world's largest economy and India is the world's third largest by purchasing power parity. In 2030, the U.S. will, most likely, be the world's second largest economy, after China, and India will remain in third place.[1] Bilateral trade worth $1 trillion between India and the U.S. may not alter the rankings, but it will dramatically boost the size of both economies.

However, the current trade between the two nations, which is about $120 billion,[2] will not necessarily indicate the pathway to this eventual $1 trillion relationship. Most CEOs and analysts have so far only predicted slow and steady growth that can gradually lead to $500 billion in bilateral trade and investment, as U.S. Vice President Joe Biden has suggested.[3]

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[1] Standard Chartered Research, November 2013

[2] U.S. International Trade Commission, April 2013

[3] Government of the United States, *Remarks by Vice President Joe Biden on the U.S.-India Partnership at the Bombay Stock Exchange*, 24 July 2013, <http://www.whitehouse.gov/the-press-office/2013/07/24/remarks-vice-president-joe-biden-us-india-partnership-bombay-stock-excha>

That will not help India to transform its economy or America to be better prepared for global competition. Instead, the India-U.S. relationship has to look like the relationship the U.S. has with countries such as Mexico, South Korea and Israel. These countries are not part of the G7 but have deep-seated economic ties with the U.S, and a consistency in policy and collaboration that the U.S. and India must strive for.

A goal of $1 trillion can accelerate an economic growth curve that rivals the "hockey stick" growth curve promised by startups everywhere. For precedent, we can look to the impact of economic liberalization and the IT revolution. From 1991-1992, when India embarked on economic reforms, to 1996, when outsourcing contracts began to accelerate, foreign direct investment in India increased 40 fold—from $132 million to $5.3 billion.[4]

This, then, is the lodestar for the bilateral's future. India and the U.S. must look for the correct combination of disruptive innovation, business model transformation, and robust policy reform that can lead to a similar economic acceleration and possibly a $1 trillion partnership.

2. Identifying new opportunities

This alternative viewpoint came through loud and clear when Gateway House interviewed more than 40 senior American and Indian leaders in business, government, philanthropy and academia.

Among these global leaders, there is a consensus that we have only scratched the surface of the real opportunity for U.S.-India economic integration. They repeatedly identified opportunities where India can benefit from American experience, systems thinking and deep knowledge, as well as areas where the U.S. can benefit from Indian experience, process innovation and human capital. They all spoke of the changing dynamics of the global economy, of the strengths and weaknesses of both countries, and of the possibilities of technologies on the horizon to improve the human condition.

In 2014, the global economic reality is very different from the scenario in 1992 or even in 2000. A variety of factors, including India's development, globalization and the drastically reduced cost of conducting business worldwide, now offer many more opportunities for interaction between the U.S. and India than have ever existed.

But the conventional narrative of India as a place where American companies can sell to the emerging middle class, or where Indian companies serve as the back-office and IT hub for American companies, only tells a part of the story.

Instead, three major changes in the economic equation can have an exponential impact on U.S.-India economic relations:

[4]Ajay Singh and Arjuna Ranawana; Asiaweek, March 2007.

- The first is the growing capability of Indian companies, managers and professionals to solve complex global problems. Over two decades, Indian IT companies and Indians working for American companies have delivered on complex business projects spanning multiple countries and industry verticals. This has given them a level of expertise and business experience comparable to their counterparts in the U.S., Europe and East Asia.
- Secondly, Indian companies have built upon their experiences in IT and pharmaceuticals, and now create products and services for world markets. Major companies like Tata, Mahindra, ONGC and Godrej have become true multinationals with a global presence, diverse workforces and global strategies.
- Finally, the rapidly decreasing cost of doing business worldwide—including the role of cloud computing, 3D printing, rapid prototyping software and crowd-funding, will have a dramatic impact on where innovation occurs, how it is commercialized by entrepreneurs and companies, and what markets a product or service can reach.

This is an opportunity that is ripe for corporate India, which has made its mark on low-cost innovation and by optimizing its large, relatively low-cost labor force. American companies will be able to leverage these same capabilities.

2.1 Four opportunity areas for India

These broad changes, as described by several experts, manifest into four major opportunity areas (*see Section 3 for more on this*) for India to rapidly grow its economy and benefit from the U.S.'s engagement. This is what India must do:

i. Create a "**surge**" in the areas it needs to immediately address, like infrastructure, healthcare, energy and agriculture.
ii. Strive to create a "**Silicon Swadesh**" or a culture of homegrown innovation and entrepreneurship across various Indian cities.
iii. Build **a better ramp** for the 42% of its population that still lives in poverty by global standards to join the formal economy. [5]
iv. Take advantage of those **next generation technologies,** for which it is well suited to create an industrial base in India from which products and services can be sold, and hundreds of millions of jobs for Indians created. In each case, American experience, managerial talent, innovation and systems thinking can be helpful to Indians.

2.2 Four opportunity areas for America

Similarly, there are four major areas (*see Section 4 for more on this*) where the U.S. and American companies can greatly benefit from India and Indian companies.

i. The people of India continue to have a major impact on the American economy—from entrepreneurs to healthcare professionals and small business owners. Indeed, Bloomberg

[5] World Bank, *Poverty headcount ratio at $2 a day (PPP) (% of population)*, India-2010, <http://data.worldbank.org/indicator/SI.POV.2DAY>

estimates that nearly 1/3 of Silicon Valley companies now have an Indian entrepreneur as a co-founder.[6]

ii. Indian companies are bringing relevant business models to the U.S. In an era where research funding is being cut and corporations are still hiring below historic rates, there are lessons to be learned from the Indian public, private and NGO sectors about innovation and scale.

iii. Americans can take greater advantage of the growing class of global Indians, with the disposable income to travel and study in the U.S., and an affinity for high-end American products.

iv. America must put its global leadership in innovation and entrepreneurship to work by creating affordable products and services that can improve the lives of hundreds of millions of middle class, working class and poor citizens in India and across the developing world.

2.3 Foundational steps on both sides

The thought leaders that Gateway House spoke with also agreed that each nation has to take specific foundational steps before it can truly take advantage of the opportunity provided by international partners. Many American executives felt that:

- Indian companies must behave in a more consistent and transparent manner about projects, responsibilities and financing, regardless of the pressures they face from the Indian government or corrupt officials.
- Indian managers, politicians and the media cannot assume that Americans are only there to exploit, plunge and pillage India. They are there to build their business.
- Many experts expressed a desire to see India embrace external expertise in new technologies and for more complex projects—such as computational drug design, or building world-class infrastructure. In other words, to acknowledge that they don't know what they don't know. Without these adjustments, American technology and expertise will be far less useful than it could be.

On the other side:

- Americans must broadly recognize that they are a part of the global economy—an economy where smart people live and work around the world.
- Americans must accept that Indians are not out to steal their jobs, and Indians too want the U.S. economy to succeed—the Indian economy is already too closely tied to it.
- And beyond policy, a broader swath of Americans must understand the impact immigrants have on the U.S. economy, and continue to maintain open doors for the best and brightest to stay in America—many of whom come from India.

[6] Bloomberg Businessweek, April 2014

3. What India can do to partner with the U.S.: four major opportunity areas

3.1. An Indian "surge"

A "surge" has come to mean the rapid and intense deployment of talented individuals and technical experts to address critical and immediate challenges. And in several areas of its development, India is in need of a surge. Since taking office, Prime Minister Narendra Modi has often touched upon many of the critical challenges that are facing Indians—including poor infrastructure, unreliable energy, public health, particularly as it relates to sanitation, and rural development. In fact, hundreds of millions of Indians need more productivity from these sectors, and India needs to improve its overall productivity to achieve its economic goals.

But the size of the challenge makes it important for India to invite American, and indeed, global, participation. There are too many bridge, roads, ports, airports and hospitals to build, and farms to be made more productive, for India's firms to handle it all by themselves. A surge will be a chance to invite companies from the U.S. and elsewhere to immediately begin working on critical infrastructure and development issues.

The prime minister declared, in his Independence Day address on 15 August this year, many of these sectors as priority—promising resources and government attention. With interest rates still near historic lows worldwide, capital is readily available for large, long-term construction and development projects.

American companies, and there are lots of them, have deep and varied experience in these sectors. They have been the world leaders in building complex infrastructure, energy, food production systems and supply chains. And they work well with capital equipment providers and OEMs in Japan, which is a significant investor in India. In every major sector, there are models of American companies working alone or in tandem with Indian partners to construct the building blocks for long-term success.

The following can be models for how India can address these critical challenges by involving American and Indian partnerships:

- The Tata Group launched Tata Advanced Systems several years ago to integrate the expertise of various divisions of the company to work in sectors that require complex integrated systems—aviation and defense. Tata realized that it can utilize its massive IT workforce for more complex challenges. One of its recent successes was the completion of a state-of-the-art helicopter project with United Technologies, a leading U.S. defense contractor. Indian IT has a multi-billion dollar opportunity to use its massive workforce for more upscale technology work—particularly in defense.
- U.S.-based Gilead Pharmaceuticals has found a way to bring its path-breaking medications to India without losing control of its brand and product management. It will be making its new hepatitis drug, Sovaldi, available to Indian patients at a 99% discount

over U.S. costs.[7] Gilead realized that it could continue to make enormous profits from sales in the U.S., Europe and Japan, while reaching the developing world without compromising intellectual property, licenses or control over manufacturing. Gilead used a similar strategy for its HIV medication in partnership with Indian generic manufacturers. In each case, it maintained control of its drug, brand, marketing and production. For pharmaceuticals, this may be a transitional business model until the contentious issues around intellectual property are negotiated by India and the U.S.

- The Public Health Foundation of India (PHFI) was launched in 2006 with a mission to create a cadre of public health workers, improve the public administration of healthcare services in India, and build eight Indian Institutes of Public Health. It is doing so with a who's who of global partners, including 13 major American schools of public health such as Harvard University and Johns Hopkins University, as well as the Gates Foundation and McKinsey. By drawing on the global expertise of these partners, PHFI is rapidly changing the face of public health in India. India has the opportunity to create similar partnerships with American institutions across economic sectors.
- Walmart and Pepsi, stalwart American companies, realized early on that to succeed in India, they would need to invest in their partners directly—improving farmers' productivity, creating a consistent supply chain, and training distributors in Walmart's global best practices. Walmart and Pepsi have trained over 20,000 farmers in India to become reliable procurement partners. American companies looking to succeed in India over the long-term can make similar investments in the education and skills of the Indians they need. And India will benefit greatly if it invites foreign corporations with the expectation that they too will invest in Indian workers.
- Climate change remains a thorny issue between the U.S. and Indian governments, but American companies are finding ways to partner to help India achieve its goals around energy efficiency, green building construction and adherence to global warming treaties. HCL and Echelon are partnering to improve Indian energy metering,[8] while IBM is working with Tata Power on a smart grid for New Delhi.[9] American solar manufacturer Suniva is partnering with Reliance Industries on India's first 1MW solar plant.[10]

3.2 The "Silicon Swadesh"

Creating opportunities for the disenfranchised to participate in the Indian economy and addressing pressing needs are important. But if India is to truly become a modern economy, it cannot simply be trying to "catch up" with China and the West. It must also make the leap to leader and innovator of new technologies that can create millions of new jobs for Indians. For this, it first needs a robust entrepreneurial ecosystem modeled after Silicon Valley in the U.S.

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[7] Silverman, Ed. 'How Much? Gilead Will Charge $900 for Sovaldi in India', *The Wall Street Journal,* 7 August 2014, <http://blogs.wsj.com/pharmalot/2014/08/07/how-much-gilead-will-charge-900-for-sovaldi-in-india/>

[8] HCL, *HCL Infosystems and Echelon Partner to Bring Smart Metering to India*, 9 July 2008, < http://www.hclinfotech.in/news_alert/hcl-infosystems-and-echelon-partner-to-bring-smart-metering-to-india/>

[9] IBM, *IBM and Tata Power Delhi Distribution Collaborate to Accelerate Smart Grid Deployment in India*, 3 October 2013, <http://www-03.ibm.com/press/in/en/pressrelease/42127.wss>

[10] Bloomberg, April 2010

India has had significant startup success in the information technology sector, and there is no shortage of startup companies in Bangalore, Hyderabad, Mumbai or New Delhi. But it has not created the entrepreneurial ecosystems that are required for producing a consistent quality of startup companies. This means enabling NGOs that promote entrepreneurship and support entrepreneurs, networks of angel investors, crowd-funding sites, the means to connect entrepreneurs to mentors and professional service providers like lawyers and accountants, and the capital that is available to raise as the company grows.

That, and a culture that encourages failure and experimentation, is how India will find its next Infosys or Zydus. Fortunately, there are several Indian startups that are growing into world-class companies using the Silicon Valley model. They have benefited from work experience in the U.S., and strong global networks like the The Indus Entrepreneurs (TiE), which has chapters in 42 cities around the world. Here are a few examples:

- Flipkart, India's leading e-commerce provider, is one of the few startups worldwide to have ever raised over $1 billion. It is building itself on the lines of Amazon.com and other American companies with a focus on growth and customer satisfaction. Flipkart's success proves the ability of homegrown Indian startups to grow and compete globally.
- Tejas Networks was the first product-based startup company to receive venture capital in India. It was able to do so by developing high quality but low-cost telecommunications equipment for emerging markets, and by tapping into concerns about telecommunication equipment from China and other nations. While based in Bangalore, Tejas has used its ambitious plans to secure global investment, a seasoned management team from around the world, and clients in multiple nations.
- Vaatsalya Hospitals is not a technology startup, but it is one of the fastest growing healthcare providers in India, with 17 hospitals, 1,200 beds and serving over 500,000 Indian patients worldwide.[11] It is proving that the venture-backed startup model can succeed in India outside of the IT sector. It also serves a so-far neglected market for Indian healthcare—those making Rs. 15,000 or less monthly. Like its counterparts in the IT space, Vaatsalya developed a business model, secured outside investment, cultivated partnerships with leading healthcare organizations, and focused on a large, untapped market opportunity.
- Sankalp Semiconductors has built a decentralized contract research organization based in Hubli, Karnataka. Sankalp is leveraging the untapped engineering talent of Tier II cities like Hubli to conduct R&D and product development for technology giants like Texas Instruments. Sankalp has been named one of India's fastest growing startups by Deloitte and Red Herring for its ability to create high quality products for clients through a decentralized approach and recruit talent from Tier II cities.
- The National Entrepreneurship Network, organized by the Wadhwani Foundation, has helped set up entrepreneurship centers in 550 colleges, institutes and universities across

[11] Vaatsalya, *Vaatsalya is mentioned in Business Today's article "Change Therapy"*, 11 December 2012, <http://vaatsalya.com/2014/?q=Business%20today%20Change%20Therapy>

India.[12] India's college students everywhere can now participate in business plan competitions, and meet mentors, investors and potential customers for their new products.

Many more such efforts are necessary if India is to set up the next 1,000 similarly successful companies across the country.

3.3 Ramps for the "base of the pyramid"

While it is building highways, India must make sure there are enough ramps to connect to the population at the base of pyramid—or the 42% of Indians who live below the World Bank poverty line of $1.25 a day.[13]

India has seen an explosion of social entrepreneurs, entrepreneurs, microfinance organizations and multinationals looking at its 600,000 villages and countless urban slums as business opportunities. India's NGOs and social enterprises have a remarkable ability to identify problems and scale their operations to serve large numbers of Indian people. But as they have become bigger, they have not always built the deep subject matter expertise and systems—organizational or political—which are required to achieve real lasting impact.

This is where American NGOs and entrepreneurs are strongest and can be of assistance. The examples below are of NGOs and companies that are drawing on American models or expertise to create a path-breaking impact in India.

- The Akshaya Patra Foundation has quickly grown into one of the world's largest NGOs by creating an indigenous model for cooking and delivering a daily school lunch to over 1.3 million Indian children. The ability to cook over 300 million meals annually and deliver them to government schools came from the rigorous application of engineering and business principles to school lunches at a fraction of what other global programs cost. Once the foundation had developed a sustainable business model and proven its capabilities to construct and cook, Akshaya Patra embraced an American-style fundraising model that is raising more money in India than outside.
- The Deshpande Foundation, based in the U.S., but with major operations in India, has been working for the last decade to improve the local water supply in northwest Karnataka. It uses a combination of support for local NGOs and the education of farmers and local *panchayats* about water usage. Once these NGOs became established partners in their communities, the foundation partnered with the Tata Trusts to bring in capital equipment. It then trained engineers to rapidly scale up to excavate and clean 1,000 ponds in the area. Now that the building blocks are in place, the foundation can think about municipal water systems—for irrigation, sanitation and consumption.
- Team Lease has grown to become one of India's largest employers. It has made available temporary jobs to over 60,000 Indians—including truck drivers, day laborers and

[12] Wadhwani Foundation, National Entrepreneurship Network, *About NEN*, <http://nenonline.org/aboutnen/about_nen>

[13] World Bank, *Poverty headcount ratio at $2 a day (PPP) (% of population)*, India-2010, <http://data.worldbank.org/indicator/SI.POV.2DAY>

domestic workers, all of who use their mobile phones to find out about opportunities through Team Lease. The company built itself like a Silicon Valley-style startup, but connected India's people to the Internet and to opportunity.

- America's United Way Worldwide is the world's largest philanthropy; it provides $4 billion in grants worldwide annually.[14] In 2007, it launched in India to bring its model of corporate philanthropy around major local issues. It has organized chapters in Mumbai, Delhi, Bangalore, Kolkata, Hyderabad and Baroda and is mobilizing corporations to coordinate their corporate social responsibility (CSR) programs. India's CSR is well behind that of the U.S. and other developed countries. Although India now has a new CSR law, much more can be done through peer collaboration than by government fiat.
- Several American startups are developing low-cost, green toilet and sanitation technologies in partnership with Indian NGOs. Not only has Prime Minister Modi identified toilets as a national priority, but India's path-breaking NGO, Sulabh International, has already shown that Indians are willing to pay for clean, functioning toilets. Sulabh has scaled to 8,000 pay-for-use toilets across India, and introduced technology that is being used in over 1.2 million homes. Partnerships between American startups and Sulabh are creating various sanitation solutions for the different environments of India.

3.4 Next generation technologies

India and the U.S can collaborate on new technologies that are transforming the way the world does business. These include cloud computing, synthetic biology and genetically modified food production, 3D printing and next generation farming. India must embrace these technologies because they will help the country to create millions of jobs for its citizens over the next few decades. The technologies will also enable India to move beyond its current reputation as a low-cost alternative to existing systems and become a leader in business areas that attract investment, innovation and global talent.

India is particularly well-placed to take advantage of some technologies. With the U.S.'s pioneering work in these areas, the collaboration can run from research to sales. India must invest heavily in training its workforce to use these new technologies. Here are a few examples:

- Collaborations with the U.S. such as with the Indo-US Collaborative for Engineering Education (IUCEE) connect Indian universities with the research universities in the U.S that discovered these technologies. Launched by the University of Massachusetts at Lowell and 20 American universities in 2007, this organization, similar to PHFI, is bringing faculty and business executives from the U.S. to India to improve the quality of Tier II and Tier III Indian engineering colleges—where much of the workforce comes from. So far, they have reached nearly 50,000 engineering faculty and graduate students across India to improve their curriculum and learn about new technologies.
- The relatively new technology of 3D printing has the potential to disrupt manufacturing through the mass customization of products, and rapidly reduce costs by allowing

[14] United Way Worldwide, 2013 Annual Report

manufacturers to produce in units of 1—rather than 1,000 or 1 million. For India, the low-cost of 3D printers, starting at $1,200,[15] makes them a viable pillar of the country's manufacturing strategy. Purchasing printers for rural communities is significantly less expensive than building large, labor-intensive and capital-intensive facilities. American partnerships will be critical. Currently, American companies produce most of the printers and are leaders in most of the applications of this technology—from food preparation to medical device manufacturing, prosthetics and plastics production.

- Synthetic biology promises to design and construct biological parts, devices and systems through biomedical engineering, data analytics, gene sequencing and research that can improve human health and global ecology. India has one of the world's most diverse populations and topographies. Regions like the Western Ghats have been identified as global biodiversity hot-spots. India can tap into its biodiversity to become a leader in this emerging field and pioneer research in areas where Indians encounter health challenges. Here too, most of the research and corporate leadership resides in the U.S.
- A visit to Green Sense Farms in Indiana in the U.S. gives us a sense of what Indian agriculture could look like in 15 years. By using LED-lit greenhouses, drip irrigation, vertical beds and no pesticides, startups like Green Sense are producing comparable yields using 1% of the land, water and fertilizer as traditional farming.[16] Given India's growing challenges with water and climate change, such agricultural leaps will be necessary for the 60% of Indians who still farm.
- India's IT sector has created 10 million jobs in the country and over $100 billion in revenue. Where will the next 10 million jobs in IT come from? The high end jobs will come from Indian IT companies moving upstream to tackle the coding needs of mobility, the apps economy, social media and big data analytics. More importantly, they will come from impact sourcing opportunities—or opportunities to bring IT jobs to Tier II and Tier III cities to manage relatively simple tasks like image tagging and local language call center work. While not as lucrative, these tasks are large in scale and provide effective, low-cost on-the-job training for IT companies. Media companies like Warner Brothers, for example, have outsourced image tagging work in this manner. Tutor Vista, an American company based in Silicon Valley and Bangalore, has also partnered with Next Wealth, an impact sourcing firm to create 1,000 jobs in Tier II cities.

4. What the U.S. can do to partner with India: four major opportunity areas

As a result of India's development and global connectivity, there are now multiple ways in which Indian companies, people and organizations can be partners in solving the greatest challenges facing the U.S. Some of the benefits of deeper ties with India, like high-skilled immigration, are well understood by Americans. Others, like creating products and services for the Indian market, will require a greater cultural awareness and ambition than currently exists.

These are the four major areas where India and Indians can help the U.S.:

[15] Ngo, Dong. 'Monoprice introduces $1,200 Dual Color Extrusion 3D printer', *CNET*, 15 May 2014, <http://www.cnet.com/news/monoprice-intros-affordable-dual-color-extrusion-3d-printer/>

[16] Green Sense Farms, <http://greensensefarms.com/>

4.1 Diasporas, doctors and entrepreneurs

First, India can continue to provide its people to the United States. Since the mid 1960s, over 3 million Indian Americans have migrated to the U.S.[17] They have assimilated and become the ethnic community with the highest rates of education, home ownership and disposable income. They are often leaders in several sectors, including entrepreneurship, small business and healthcare. In fact, a combination of demographics, skills mismatch and cost will force the U.S. to rely even more on skilled immigrants in the near future.

- Entrepreneurs: Bloomberg estimates that nearly 33% of Silicon Valley startups now have an Indian American co-founder.[18] Similar figures are emerging in other entrepreneurial hubs like Boston, New York and San Diego. Data of the U.S. Census and the Kauffman Foundation show that high-growth startups are creating a majority of the jobs in the U.S. over the last decade.[19]
- Healthcare professionals: 40,000 physicians in the U.S. are Indian American, accounting for about 7% of American physicians.[20] The number of nurses and home healthcare aides arriving from India has spiked in the last decade. As America's baby boomers age, retire and require greater medical attention, the country will import more doctors, nurses and allied health professionals. India will be a major source of this workforce.
- Mahindra GenZe: The Mahindra Group, at $8 billion, is one of India's largest conglomerates. The company used the insights it gained from selling tractors in the U.S. for the last 20 years—a strategy that made Mahindra the third-largest seller of tractors in the U.S.—to launch GenZe, a rechargeable electric bike. With GenZe, Mahindra saw the value in building the company entirely autonomously in the U.S.—with design and market research in Silicon Valley, and construction in Detroit.

4.2 Indian models for America

In recent years, American organizations have struggled with the budget limitations caused by global competition and the recession. As a result, many are now looking at India's expertise in low-cost innovation, constant process improvement and frugal budgeting. Indian organizations also have the ability to scale programs quickly, whereas American non-profits and government programs often struggle to transform themselves. Several model programs are of relevance to the U.S., including:

- Infosys and Wayne County Community College: The Infosys Leadership Institute has become the industry standard for corporate training programs worldwide. Annually, Infosys trains 15,000-20,000 new hires at this institute in Mysore for 6-18 months.[21] They learn English, professional skills, soft skills, computer programming and other tasks that

[17] U.S. Census Bureau, 2011
[18] Bloomberg Businessweek, April 2014
[19] Kaufmann Foundation, 'The Importance of High Growth Startups in Job Creation and Destruction', July 2010
[20] American Association of Physicians of Indian Origin, <http://aapiusa.org/>
[21] Infosys Leadership Institute Annual Report 2012

they will have to know when deployed by Infosys. In 2009, this model was brought to Wayne County Community College in Michigan to quickly train Americans to enter the technology sector. At the end of a shortened 18-week program, all 73 participants graduated and got jobs at technology companies.[22] The program moved faster and more comprehensively than nearly any American workforce training program. It has since been replicated by Cisco's Academies and a national non-profit called Year Up.

- Agastya International Foundation: This Bangalore-based NGO has scaled its science education programs to reach 1 million children in India through 1800 science fairs, mobile science van visits and science museum construction.[23] Its rapid growth, in less than a decade, comes from an ongoing process of experimenting with new programs and implementing those that show the most potential for growth and impact; it also discards programs that are not showing as much potential as expected. In comparison, most American education groups struggle to scale beyond a few school districts—in part because of their inability to adopt a business model that adjusts to different environments. Given the importance Americans are giving to science, technology, engineering and math skills, Agastya's model may offer important lessons, and these are now being promoted in New York and California by the foundation's U.S. subsidiary.
- Tata Innovista: For several years, the Tata Group has hosted a global innovation challenge for employees across its various companies. Last year, teams from Vitamin Water, Tata Tea, Jaguar, Tata Chemicals and Tata Consultancy Services competed in the North American regional finals in Washington, D.C. Teams competed on criteria such as process innovation, improvements in efficiency, new business models and disruptive innovation. Not many American companies have instituted competitions in the way that Innovista has done for Tata. Those that do are only focused on disruptive innovation leading to blockbuster products, rather than multiple innovations across sectors that lead to better performance and more revenue.

4.3 Serving the global Indian

With the growth of the upper middle class, or the "global Indian"—estimated to be as many as 100 million people—the U.S. has an opportunity to use its strong brands—of the country itself as well as of its products—to reach this new customer. Global Indians often study and work abroad, and have family, friends and life-long connections in the U.S. Here are some of the immediate ways in which the U.S. is tapping into this brand loyalty.

- Higher education: American universities now see India and Indian students as a growth market. Already, Indian students contribute $2 billion to the U.S. economy through higher education.[24] With comprehensive immigration reform, this figure may double. In India, universities like Northeastern University have offered executive education programs, both general and targeted. They are developing partnerships with local

[22] Infosys, *Infosys And Wayne County Community College Celebrate 73 Graduates Of Technology Training Program*, 20 July 2012, <http://www.infosys.com/newsroom/press-releases/Pages/celebrate-graduates-technology-training.aspx>

[23] Agastya 2013 Annual Report

[24] Associated Chambers of Commerce and Industry India, June 2014

universities to offer degree, certificate and exchange programs. Northeastern has partnered with the Confederation of Indian Industry to bring its pioneering program of experiential learning to India, where graduate employability stands at just 50%.[25] Overall, as India seeks to add an additional 100 million college graduates to its ranks in the next decade, American universities can play a much-needed role as thought leader, researcher and as a source of seats for Indian students.

- Harley Davidson: This American icon entered the Indian market in 2008 as part of a landmark trade deal between the U.S. and India. In just five years, it has become the market leader for high-end motorcycles in India, and has built a manufacturing facility for motorcycles in Haryana. It has managed to grow steadily and maintain the allegiance of Indian enthusiasts in much the same way it has done in the U.S.
- The Indian tourist: As disposable income grows in India, the number of Indians who travel for leisure—to the U.S. and within India—will grow significantly. Significantly for America's tourism and hospitality industries, they will return to India and demand the same experiences closer to home.

4.4 Innovations for development

At business plan contests across America, there is usually a category for development entrepreneurs: those developing clean water filters, clean-burning stoves or public health devices for the developing world. Their inventions are technologically cutting edge, and they are high on commitment to make a difference. Many want to launch in India because of India's large population of NGOs and the challenge of the country's major problems. These entrepreneurs want to collaborate with Indian partners on research, innovation, experimentation, market research, and innovative marketing to reach customers who can pay 1% the price of what an American pays for the same product.

For the U.S., these categories open a world of nearly 5 billion people to American products, brands and services. Major American companies like Citigroup and P&G have publicly announced that their next billion customers will come from this population. To take full advantage of this opportunity, the companies will have to invest in research, development, prototyping, market research, heavy marketing and collaboration with Indian partners. There are many pioneering examples in this growing space, including these:

- Startups in development: Organizations like Embrace and Logistimo are taking their high-end technology innovations and building businesses in India at price points favorable to Indians. Embrace, launched by Stanford students, has developed a baby incubator that costs 10% of what mainstream American incubators cost, while providing the portability necessary for India. Logistimo, launched by an MIT graduate student, is developing software solutions for healthcare practitioners in India to manage inventory, track health indicators for clinical trials and supply chain management. Both developed their technologies in the laboratories of America's great universities, but did not insist on intellectual property or valuations. Instead, they moved to India and began building local

[25] Applied Minds, 2009 National Employability Report

relationships and teams. As these companies grow, they will create design, research and management jobs in the U.S., and shareholder value.

- Joint research commercialization: In recent years, the American and Indian governments have established two different forums to drive more research between universities and companies in both countries. The United States-India Science and Technology Endowment Fund and the Indo-US Science and Technology Forum provide funds to researchers to jointly collaborate with colleagues in the U.S. or India on critical issues of the day. These programs have the potential to become like the BIRD Foundation, which has provided similar grants to U.S. and Israeli researchers since 1977. That program has been a tremendous success—providing over $300 million in grants to more than 800 companies and institutions.[26] Those companies today have a value over $10 billion—a return any venture capitalist would be happy with.
- Food security for the 21st century: The UC Davis Sustainable Ag Tech Innovation Center is focused on solving the challenges of food security for the 21st century. UC Davis is working with researchers and entrepreneurs to develop higher performance seed stock and business models to make that stock available quickly to a large portion of the developing world's farmers. It is well known that world food production needs to rapidly increase in order to meet the demands of a developing planet. It is also well-known that approaches like the Green Revolution of the 1960s and 1970s may not be possible today without significant environmental damage. UC Davis, working with partners in India and elsewhere, is a unique opportunity for the U.S. to innovate in agriculture and combine it with entrepreneurial business models with Indians.

5. Conclusion

As envisioned in the preceding summary, cooperation between the U.S. and India is possible in virtually every sector of the economy in both countries.

The tailwinds remain strong—a strong personal affinity between Indians and Americans, a mutual respect and admiration shared between two messy democracies, and a set of shared values.

As opposed to earlier moments in history, the bilateral opportunity we have today is truly two-way—made possible and accelerated by India's development and expertise in the technology and IT sectors. Indian IT companies are now plugged into Corporate America—and are viewed as non-threatening and no differently than companies from other western nations, Israel or Japan.

Challenges do exist, which stem from the different world views of both countries and their different domestic political demands. But both India and the U.S. must sidestep being enmeshed in the challenges of specific industries or letting the bad behavior of particular individuals or corporations define the relationship.

[26] BIRD Foundation 2013 Annual Report

The broader opportunity is much clearer. The U.S. has the innovation, entrepreneurship, capital and global delivery expertise that India needs in nearly every sector of the economy—from infrastructure to tourism and biomedical research. And India has the ability to rapidly adapt technology at low-cost and an army of well-trained professionals.

So our short term goals may still not be well-aligned. But for once, our long-term goals seem to be well synchronized.

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About the author

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Until recently he was with the Obama administration as the director of innovation and entrepreneurship, and senior advisor to the secretary of commerce. Prior to these positions, he was executive director of the Deshpande Foundation, a prominent American philanthropy group focused on innovation, entrepreneurship, and scalability around the world.

Nish currently serves on the advisory board of The Economist Higher Education Forum and was previously a member of the Council on Foreign Relations, the Bretton Woods Committee, the Indus Entrepreneurs, and the Clinton Global Initiative. He was also a board member of Akshaya Patra USA and the United Way Worldwide Global Advisory Board.

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