



## Emerging Technologies and the Imperative of Indo-U.S. Cooperation

*This Policy Note explores India and U.S. relations in the context of burgeoning business opportunities that both nations are attempting to harness in the information technology space. With the advent of emerging technologies and disruptive start-up ecosystems, both superpowers must look at further strengthening existing relations in these domains. Technology solutions are transforming future of work and businesses, and both nations must combine their respective potentials to progress.*

### Context: Caught on the Wrong Foot

Indo-U.S. ties in the information technology (IT) space have been undoubtedly strained, more so in recent months, over contentious issues such as H-1B visa grants to employees of Indian IT companies and demand for data localization by local units of multinational companies. Data localization, appears to be important for India in the context of data control and security. However, it may impact U.S.-based tech companies and payment gateways that have a strong presence in India, but do not store content locally. Setting up data centres in India will add to their cost of doing business here, which is why the proposal has [also not found favour with the US government](#). Ironically, even as Indian and U.S. governments appear to be dealing a bad hand to big tech companies in their respective countries, start-ups appear to be finding favour with industry bodies and these governments.

### Thawing the Ice

Given this backdrop, Indian start-ups that deal with emerging technologies such as artificial intelligence (AI), internet of things (IoT), robotics and automation, 3D printing, augmented-and-virtual reality (AR-VR), blockchain, etc. could provide policy makers much-needed opportunity to improve trade relations between the two countries.

Start-ups providing AI solutions are a case in point. As per [an August 2018 study](#) by US-based National Bureau of Economic Research, AI-powered translation systems help eliminate natural barriers and increase international trade. As per the study, introduction of a machine translation system significantly increased international trade on this platform, increasing exports

by 17-20%. The effect on trade from AI translation, say the authors, is roughly equivalent to effect on trade generated by a 37% reduction in distances between countries even as they acknowledge that AI-generated impacts typically take time to shape up. The study also points out that other machine learning systems such as speech recognition, computer vision, and recommender systems may also help boost trade.

### Emerging Tech Start-Up Hub

According to [an April 2018 study](#) by Boston Consulting Group, companies plan to implement AI systems soon. China, India and Singapore, on an average, have the greatest ambitions for near-term implementation of AI in production. In its June 2018 paper titled 'National Strategy for Artificial Intelligence', the National Institution for Transforming India (NITI Aayog) too acknowledged that India has the potential to position itself among leaders on the global AI map.

In this context, Indo-U.S. ties could improve significantly by a cross-border tapping of AI skills, especially given that U.S., along with China and India, rank as the countries with highest penetration of AI skills among their workforces, according to [a recent report](#) by professional networking site LinkedIn.com.

Many Indian start-ups have employees with AI skills. AI-powered chatbots by Indian start-ups, for instance, are already being used by domestic enterprises such as banks, financial institutions, ecommerce sites and local units of U.S.-based companies. AI is being combined with IoT to make cities smarter with more predictive and intelligent transport, water and electricity systems.

The momentum will only grow with big Indian banks, manufacturing companies and domestic arms of

multinational companies incubating and supporting emerging tech start-ups. For instance, blockchain – the technology that powers cryptocurrencies like Bitcoin and Ether - is primarily being developed by start-ups globally.

Blockchain ([both permissioned and permission-less](#)) is helping banks, financial institutions and manufacturing companies infuse transparency in their payment books, make supply chains more efficient, reduce adoption barriers, ensure interoperability with other global trade initiatives and use distributed ledger technology to continually innovate and deploy new solutions. Banks in India, for instance, have established 'BankChain' – an alliance formed in February 2017 to explore and build permissioned blockchain-based solutions. The alliance has 37 members that includes local units of nine multinational banks. [The BankChain alliance](#) has so far helped banks to address issues such as setting up of an integrated corporate electronic-know your customer (eKYC) platform, cross-border remittances, bank guarantees and even employee background verification.

### Melding Skills with Mentors

To be sure, collaboration on emerging technology front is already happening. Indian start-ups are learning from Silicon Valley start-ups. In 2015, as part of 'India-U.S. Startup Konnect' that was organised by India's IT industry body Nasscom along with The Indus Entrepreneurs (TiE) Silicon Valley and IIM-Ahmedabad's Centre for Innovation Incubation and Entrepreneurship (CIIE), over 30 start-ups across diverse sectors of agriculture, healthcare, energy, financial inclusion, and biotech, as well as leading technology business incubators from India exhibited products and achievements to investors and potential partners in the Valley.

More recently, InnoTrek - an invite-only delegation of Indian startups that visits Silicon Valley to learn, connect and get inspired by the oldest and most successful tech ecosystem - completed its fifth edition. Organised by Nasscom, selected start-ups were part of a week-long immersive programme this April. It offered them opportunities to engage with global giants and gain knowledge from top entrepreneurs. Besides, Indian entrepreneurs got to learn the ropes to scale up globally and form alliances for competitive advantage.

Adding over 1,200 start-ups in 2018 alone, India continues to reinforce its position in the global start-up

ecosystem. Investments in start-ups have doubled from \$2bn in 2017 to \$4.2bn in 2018. On the flip side, TiE has enabled about \$15mn in investments through its idea-stage global funding platform, TiE Global, from beginning of 2018 till date and expects to close the year with a figure of \$17-18mn. The investments have been made

across 40-45 idea-stage start-ups with about \$9mn being invested in Silicon Valley alone under the platform 'TiE Angels'.

### Demands of the Gig Economy

Emphasis on emerging tech start-ups does not imply that we should ignore the

significant contributions that U.S.-based tech companies such as Google, Microsoft, Intel, Cisco, HP, Facebook and Twitter to name a few, have made and continue to make in India. This is also not to forget that other U.S. companies like Amazon, Walmart, Uber, have made huge investments in India, and will continue to do so, thus doing their bit to improve Indo-U.S. ties.

India has evolved into a hotbed of entrepreneurial activity. Both India and U.S. need more entrepreneurs to create employment in this gig economy, where employees will be mobile and do multiple domain-specific jobs. Hence, not only will U.S. companies continue to find India a huge market for their offerings, but also a lucrative investment destination of disruptive start-ups. The trend is already playing out. While Paytm has backing of Japanese investor Softbank and China-based Alibaba Group, U.S.-based Walmart recently completed a \$16bn investment in Flipkart to become a majority owner, in which U.S.-based Tiger Global and China-based Tencent also have stakes.

Many emerging tech start-ups in India have the potential to become the Unicorns of tomorrow. Till date, there are 18 such unicorns, according to Nasscom. An Inc42 DataLabs report forecasts that India is currently breeding over 100 tech start-ups that are expected to "[smoothly sail into the billion-dollar club](#)".

Policy makers of both nations may do well to make it conducive for U.S. companies to invest in these emerging Indian tech start-ups. A clear appreciation of this mutual benefit and synergy will pave the way for smarter grids, smarter payments systems, smarter cities, smarter governance and, effectively, be a sustainable way of further strengthening Indo-U.S. ties.

*This Policy Note has been written by Leslie D'Monte, Technology Editor, The Mint for CUTS WDC. Views are personal.*

	USA	China	India	UK	Germany
Total number of Unicorns	126	77	18	15	6
Unicorns of 2018	25	20	8	2	4
Avg. time to Unicorn (Years)	6-8	4-6	5-7	8-10	6-8

- 7,200-7,700 tech start-ups (2013-2018)
- India continues to be the third-largest start-up ecosystem in the world
- 8 unicorns added in 2018—the highest in any calendar year
- 50% growth in advanced tech start-ups

Source: NASSCOM - Indian Start-up Ecosystem Report 2018