Roundtables on

FOSTERING INDO-US INNOVATION COOPERATION FOR MUTUAL PROSPERITY

WEDNESDAY, OCTOBER 30, 2019
At and with US-India Strategic Partnership Forum (USISPF), 2550 M STREET, NW, WASHINGTON DC-20037 USA
16:00 – 18:00 HRS

TUESDAY, DECEMBER 03, 2019
With US India Business Council (USIBC) at MULTIPURPOSE HALL, KAMLADEVI COMPLEX, INDIA INTERNATIONAL CENTRE, NEW DELHI-110003 INDIA
10:00 – 12:30 HRS

Overview

As there remains tremendous scope for unleashing Indo-US cooperation on innovation in multiple sectors in India, CUTS International, under the banner of its Center in Washington DC (www.cuts-wdc.org/), has been involved in addressing related policy issues to drive Indo-US economic and development interests forward.

In this endeavour, two roundtables- one in Washington DC, US and the other in New Delhi, India, were organised on October 30, 2019, and December 03, 2019, respectively. The US leg of the roundtable was organised in partnership with the US-India Strategic Partnership Forum (USISPF) and the Indian leg was completed in partnership with the US-India Business Council (USIBC).

These roundtables were an attempt to develop a road map to foster mutual understanding about the role of innovation in major and strategic sectors as well as identify the pain points towards their uptake from policy and regulatory perspective. The sectors in focus included, but were not limited to, Defence & Aerospace, Energy and Data & Technology.

Over 100 participants attended both the roundtables representing the private sector, government, diplomats, think tanks and media from both sides, i.e. India and US.

KEY RECOMMENDATIONS/TAKEAWAYS

GENERAL

1. ***Entrepreneurship and innovation:*** *India needs to create an ecosystem that supports startups, entrepreneurship and innovation, and forge partnerships between academia, business and government. Startups do not exist in silos but are part of the broader economy. Policy reforms improving general economic conditions as well as investments in digital and physical infrastructure (for instance, internet connectivity, roads and public transportation, power and electricity), are expected to also benefit startups.*

   With regards to the regulatory framework, improving the implementation of existing startup policies and removing inefficiencies within the official processes is considered crucial to ease of *doing and running a business for startups. Reducing necessary paperwork and documentation, improving access to information, establishing more standardised operating procedures and clear criteria (e.g. how to bid for government contracts or get licenses) would help startups.*

2. **Need for Optimal Governance Framework:** Structuring a balanced regulatory framework for innovation across sectors to enable higher productivity. It is important that both sides, businesses, and regulators, understand where each other is coming from and cooperate to shape a standard regulatory framework. If the cost of regulation and compliance is too high, we risk driving the industry further towards the fringe, closer towards illicit and risky activities — impeding innovation. Businesses must work with the government to develop an optimal governance framework as neither side can tackle issues alone.

3. **Innovation is the bonding factor:** Knowledge sphere is the foundation for bilateral relations between India and the US, hence collaborative endeavours in innovation should be promoted vigorously. Innovation is the vital bond between the US and India in crucial ways. Building innovation cooperation has been a prime focus of the bilateral partnership in some way or another. However, the full potential is yet to be realised. Bilateral initiatives that encourage innovation to play a greater role in steering socio-economic development in the two countries do exist.

4. **Incentives:** Retaining its position as the world's third-largest startup hub, India is strategically poised to drive the next wave of technological advancement. Recent policy interventions have ensured that progress is made in this direction. However, there is still work to be done in terms of sending a strong signal that investors/foreign investments are welcome and to ensure that tax subsidies are made more lucrative and in favour of startups as well as electricity and relatively skilled workforce is made available.

5. **Unrestricted flow of data:** The success of India's IT industry is largely attributed to the routine flow of cross-border data from the US and back. The routine flow of cross border data should not be curtailed. Data moving across borders is critical for the services that sustain global commerce, expand prosperity and equality, improve health and safety, promote social good, and enable the technologies of the future. Furthermore, the world is increasingly more connected through sharing data with the emergence of artificial intelligence (AI) and blockchain. Data must be free to move across borders to continue the growth of the global economy and foster innovation.

6. **Startups and Intellectual Property Right (IPR):** India needs to build awareness on IPR and innovation issues in the industry, particularly startups. Startups need to look at IP, not as a matter of compliance alone, but as the creation of an asset. Most startup businesses are based on innovative ideas. Therefore, basic awareness to protect innovations (i.e. patents) and brand reputation (i.e. trademarks) is extremely critical. Young entrepreneurs need to understand that problems related to IPR may not surface during the initial stages of inception, but it is better to be proactive rather than reactive.

7. **Creation of an Alliance:** There is a need to develop an alliance with the US on digital and cyberspace issues to foster innovation, development, and defensive mechanisms, which includes a road map for AI. It is time for a high-level digital alliance between India and the US. Given their past and present partnership, India and the US are not only naturally placed to develop a shared global vision for the digital economy but are also equally equipped to present an optimal alternative to the Chinese or EU approaches.

8. **Offset enabled innovation:** Similar to other countries, India needs to develop models for incentivising aerospace and defence high tech research and development (R&D) through the flexible use of offset funds by investing in academic institutions and startups, in non-defence sectors also.

9. **Focus on R&D**: Experts agree that R&D is the backbone of a globally-competitive, knowledge-driven economy. R&D investment helps develop new products and services that drive growth, create jobs, and improve national welfare. Thus, India needs to increase expenditure on R&D from the existing level of 0.7 percent of the gross domestic product (GDP) to at least 2.0 percent of the GDP, while the same in China is 2.1 percent and in the US it is 2.8 percent. Further, to invest more in applied research rather than basic research.

SECTORAL

Energy

- Technology innovation in gas hydrates, geothermal energy, battery storage, carbon capture and utilisation, clean coal technologies, integrating renewables into national grids as well as energy efficiency offers great potential given the increasing energy needs in India.

- The US companies investing in innovative technologies in the oil refining sector are encouraged to establish units in India in view of the tremendous growth potential.

- Partnership with the National Renewable Energy Laboratory, Colorado in hydrogen fuel cells, electricity modeling, the printing of solar panels, etc, are indicative of the huge potential for future collaboration.

Housing

- In the area of urban development and housing, India needs innovative technology to do large scale construction in record time with lower costs and efficient use of resources to foster environmentally sustainable practices. The Ministry of Housing and Urban Affairs is organising an international competition entitled 'Global Housing Technology Challenge India in 2019-20' wherein alternative technologies will be mainstreamed through a global challenge process.

Life Sciences & Healthcare

- There is a growing need to accelerate the harmonisation of pharmaceutical testing protocols and product standards. Also, it is important to synergise the needs of both sides, keeping in mind the needs of US pharma and medical device companies that need

better IP protection and innovation and not encumbered by price control mechanisms to access the Indian market.

Space

- By way of identification and building complementarities in respective space programmes (for example, ISRO being touted as the leader in low-cost satellite launches), NASA/ISRO and the private sector can expand the scope and scale of bilateral space partnership.

Blue Economy

- In light of depleting marine resources including fisheries and coral reefs in related oceans, a bilateral initiative that encourages the development and deployment of innovative technologies for sustainable consumption and production can help tackle challenges.

Washington DC

A roundtable entitled 'Fostering Indo-US Innovation Cooperation for Mutual Prosperity' was held in Washington DC on October 30, 2019. Harsh Vardhan Shringla, India's Ambassador to the US graced the occasion as the Chief Guest and delivered the inaugural address. At the outset, Ambassador Shringla noted that this was an opportune time for a discussion on cooperation in innovation between India and the US and acknowledged the efforts of CUTS and USISPF in organising the event.

Ambassador Shringla said that cooperation in innovation presents the perfect opportunity in the India-US bilateral relationship to pursue win-win outcomes. He referred to the fact that India — a young country brimming with talent and future entrepreneurs — is the ideal destination for US expertise and capital. The US is also the repository of cutting-edge technology that is highly relevant to what India requires for its economic growth and development. Shringla quoted Prime Minister Modi to state that India sees the US as its partner of choice for the socio-economic transformation of India.

He added that in order to realise the vision of a US$5tn economy, innovation, joint-development and taking advantage of the vast possibilities of commercialisation of new technologies in the Indian market need to be tapped into fully. He stated that while there exists a fair amount of exchanges at high-levels, it would be critical to see these exchanges expand and grow across levels and sectors. The US investments in India and the availability of skilled talent pool in India for carrying out research and development coupled with the

market potential would serve as significant drivers of innovation for mutual benefit and prosperity.

He stated that the Government of India, under Prime Minister Modi, has constantly been upgrading its systems and regulations to create a business environment conducive to investments. In terms of focus sectors, he cited the potential for innovation and investment in sectors such as energy, housing and plastics that would have a large scale impact in India.

In conclusion, Ambassador Shringla extended his best wishes to CUTS for its new venture in Washington DC to promote bilateral economic ties between India and the US and render all help from the Embassy.

A copy of Ambassdor's remarks is available here: **https://bit.ly/2EUruBV**

Welcome speeches

Both the organisers, USISPF and CUTS welcomed the Ambassador, other speakers, and the audience. Mukesh Aghi, President and CEO, USISPF kicked off the meeting recalling India's progress on the Global Innovation Index that it was ranked number 81 in 2014 and in 2019 it's ranking went down to 52. He also pointed out that when you benchmark this with China which is at 14, there are lots to be done to develop India as an Innovation Centre.

With India spending only 0.7 percent of its GDP in R&D, he opined that a lot of effort is needed to increase such spending for India when countries like China, the US and Japan are spending at 2.1, 2.8 and 3.2 percent respectively.

He lamented that it takes about 64 months for approval of patents in India as compared to 15 months in Japan, 22 months in China and the European Union and 24 months in the US. He suggested that India bring more energy and efficiency in the process.

He also pointed out that the researchers behind the patents coming out from India through US companies are mostly Indians. Therefore, he emphasised in creating an enabling environment and increasing R&D spending to create an ecosystem in India that supports innovation and entrepreneurship. He put forth his views that there is a need to look at ways to bring that culture of the ecosystem in Indian universities, companies, and the government itself.

Aghi was followed by Pradeep S Mehta, Secretary General, CUTS International, who stated that innovation need not directly be related to IPRs. He was of the view that that innovation and entrepreneurship remain critical for India for job creation. "US interest in India lies in the market that we have; and in the potential and the talent pool that India has been providing to the US for a long time", he added.

He highlighted that defence and aerospace; energy and data; and technology as the sectors of the focus of the Roundtable. "These are major strategic areas where bilateral cooperation through innovation could be further accelerated", he said. He reminded that the US private sector firms, such as Lockheed Martin have increased both defence exports and shown interest in defence manufacturing with an offer to produce the F-21 aircraft in India.

He pointed out the critical knowledge gaps that needed to be addressed to keep up the momentum. These include but are not limited to: i) transfer, adoption and implementation of innovation in industry and academia; ii) channelising dual-use technologies required through defence collaboration to civilian sectors; and iii) structuring a balanced regulatory framework for innovation across sectors to ensure higher productivity along with adequate absorption of labour force.

Panel discussion

After the opening session, a panel discussion was held which was moderated by Richard M Rossow, CUTS WDC Management Board, and Senior Adviser & Wadhwani Chair in US-India Policy Studies, Centre for Strategic and International Studies, US. Nearly 40 participants from various organisations and Indian Embassy participated in a lively event. Rossow posed several interesting questions to the panel comprising of:

1) Vivek Lall, Vice President, Strategy & Business Development, Lockheed Martin, US
2) Becky Fraser, Director, Government Affairs, Qualcomm, US
3) Sanjaya Baru, CUTS WDC Management Board and Distinguished Fellow, Institute for Defence Studies and Analyses, India
4) Robert D Atkinson, President, Information Technology and Innovation Foundation, US, and
5) Amit Kapoor, Honorary Chairman, Institute for Competitiveness, India

Lall spoke about the IPRs that defence companies like them possess. "What will be shared will be decided by the US government", he said. "So, it is good to have US-India defence

cooperation taking a positive course." He added that having a dedicated budget structure can help ensure technology development for which they are partnering with various actors including in India. He further said that India is moving forward in aerospace and air defence.

Lall said that Lockheed Martin recognised the innovation potential in India and established the India Innovation Growth Programme in 2007 in partnership with the Department of Science & Technology, which is one of the largest public partnership programme in India. There are examples of how Lockheed Martin has collaborated with several implementation partners, Federation of Indian Chambers of Commerce & Industry (FICCI), Indo-US Science and Technology Forum (IUSSTF), Centre for Innovation Incubation and Entrepreneurship (CIIE) at IIM Ahmedabad and Indian Institute of Technology, Bombay. According to him, there have been more than 350 commercial agreements coming out of partnerships with Indian companies and is credited to have generated over US$900mn in cumulative revenue, according to an independent report by E&Y. They have been engaging with universities through dedicated University challenges to foster the spirit of entrepreneurship and change the university landscape which is mainly hindered by lack of capital and mentorships and also brought sectoral focus with a specific focus on innovation in Aerospace & Defense (A&D) sector. In an attempt to further support innovation in A&D, we have provided market place access to these startups through dedicated supplier summits. Over the last two years, we have organised two A&D startup conferences where we have connected 25 of our Tier-1 suppliers with A&D startups in India.

He was of the view that in the last 20 years, India's defence has come a really long way. He mentioned that they brought in TATA Trust as a partner to the programme to address innovation for social benefits while they focused on industrial aerospace research. Furthermore, their joint venture with TATA Sons is producing components for global supply chains. Now they have all the building blocks in India that they can use to go on to produce entire products. In a way, we have led the 'Make in India' campaign for the past decade. It is a capital-intensive long-term investment that should be seen in terms of the global supply chain and ecosystem.

He further added that the biggest cost and greatest missed opportunity is the mishandling of India's use and application of defence offsets. This is one industry that has grown between the US and India. It is a US$17bn engagement that the two countries now have. He said that at present, 30 percent of that value has to be dedicated by companies like Lockheed Martin to defence offsets. But unlike other countries, India is still not looking at creative ways to utilise the offsets funding and keeping it restricted to the defence sector.

Many countries use it outside the defence sector to inspire innovation to fund education in universities that focus on and collaborate in R&D.

According to Lall, India is making wheels and wings for aircraft, and bullets and not expanding it to potential collaboration for defence offsets to touch the universities and young minds by setting up research in universities funded by companies like Lockheed Martin and Boeing. He was of the view that these companies are happy to do it because they have an obligation to do so. "Liberalise the defence offset operation", he said.

Becky Fraser, Qualcomm said that they are very committed to partnering with players across the mobile ecosystem in India. They are excited to look at the horizon of 5G technology together with their partner Indian carriers such as Reliance Jio mobile. According to Fraser, Qualcomm is also partnering with many small firms to make mobile technology accessible and affordable to all.

She finds the recent announcement of the ISRO introducing the Indian regional Navigation satellite system, NavIC as the opportunity to leapfrog in the technology sector. This original navigation system really has the potential to have improvements in geolocation capabilities of mobile, automotive, internet of things and all of that requires 5G. They find NavIC as a critical step towards India's pursuit of harnessing space technology for national development; and also in helping ordinary data users.

Fraser was also happy to share that in 2016 Qualcomm launched Design in India challenge which have had 1100 applicants since 2017, and 85 among them created patents and incubated about 26 companies.

She also informed that they have been partnering with the SMEs and entrepreneurs but also cultivating a policy environment that is conducive for commercialisation of Qualcomm's innovations. They feel that the pendulum is swinging in a positive direction in India currently. There is a renewed interest in having conversations about the environment. "I take trade secrets as an example. I think there is new energy behind how does India protect trade secrets and have singular Trade Secrets Law. So, I think that much of it comes from the inherent tensions that exist around commercialising intellectual property."

Sanjaya Baru said that India centered the relationship around knowledge to foster a relationship with the US. "Unless we are able to push the knowledge sphere as the

foundation for the bilateral relation, I cannot imagine a change in the bilateral relationship", he added.

He recalled the collaboration on India agriculture in the Green Revolution in the 1960s which was fostered by and funded by the US, which lead to food surpluses. This happened in spite of an unfriendly relationship at that time.

He added that India does not have any restrictions on the growth of enterprises/firms. There are large companies assembling technologies that encourage new entrepreneurship and firms. This is what the government is encouraging for the private sector as well and the idea is that this allows new entrepreneurs coming to manufacturing. He added that India not having new enterprises in manufacturing unlike in other sectors like IT and retail is a huge challenge. Due to this the share of manufacturing in national income has remained stuck at 14 percent for 25 years. He was of the view that there is no cultural bias against entrepreneurship because actually, startups are doing good.

Baru complained about the slow pace of US-India relations which he views are due to change in administration in both India and the US. However, he felt that the new Indian Foreign Minister, S Jaishankar has a good sense of urgency in getting this relationship back on track.

Robert Atkinson was of the view that there is a potential of a tectonic shift between new players, new winners. Firms in China are already moving out in lots to countries like Vietnam, India, Taiwan and Malaysia. But they do not move out to the extent they could because of the network effects considering you want to be close to suppliers and others.

He is of the view that India has this sort of opportunity to say "we're going to be the next hub of the next wave." India is in the best position because this is all about putting lots of small things together and not merely opening up a small factory. He suggested India send a signal that if you come to India and want to build this new technology system, you are going to be in the right place for you to do that because of tax regulations, electricity availability, and relatively skilled workforce.

He also suggested India favour large firms like in China where manufacturing firms are far bigger than what the Indian firms are. The scale is needed to succeed. He opined that the startups need to be scaled up.

"I think there are huge opportunities in 10 years when four major technology hubs in the world will be the US, China, Europe and India. I would actually put Europe down. And I think US-India partnership is the future", he said.

He also viewed low productivity as its major challenge but not innovation. He suggests that the government's job creation focus should move to the creation of wealth and increasing productivity. The jobs will then follow.

Amit Kapoor spoke about the fact that we should not look at India as a single unit. Rather India is a disaggregated entity. From this point of view, his office launched the India Innovation Index highlighting the innovation status of states in India. They have isolated the kind of disparities exist between the states in terms of economy. There are states like Bihar and Jharkhand and the likes of Maharashtra and Karnataka which are doing extremely well. Using different parameters, the report shows why this is actually happening. Kapoor is of the view that disparity actually starts from the educational set-up and is bearing fruit right now.

He further added that innovation is not only about big ideas and technology. He explained: "I beg to differ with that idea for a simple reason. There's nothing called high-tech or low-tech firms and industries. In fact, from my point of view, Infosys—which is the blue-eyed boy in the block—is the most low-tech company in the IT world. They don't even create software. You can, on the other hand, have an agriculture firm which can be quite innovative. So, our understanding is important."

He was of the view that there are going to be five or six states which will drive innovation in India. The leading states will be Gujarat, Karnataka, Maharashtra, Tamil Nadu, Telangana, and Andhra Pradesh. These are the states that are going to be coming up with innovative enterprises mainly because of emphasis on their education infrastructure.

When asked if India is ready to be an innovation-driven economy, he nodded positively. He added that the states need to identify the sectors that can drive their innovation. He informed that there is an absolute obsession within the states, and all states want to do everything under the sun. He mentioned that in a study done for the Prime Minister's Office they have identified the top four sectors for each state to focus on.

He further mentioned that big Indian companies can be put in two brackets in terms of innovation. One would be the new rich companies and the positive impact they are having in innovation. Their contribution to the economy is tremendous. Others have a business

model that is outdated. He also pointed towards that while it is a favourite time to bash the government, the private sector is also not innovative in India. He urged the private companies to come forward in innovation. "The question for me is why companies like Google and Skype did not happen in a country like India despite the fact that we produce about 1.3 billion people?" The practice of business licencing in the past had also hampered innovation, according to Kapoor.

Richard Rossow, the moderator, in his concluding remarks said that innovation itself is the vital bond between the US and India in crucial ways. He opined that putting important things like nuclear cooperation and defence technology on the table really begin to unlock the most important things that have taken place since. Innovation and partnership in technology offered incredible promises in the bilateral relationship. There are lots of areas and complementarities in the Indo-US relationship that merit attention, and finding ways to all sorts of problems is going to be crucial. While India is climbing up the innovation ladder, it is also a place for job creation and for growth. According to Rossow, the Indo-US relationship is going to be one of the defining partnerships of the 21st century.

New Delhi

Together with the United States-India Business Council (USIBC), CUTS International organised its 2nd Roundtable entitled, 'Fostering Indo-US Innovation Cooperation for Mutual Prosperity' in New Delhi on December 03, 2019.

Speakers

Pradeep S Mehta, Secretary General, CUTS International
Ambika Sharma, Managing Director, US-India Business Council
Isabella Detwiler, Deputy Counselor for Economic Affairs, Environment, Science and Technology, U.S. Embassy, New Delhi
Yaduvendra Mathur, Former Special Secretary, NITI Aayog
Arvind Mayaram, Member, CUTS WDC Management Board & Former Finance Secretary, Government of India
Deepak Maheshwari, Director-Government Affairs, Symantec Software Solutions Pvt. Ltd
Pratesh Gandhi, Director, India Strategic Development, General Atomics
Subimal Bhattacharjee, Managing Director & CEO, Codotte Advisory Limited
Devin Narang, Managing Director, Sindicatum Renewable Energy Company Private Limited
Bipul Chatterjee, Executive Director, CUTS International

Opening Address

Isabella Detwiler, Deputy Counselor for Economic Affairs, Environment, Science and Technology, the US Embassy, New Delhi delivered the opening address. Not only did she underline the growing warmth in the bilateral relationship and the culture of innovation in the US but also touched upon India-specific porgrammes which are underway with support from the US.

Detwiler underscored the foundational role of the US government supported Indo-US Science and Technology Forum, PACEsetter Fund, Nexus and India's Millennium Alliance, among others, in shaping the innovation landscape in India. Furthermore, she highlighted sector-specific initiatives and pointed out areas where the potential of bilateral innovation cooperation can be realised.

Citing an example in the energy sector, Detwiler mentioned how the US Department of Energy and State, along with USAID, work with Indian partners to identify how nations can best integrate renewable energy into national grids. She added how the two countries are working together on clean energy technology development through the US-India Joint Clean Energy Research and Development Centres.

On defence technology collaboration, Detwiler highlighted initiatives in co-developing and co-producing technologies. For example, research laboratories from US military services and India's Defense Research and Development Organisation routinely share information

on future technologies that directly impact the effectiveness and security of the two countries' militaries. The latest collaborations have focused on minimising blast and blunt trauma for soldiers in the field, to capitalising on the latest developments in the area of photonics, she stated.

Furthermore, she spoke about the Defence Technology and Trade Initiative, or DTTI, initiated in 2012, as another area of cooperation where defense establishment and industry are matching security requirements with material solutions.

In conclusion, Detwiler stressed that there is much more than the US and India can do together – whether it be in the fields of supercomputers, AI, energy, or defense cooperation. We can and must inspire our nation's youth to ask "why?" and "why not?" exhorted, Ms. Detwiler.

A copy of her complete address is available here: **https://bit.ly/36k1QCg**

Welcome Speeches

Pradeep S Mehta, Secretary General, CUTS International welcomed the speakers and participants and thanked USIBC for collaborating with CUTS for the New Delhi roundtable and everyone for taking time out from their busy schedules to join it.

While reflecting upon the discussions from the 1st roundtable at Washington DC, Mehta stated that with a legacy of supporting the Green Revolution that transformed scarcities into abundance, the innovation potential of the US can help India address its socio-economic disparities. He highlighted that the green revolution was fostered and funded by the US through the Ford Foundation in 1961.

Mehta further underlined the comparative needs of both the countries and highlighted bilateral initiatives and sectors wherein innovation can be leveraged to unleash the potential. In particular, he spoke of advancing bilateral innovation cooperation in digital and cyberspace, energy, defence and aerospace. He further stated that issues involving IPRs between the US and India should be settled, without sacrificing our development interests. Some IPRs may be perceived as a public good but others may not. It will also require India to build awareness on IPR and innovation issues in the industry, particularly startups.

A copy of his complete remarks is available at: **https://bit.ly/2P8JD4U**

Ambika Sharma, Managing Director, USIBC, New Delhi thanked and appreciated CUTS to have collaborated with USIBC for a timely initiative. She emphasised that Data and Digital Economy, Education, Energy and Environment, Life Sciences and Healthcare, Defence and Aerospace are sectors where both countries have maximum potential to collaborate and rightly so, innovate.

She explained that with India being the largest data consumer and generator, there can be a lot of mutual learnings where India's sustainable development challenges are tackled through garnering evidence-based solutions. On education, she opined that besides India liberalising its higher education system, an Indo-US platform that can allow twinning of programmes, jointly administered colleges and universities that are mutually recognised in both countries can be a way forward.

She added that the energy infrastructure deficit India confronts is immense and a significant constraint on the country's economic growth. In view of this and the governmental thrust on renewable energy, India can be a testbed for scaling-up cutting-edge renewable energy technologies that can be sequentially deployed in the US.

She further suggested that there is a growing need to accelerate harmonisation of pharmaceutical testing protocols and product standards between India and the US as well as address restrictive trade barriers. Ms. Sharma also highlighted the possibility of propelling the military-industrial complex in both the countries with a greater flow of technology and opportunities in co-creation and co-production of strategic defence platforms, in addition to building complementarities in respective space programmes.

A copy of her talking points is available at: **https://bit.ly/2PZm0fv**

Yaduvendra Mathur, former Special Secretary, NITI Aayog, while chairing the panel discussion, highlighted a Government of India's initiative that aims to ignite young Indian minds under the Atal Innovation Mission. Under this mission, 7,000 schools have been equipped with tinkering labs with robotics kits and 3D printers etc. The idea is to scale this up to 50,000 schools in the coming years, said Mathur.

He added that besides tinkering labs, there are around 200 incubators at the school level. Furthermore, Mathur briefed about AI for all programmes that mainly focuses on finding solutions in the health and agriculture sectors, among others. Such initiatives enhance the scope for US-India private sector players to come and work together, he stated.

Arvind Mayaram, Member, CUTS WDC Management Board & Former Finance Secretary, Government of India stressed on the need for curtailing non-performing assets in energy and other sectors to prevent innovation from suffering. It is important as innovation cannot be looked in isolation to the financial sector and access to capital, asserted Mayaram.

He underlined the mutual issues of contention particularly those related to patenting in the pharma and medical devices sector but cautioned that the protection of IP should be such that it does not affect access to drugs.

Deepak Maheshwari, Director, Government Affairs, Symantec Software Solutions Pvt. Ltd, said that the growth of India's IT industry is largely attributed to the routine flow of cross-border data from the US and back. Thus, the free flow of data should not be curtailed, he said. Maheshwari also urged authorities to make available the draft Personal Data Protection Bill for public comments as early as possible so that stakeholders can comment upon the same.

While stating that even the US does not have federal legislation on data privacy, however several of its states do, it is desired that the Indian law should be more on 'what' and less on 'how' in the interest of innovation, he added.

Pratesh Gandhi, Director, India Strategic Development, General Atomics shared that the defence budget of India is around 1.6 percent of GDP, but innovation has not been at the heart of defence sector. In view of the fact that India is still one of the largest importers of defence equipment, innovation is the key to help India move up the value chain in defence manufacturing and exports, he opined.

On 'dual-use' technology, Gandhi shared that Hindustan Aeronautics Limited (HAL) and Bharat Electronics Limited (BEL) are coming out with innovations that can be used for civilian purposes apart from defence. He said that India requires incubators for defence & aerospace in more and more universities.

Subimal Bhattacharjee, Managing Director & Chief Executive Officer, Codotte Advisory Limited spoke about actual capacity building in defence sector as India is still more at the procurement stage than acquiring the technology. Though India has signed all foundational agreements with the US, things are not moving as desired with respect to innovation and manufacturing of defense equipment in India, he cautioned. This is mainly due to procedural delays and lack of trust, he added.

Bhattacharjee said that Indo-US cooperation in the defense sector should be forward-looking, such as combining AI with such equipment. For this, a secured digital ecosystem would also be needed. However, instruments such as the National Cyber Security Policy, 2013, which is likely to change soon, had seen a very lax implementation, he lamented. To implement it in full strength, around 500,000 professionals would be needed, said Bhattacharjee.

Devin Narang, Managing Director, Sindicatum Renewable Energy Company said that achieving energy security remains the most important priority for India. He added that India should lessen its reliance on the import of fossil fuel. In addition, there is also scope for the US to secure access for its clean coal and energy storage technologies in the Indian market, indicated Narang.

As of now, battery storage is a sunrise sector in India, particularly when the government is focusing on electric mobility. However, a domestic investment could be a problem. For instance, India has technology for generating power from burning stubble but there are hardly any takers, he added. These are some of the gaps where innovation-based Indo-US partnership can be of immense value in enabling India to meet its energy needs, suggested Narang.

The roundtable also suggested an Indo-US Initiative on Blue Economy in view of depleting marine resources, including fisheries and coral reefs with an objective to encourage sustainable use of these resources and conservation of the underwater ecosystem.

While delivering the closing remarks, **Bipul Chatterjee**, Executive Director, CUTS International stressed the need of accelerating joint efforts in encouraging small and

medium enterprises in India and the US to collaborate more and consider joint patents and industrial designs. He concluded the roundtable by saying that CUTS will continue to encourage Indo-US cooperation in the sphere of innovation by developing and implementing a dedicated work programme.

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