Second Impact Analysis of the
DST - Lockheed Martin
India Innovation Growth Programme
2007-2015

Report compiled by
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This report evaluates the impact generated by the DST-Lockheed Martin India Innovation Growth Programme (IIGP) over the last nine years – 2007 to 2015. It is an extension of the previous report published in 2012 consisting of similar analysis for the period 2007 to 2012.

The previous report analyzed the value added by the Programme for the innovators who participated in IIGP. Furthermore, the outcomes were analyzed and presented in a brief and concise manner. This assessment is compared with the results of the previous report to understand the trend in growth on various parameters.

Any reference in this report to data pertaining to the years 2007 to 2012 is based on the assessment done as part of the report titled “DST-Lockheed Martin India Innovation Growth Programme – Impact Analysis Report” published in 2012.


India Innovation Growth Programme (IIGP) attracted a total of 2,846 applications from innovators across the country during 2007–2012. Out of these, 120 innovators were awarded for their innovative technologies (15 awards each year till 2010 and 30 each for 2011 and 2012). These innovators have invented technologies or improved existing ones that are applicable in a wide spectrum of end-user applications including pharmaceuticals and health care, energy, utilities, technology, services,
aerospace, defense, agriculture, forestry, and environmental and waste management services among others.

The pharmaceuticals and healthcare sector received the highest number of awards during 2007–2012, and accounted for 22% (26 out of 120 technologies) of the total awards presented. Technology and services was the second leading end-user industry, accounting for 14% of total awarded technologies during the period, with 17 technologies belonging to this category. The third leading end-user industry, energy and utilities, accounted for 11% of the total awards during 2007–2012, with 13 technologies belonging to this category.

Small and medium enterprises (SMEs) led the innovation bandwagon, accounting for 38% of total awarded technologies during 2007–2012. This was followed by start-ups, which contributed to 32% of the total awarded technologies during 2007–2012. Pre-startups occupied the third position, contributing 12% of the total innovations. These were marginally ahead of universities such as the Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISc), which accounted for 11% of total innovations. The rest were developed by government laboratories and accounted for 7% of the total awarded technologies during this period.

According to geography, southern India emerged as the most innovative geographical region during 2007–2012, accounting for 45% of the total awarded technologies. It was followed by western India and northern India, accounting for 25% and 23% of the total awarded technologies, respectively.

With exemplary support and guidance from the programme, the cumulative turnover of the participants’ companies during 2010–2012 exceeded the INR 1,500 crore (US$275 million) mark. The total turnover of the participants’ companies is expected to reach INR 4,440 crore (US$814.1 million) by 2015, which is substantially higher than the cumulative figure of 2010–2012. Besides a strong impetus to innovation, this also implies a substantial positive impact on the entrepreneurship and employment levels in the country.
Executive Summary

Technology and innovation play a critical role in defining the way we live today. New inventions and innovations have made the world an ever dynamic place and before we get accustomed using a technology, the next best thing is already out in the market. Innovation involves engaging in a constant process of thinking creatively, differently and insightfully to develop solutions that could generate economic and social value. Innovation is universal. Innovation could be disruptive or incremental; high-end or jugaad; could happen in a most sophisticated lab of NASA or in a small village of Karnataka; it could be for profits or for social good. Innovation aims to improve access, affordability, sustainability, efficiency, productivity and competitiveness. Currently, innovation is seen as the corroborator of economic growth.

Riding on innovation, there is a new wave of entrepreneurship and start-up culture in the country. Still, international comparative studies of innovation consistently place India far below the top of the innovation charts. In the latest INSEAD-WIPO Global Innovation Index (2013), India ranks #66.

The Government of India has declared the current decade as the “Decade of Innovation.” Science, technology and innovation are expected to play a major role in India’s development and growth. The Government is playing the role of a catalyst by encouraging interactions between industry, innovators, and academia. Innovation - oriented programs such as Atal Innovation Mission (AIM) and Self-Employment & Talent Utilisation (SETU) are expected to promote a network of world-class
innovation hubs. In addition, focus is on evaluating and strengthening existing initiatives aimed at promoting innovation and entrepreneurship in India. The strategic objective is to result in widespread job growth and the creation of globally competitive enterprises.

**About the Programme**

The India Innovation Growth Programme (“IIGP” or “the Programme”) is a joint initiative of the Department of Science and Technology, Government of India; Lockheed Martin Corporation; Indo-US Science and Technology Forum; Federation of Indian Chambers of Commerce and Industry; Stanford Graduate School of Business, TiE Silicon Valley and the IC² Institute at the University of Texas at Austin. The Programme is in line with the decadal theme and aims at accelerating innovative Indian technologies into the global marketplace. It is a unique Programme with a sharp focus on capacity building through teaching world-class commercialization strategies and providing business development assistance.

The IIGP has been constantly evolving since its inception in 2007. With time, new components and partnerships have been included in the Programme including capacity building, market reach-out support to make it focused and outcome-oriented for Indian innovators. From a humble beginning in 2007 (number of applications received being 102) to 2015 (the number of applications increased to 1015), the hard work and commitment of the Programme partners is aptly reflected in the popularity it has gained among India’s innovator fraternity.

The Programme’s selection process consists broadly of six steps starting from inviting applications to providing business development support for successful commercialization. At the first stage of screening, 100 innovations are selected from the total number of applications received followed by a further selection of top 50 innovations by the Programme partners. These 50 innovators are provided in-depth capacity building training and are invited to present at the innovators’ competition. The competition results in 30 innovation awards.
Over the last nine years, the Programme has helped hundreds of Indian innovators to take their innovations to global markets. Maximum number of technologies selected in the Programme were from the pharmaceutical and healthcare sector (20%) followed by Information and Communications Technology (ICT) (12%) and Energy & Utilities (9%) respectively. Over the same period, out of every 10 innovators selected, one has been a woman innovator. South India accounts for the maximum number of innovations (46.7%) in the total number of selected innovations over the years 2007 to 2015.

**Business Engagement Agreements (BEAs)**

Business Engagement Agreements (BEAs) are the outcome of the business development activity undertaken under the Programme. These agreements are facilitated by the business development managers from FICCI and IC² Institute at the University of Texas, Austin according to the terms and conditions agreed by the innovator and the potential industry partner/investor identified.

Based on the stage of development of the innovation and requirement identified by the innovator, the support provided can be in the form of connecting with seed funds, angel investors, venture capitalists; leading industry players for collaboration on pilot projects; assisting in technology transfer or joint development of a technology; and connecting with distributors.

During the period 2007-2015, innovators entered several business deals for commercialization of technologies. In 2007, innovators entered 15 business deals with Indian and global companies. This number rose to 85 deals in the year 2012 when the highest growth in business deals entered by innovators was witnessed with both Indian and global companies.
Programme evaluation

A programmatic evaluation has been carried out to assess the quantitative and qualitative impact for the participants over the years 2007-2015. The assessment methodology focused on gathering feedback directly from innovators and incubation managers to understand the impact the Programme has created on the business performance. Key performance assessment parameters are:

- Revenue earned
- Export turnover
- Employment generation
- Access to additional funding

The chief objectives of the Programme are to build capacities in Indian innovators on critical issues relating to technology commercialization and facilitate investor as well as market connects for successful conversion of ideas into businesses. Analysis on revenues, turnover from exports, business deals, employment generation and additional funds raised have been conducted to provide an overall summary of the Programme since its inception. The analysis helps in assessing the outcomes of the Programme and thereby, identifies the areas of success and improvement.

The key results experienced by the innovators over the last three years are shown in the table below:

<table>
<thead>
<tr>
<th>S. no.</th>
<th>Parameter</th>
<th>2007-12</th>
<th>2013-15</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Revenue generated</td>
<td>INR 1,500 crore</td>
<td>INR 3,739 crore</td>
</tr>
<tr>
<td>2.</td>
<td>Export turnover</td>
<td>NA¹</td>
<td>INR 181 crore</td>
</tr>
<tr>
<td>3.</td>
<td>Business deals</td>
<td>286</td>
<td>128²</td>
</tr>
<tr>
<td>4.</td>
<td>Additional funds generated</td>
<td>NA</td>
<td>INR 580 crore</td>
</tr>
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¹ Not available
² For 2013 and 2014
In addition, an important parameter for measuring the performance of the Programme is employment generated by the innovators. By the end of 2015, 3,422 employees are expected to be working with the innovators.

Apart from historical results, the innovators also reported estimated revenues and exports over the next three years. The projections are optimistic and reflect increasing growth trends, both in revenues and exports.

During the period of the analysis, the incubation managers have expressed having access to improved quality of training and learning opportunities, increase in funding received and establish global associations and partnerships. They were also able to implement the best practices from US to their own incubators in India. Out of the total, 26% of incubation managers were able to raise additional funds for their centers and around 11% were able to network globally to create meaningful alliances and partnerships with incubators, faculty members and trainers in the US after attending the Programme.

Incubation managers have reported satisfactory programme support and considered it relevant to their area of competencies. In the survey, more than 75% participants judged the Programme to be structured in an efficient and professional way and 47% were satisfied with their interactions with the incubation centers in the US.

**Key challenges**

The Programme has been successful in creating an ecosystem and institutional mechanism to support Indian innovators and entrepreneurs. However, specific changes may be suggested to create an efficient programme structure so that it continues to play a crucial role in commercialization of
innovations and providing a boost to entrepreneurship and advancement in technology. The key challenges faced by the program over the last three years are highlighted below:

- Low participation from women
- Low participation from select regions of the country such as eastern and north-eastern India
- Lack of funding options and funds
- Low emphasis on the commercial and business aspects of the innovation by innovators
- Reduction in number of participating industries

Recommendations

- In order to increase women's participation in the programme, awareness programmes should be conducted which are centralized on promoting women participation. Additional incentives can also be given to the female participants and winners for a higher participation of women in the programme.
- Increased number of financial institutions should be attracted to the Programme so that more funds can be generated for commercialization of innovations of the participants. A dedicated fund by the Government of India, may also be created in the programme for the same purpose
- Increased participation from industries should be encouraged to get a more holistic view of the needs of the customers.
- Efforts should be enhanced to increase the number of innovators selected each year to ensure a wider and larger coverage of innovators under the Programme.
Section I

India Innovation Growth Programme (IIGP)
1.1 About the programme

Innovation is gaining momentum globally with each passing day and India is no exception. It is seen as the harbinger of economic growth and increasingly so in emerging markets such as India with its large talent pool and educated youth population. India is expanding and innovating in high-tech products and services.

The Government of India has declared 2010-2020 as the “Decade of Innovation,” which rightly emphasizes the importance of innovation in India. The Government has established the Atal Innovation Mission (AIM) and Self-Employment and Talent Utilization (SETU) which underlines its commitment to foster innovation, entrepreneurship and start-ups in India. For the first time, the word “innovation” has been added to the latest Science and Technology policy formulation with the new policy being named “Science, Technology and Innovation Policy.” However, India is yet to exploit its innovation potential to make an impact on the lives of its people — with direct implications for long-term industrial competitiveness and economic growth of the country.
The India Innovation Growth Programme ("IIGP" or "the Programme"), launched in March 2007 jointly by Lockheed Martin Corporation, Federation of Indian Chambers of Commerce and Industry (FICCI) and IC² Institute, University of Texas at Austin; aims to enhance the growth and development of India’s innovation driven entrepreneurial economy. The Programme is in line with the decadal theme and aims to accelerate innovative Indian technologies in the global marketplace. It is a unique program with sharp focus on capacity building through teaching world-class commercialization strategies and providing business development assistance.

Since its introduction in India, the Programme has received an overwhelming response from innovators, inventors, scientists, researchers and industry players from diverse sectors in India. The advent of the Department of Science and Technology (DST), Government of India and Indo-US Science and Technology Forum (IUSSTF) as programme partners in 2009 provided it a substantial qualitative boost and helped scale the Programme. In 2013, the Stanford Graduate School of Business and TiE Silicon Valley came on board as knowledge and global ecosystem partners respectively. This also enhanced understanding of global-best practices on innovation and entrepreneurship in the country to learn from.

Figure 1.1: Participation by respective partners in IIGP

<table>
<thead>
<tr>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiated by Lockheed Martin, IC² Institute and FICCI</td>
<td>DST and IUSSTF joined in as partners</td>
<td>TiE Silicon Valley and Stanford Graduate School of Business came on board</td>
<td></td>
<td></td>
<td></td>
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</table>
The IIGP has been constantly evolving since its inception in 2007. With time, new components and partnerships have been included in the Programme including capacity building, market reach out support to make it focused and outcome-oriented for Indian innovators.

1.2 Programme partners

The IIGP is a unique and a first-of-its-kind public private partnership (PPP) model in the innovation and commercialization domain in India. Over the years, the Programme has added new partners who bring global best practices on innovation evaluation, commercialization and entrepreneurship.

Figure 1.2: Programme partners

The role of each programme partners is elaborated in the following sections.
1.2.1 Department of Science and Technology (DST), Government of India

India is one of the top-ranking countries in the field of basic research. In India, science has come to be regarded as one of the most powerful instruments of growth and development, especially in the emerging scenario and competitive economy. In the wake of the recent developments and the new demands that are being placed on the S&T system, it is necessary for us to embark on some major science projects which have relevance to national needs and which will also be relevant for tomorrow’s technology. The Department of Science & Technology (DST) plays a pivotal role in promotion of science and technology in the country. The department has wide ranging activities ranging from promoting high-end basic research and development of cutting edge technologies on one hand to service the technological requirements of the common man through development of appropriate skills and technologies on the other.

The National Science & Technology Entrepreneurship Development Board (NSTEDB), established in 1982 by the Government of India under the aegis of Department of Science & Technology, is an institutional mechanism to help promote knowledge driven and technology intensive enterprises. The Board, having representations from socio-economic and scientific Ministries/Departments, aims to convert “job-seekers” into “job-generators” through Science & Technology (S&T) interventions.

DST has been supporting the India Innovation Growth Programme since 2009 as a co-sponsor of the Programme along with Lockheed Martin Corporation. DST plays a critical role in the Programme by deeply engaging and mentoring the program activities and outcomes.

1.2.2 Lockheed Martin Corporation

Lockheed Martin is a global security and aerospace company that employs about 112,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.
In 2006, Lockheed Martin partnered with the Department of Science and Technology, Government of India to develop and execute the India Innovation Growth Programme (IIGP). The IIGP is now entering its tenth year. The Programme has accelerated the transition of the India’s innovative technologies into the Indian and global marketplaces. Programme partners include the Federation of Indian Chambers of Commerce and Industry, the IC² Institute at University of Texas, at Austin, the Indo-U.S. Science and Technology Forum, Stanford Graduate School of Business and TiE Silicon Valley.

IIGP represents an example of Lockheed Martin’s commitment to long-term partnership with India along with other such initiatives. For example, Lockheed Martin is sponsoring the C-130J Roll-On/Roll-Off University Design Challenge with five leading universities in India to develop cargo aircraft modules for disaster relief operations worldwide, complementing the Defense Trade and Technology Initiative that promotes collaboration on defense technology. Lockheed Martin has also partnered with Delhi Technological University to develop the next generation of unmanned aerial systems for urban applications. Lockheed Martin has shown commitment and support for promoting Indian innovators and bringing them closer to the marketplace.

1.2.3 Indo-US Science and Technology Forum

The Indo-U.S. Science and Technology Forum (IUSSTF) was established in 2000 under an agreement between the Governments of India and the United States of America with a mandate to promote, catalyze and seed bilateral collaboration in science, technology, engineering and biomedical research through substantive interaction amongst government, academia and industry.

As its mandate, IUSSTF provides an enabling platform to the scientific enterprises of the two nations by supporting an S&T program portfolio that is expected to foster sustainable interactions with a potential to forge long term collaborations. IUSSTF program manifests are largely catalytic in nature that helps to create awareness through exchange and dissemination of information and opportunities in promoting bilateral scientific and technological cooperation. IUSSTF maintains a close working relationship with the federal agencies, laboratories, government institutions, and the academia in
U.S. and India, cutting across all disciplines. As an autonomous, not-for-profit society, IUSSTF has the ability, agility and flexibility to engage and involve industry, private R&D labs; and non-governmental entities in its evolving activity manifold. This operational uniqueness allows the IUSSTF to receive grants and contributions from independent sources both in India and the US, besides the assured core funding from the two governments.

The IUSSTF has played a critical role in execution of the IIGP by identifying core competencies of institutions both in India and the US and bringing them together for supporting commercialization of Indian innovations in the US markets.

1.2.4 Federation of Indian Chambers of Commerce and Industry (FICCI)

Established in 1927, FICCI is the largest and oldest apex business organization in India. Its history is closely interwoven with India’s struggle for independence, its industrialization, and its emergence as one of the most rapidly growing global economies.

A non-government, not-for-profit organization, FICCI is the voice of India’s business and industry. From influencing policy to encouraging debate, engaging with policy makers and civil society, FICCI articulates the views and concerns of industry. It serves its members from the Indian private and public corporate sectors and multinational companies, drawing its strength from diverse regional chambers of commerce and industry across states, reaching out to more than 250,000 companies. FICCI provides a platform for networking and consensus building within and across sectors and is the first port of call for Indian industry, policy makers and the international business community.

FICCI Centre of Innovation, Science and Technology Commercialization has been the implementation partner for the IIGP since 2007 in India. FICCI has played a key role in scaling the Programme over the last nine years in terms of outreach and impact.
1.2.5 Stanford Graduate School of Business

The Stanford Graduate School of Business empowers individuals to envision what is possible and make it happen through principled leadership and creative problem solving. The school has built a global reputation based on its management and leadership programs, including the two-year MBA; the one-year MSx Master’s Program; the PhD Program; Stanford Ignite, Stanford go-to-market program; and Executive Education. Each creates an experience that transforms people and prepares them to change lives, change organizations, and change the world. Programs engage the highest quality students with world-class faculty from across Stanford University, as well as alumni, Silicon Valley professionals, global executives, and the broader world community.

Stanford’s primary role in IIGP is in creating and delivering the educational content for the one-week course held every April in Goa, India. The content has been developed to fit the needs of the Indian entrepreneurs and is delivered via the same methods that are used in the Stanford MBA program. The goal of Stanford’s involvement is to foster innovation and entrepreneurship in India and have an impact not only on the Indian economy but also on the lives of the people in India and around the world.

1.2.6 IC² Institute, the University of Texas at Austin

Founded in 1883, the University of Texas at Austin is one of the largest universities in the US. Its core purpose is to transform lives for the benefit of society, and its mission is to achieve excellence in the interrelated areas of education, research and public service. UT’s motto “What Starts Here Changes the World” captures the idea that the university is able to make a greater impact in the areas of innovation, social and economic growth because of its size and impact in a vast number of fields.

IC² Institute of the University of Texas at Austin has devoted more than 30 years in establishing itself as a leader in technology commercialization through research, education and service. IC² Institute was founded on the premise that science and technology are resources for economic development,
enterprise growth, and shared prosperity worldwide, and the principle that entrepreneurship and technology transfer is the predominant source of wealth and jobs in market economics.

IC² has been a key partner of the IIGP since its launch in 2007 wherein it has provided in-depth capacity building and business development support to Indian innovators as well as incubation managers in commercializing their ventures in the global markets.

1.2.7 TiE Silicon Valley

TiE Silicon Valley is a non-profit association dedicated to fostering entrepreneurship in the Bay Area as well as globally. TiE strives to inspire entrepreneurs through mentoring, networking, education, incubating, and funding programs and activities. With nearly 50 events held each year, TiE brings together the entrepreneurial community to learn from local leaders as well as from each other. TiEcon attracts business professionals and startup employees alike with its keynote speakers, educational tracks, and networking opportunities. Entrepreneurs can enroll in TiE’s programs in order to receive mentorship from our successful charter members, compete for angel funding, talk one-on-one with venture capitalists, and more.

A cohort of innovators and incubation managers are taken to the US to expose them to the global best practices on innovation and entrepreneurship. TiE is responsible for designing and organizing a highly interactive program for this cohort in the US.

1.3 Programme selection process

The Programme consists of broadly six steps starting from inviting applications to providing business development support for successful commercialization. At the first stage of screening, 100 technologies are selected from the total number of applications received followed by a further selection of top 50 innovations by programme partners. These 50 innovators are provided in-depth
capacity building training and are invited to present at the innovation competition. Following the competition, 30 innovation awards are given.

Figure 1.3: Selection process

Step 1: Inviting applications

Applications are invited from across India through advertisements in leading daily newspapers, organizing pan-India road shows in tier-I and tier-II cities, and making presentations to potential technology companies, innovators, knowledge centers, incubation centers, etc.

Step 2: First screening

A team from FICCI evaluates and scores all the applications received to select the most appropriate technology companies on the basis of several predefined parameters (e.g., the development and patent status of the innovation, funding required for technology development, etc.).
Step 3: Second screening to select the top 50

FICCI approved applications and technologies are evaluated and ranked by a joint team comprising all programme partners to select the top 50.

Step 4: Entrepreneurship workshop

The selected 50 innovators are given week long advanced training in basic principles of product commercialization, readiness for market, business models, IP rights, competitive positioning, and mechanisms for revenue by experienced faculty members from the Stanford Graduate School of Business. The entrepreneurship workshop is organized to provide training to the innovators and also prepare them to participate in an innovation competition.

Step 5: Innovation Competition

The top 50 innovators present their innovations to a panel of judges comprising renowned technologists and commercialization experts from India and the United States. At the end of the competition, 30 best innovations will be awarded. Out of these 30, ten innovators are taken to Silicon Valley to participate in a programme focused on learning best practices on innovation, incubation and entrepreneurship. The other twenty innovators receive a cash award of INR one lakh each.

Step 6: Business development

Thereafter, the top 50 innovators receive professional business development assistance from FICCI and eight are also supported for global business development by the IC² Institute, University of Texas at Austin. The business development managers at FICCI and IC² Institute work towards assisting the winners in commercializing their technological innovations and finding them suitable business partners in India as well as global markets.
1.4 Programme evolution

Over the last nine years, the Programme has helped hundreds of Indian innovators take their innovations to global markets. From a humble beginning in 2007 (number of applications received being 102) to 2015 (the number of applications increased to 1015), the hard work and commitment of the Programme partners is aptly reflected in the popularity it has gained among India’s innovator fraternity.

In 2011, number of applications increased by more than 100% to 915 from 394 in 2010, the applicants representing diversified sectors including metals and mining, agriculture and forestry, transport and logistics, environmental and waste management. Considering the positive response to the Programme and its commitment to rewarding innovation, the programme partners increased the number of annual awards from 15 to 30 in 2011. The Programme has created a platform for innovators to become successful techno-entrepreneurs by converting their ideas into economic products and processes.
Many innovators, who received funding or forged industry partnerships as a part of their business development activity under the Programme, have been successful in expanding their operations and generating substantial employment.

1.5 Analysis of selected technologies (2007-2015)

The IIGP was envisaged with an aim to create wealth and boost economic growth through entrepreneurship and commercialization of innovative Indian technologies in global and Indian markets. It received a total of 6,124 applications from across the country during 2007–2015. The assessment of selected technologies out of the total number of applications received during this period is presented in the sections below.
1.5.1 Sectoral analysis

The pharmaceutical and healthcare sector accounted for the largest number of innovations being selected for the Programme with a share of 20% of the total in the last nine years. Innovation in the pharma sector is also boosted by “Pharma Vision 2020” formulated by the Department of Pharmaceuticals of India which aims to make India one of the leading destinations for end-to-end drug discovery and innovation in the world. It envisages achieving this objective by developing high quality infrastructure for talent and research by promoting public-private partnership (PPP) models, offering financial incentives to encourage and incubate innovation and shaping a favourable regulatory environment.

The Information and Communication Technology (ICT) sector attracted the second-highest number of applications from innovators across the country, accounting for 12% of the total technologies selected during this period. IT in India has grown rapidly during the recent years in India.
The energy and utilities sector was the third leading end-user industry, with 9% of the total number of technologies selected during the last nine years. Technological innovation is seen as the key to the future of the sector and makes a significant impact on energy and utilities sector. Emphasis on the use of alternative sources of energy is on the rise to ensure that India has a secure and sustainable supply of energy, which becomes the backbone for economic development.
Other end-user industrial sectors, including agriculture and forestry, electronic and manufacturing, aerospace and defense, waste management services, industrial goods and machinery, water and sanitation and automotive among others, accounted for the rest of the selected technologies during this period.

1.5.2 Gender analysis

A gender analysis of the participants based on their gender provides insights into the gender aspect. The analysis, in the following figure, shows that for every nine male participants, there was only one female participant. Though female participation in the Programme has continued to be low; over the years it has witnessed higher number of technologies being selected that have been developed by women indicating strong growth in innovation projects undertaken by women. The Programme witnessed an improving gender ratio in the recent years demonstrating increased diversity and inclusiveness in the whole programme framework. Such initial results have been achieved through targeted awareness campaigns resulting in receiving quality applications from women innovators.

1.5.3 Geographic analysis

The Programme attracted the largest number of applicants from South India, accounting for 46.7% of the total number of applications received during the last nine years. West India was the second leading region, with 21.5% of the total number of applications received, followed by North India (19.1%), East India (9%) and North-East central India (2.0%) and others (1.7%) respectively.3

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3The list of states included in each of the regions is provided in Annexure.
The figure below indicates that around half of the total participants belong to South India depicting the popularity of the Programme in the southern region. Participation from northern and western India are almost equal while numbers have reduced for the eastern region of India.

Figure 1.7: Geographic analysis of selected technologies (2007-15)
Business Engagement Agreements

Business Engagement Agreements (BEAs) are the outcome of the business development activity undertaken under the IIGP. BEA is a tool to capture the understanding between the competition winners and the potential collaborator defining roles and responsibilities of both parties. It primarily defines the engagement roadmap between two parties. These agreements are facilitated by business development managers from the FICCI and the IC² Institute at the University of Texas, Austin according to the terms and conditions agreed by the innovator and the potential industry partner/investor identified.

A wide range of business development support services are provided by FICCI and the IC² institute to innovators, based on their needs. Based on the stage of development of the innovation and requirement defined by the innovator, following support is provided:

- For individuals and pre-startups: Incubation facilities at leading incubation centers in India connect to funding programs for seed funding such as PRISM.
• For start-ups: Connect them with angel funds, venture capitalists, leading industry players for collaboration on pilot projects, assistance in technology transfer, connecting them to distributors, connecting them to relevant government schemes for scale.

• For government laboratories: Connecting them with industry players for technology transfer or joint development of a technology.

During the period 2007-2015, innovators entered several business deals for commercialization of technologies. In 2007, innovators entered 15 business deals with Indian and global companies. This number rose to 85 deals in the Year 2012 when the highest growth in business deals entered by innovators was witnessed with both Indian and global companies.

Figure 2.1: Business engagement agreements (2007-2014)
Some of the significant successful cases in recent past are described hereunder.

**Successful case studies: India**

<table>
<thead>
<tr>
<th>Name of innovation/ technology</th>
<th>Branchless banking technology solution combined with extensive distribution channel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>This technology consists of software, firmware, and hardware that allows for real-time access and interaction with a core banking system from satellite locations in retail outlets.</td>
</tr>
<tr>
<td><strong>Technology developed by</strong></td>
<td>FIA Technology Services Pvt. Ltd.</td>
</tr>
<tr>
<td><strong>Business Engagement Agreement (BEA) signed with</strong></td>
<td>ICICI Lombard, Mumbai</td>
</tr>
<tr>
<td><strong>Nature of engagement</strong></td>
<td>FIA will distribute ICICI Lombard ‘s products for rural/semi-urban market. Key products include, Health care for BOP, Artisan/Weaver healthcare insurance and vehicle loans.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of innovation/ technology</th>
<th>Guided Ultrasonic Pipe Monitoring System (GuMPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>GuMPS is a sensor which has the potential of detecting any kind of leaks or damages, predominantly corrosion in long range industrial pipelines.</td>
</tr>
<tr>
<td><strong>Technology developed by</strong></td>
<td>IIT Madras</td>
</tr>
<tr>
<td><strong>Business Engagement Agreement (BEA) signed with</strong></td>
<td>Reliance Industries</td>
</tr>
</tbody>
</table>
| **Nature of engagement**       | • The total cost envisaged for the project is US$100,000 (INR 60 Lakhs), which will be paid by RIL Jamnagar.  
• The project will be completed in three phases - each phase being of 8 months.  
• RIL expects that at the end of 24 months IIT Madras will be providing a system that can do inspection for corrosion under insulation.  
• Starting from the day of the completion of the project, RIL will avail discounted services for two years from IIT Madras. |
### Successful case studies: Global

<table>
<thead>
<tr>
<th>Name of innovation/ technology</th>
<th>Description</th>
<th>Technology developed by</th>
<th>Business Engagement Agreement (BEA) signed with</th>
<th>Nature of engagement</th>
</tr>
</thead>
</table>
| Antibiotic Adjuvant Entity – Elores™ | The Elores™ drug stops development and spread of bacterial resistance toward antibiotics, such as penicillin. These antibodies are increasingly rendered ineffective in a rapidly growing population of patients. | Venus Remedies Limited | Austell Laboratories, South Africa | One of South Africa's fastest growing pharmaceutical companies obtaining exclusive South African licensing rights to EloresTM for:  
  - US$100,000 (INR 60 Lakhs) upfront fee.  
  - Forecast cumulative 8-yr revenue: US$ 41 million (INR 255 crore)  
  - Venus’ direct revenue: US$ 9.7 - 13 million (INR 61 - 82 crore) |
| Cloud based SaaS Hospital Information System | Dr MHope is a cloud based hospital information system that elegantly integrates almost all of a hospital’s information needs. | Dr MHope | Caduceus Systems, Austin, Texas | • Dr MHope will convert Caduceus’ into a SaaS based application.  
  • Expected revenue: US$378,500 (INR 2.4 crore)  
  • Dr MHope receives 25% share of Caduceus’ current business valued at US$13.5 million (INR 84 crore) for exclusive distribution rights in the US. |
Section III
Programme Evaluation
Over the past nine years, the Programme has benefitted many innovators and incubations managers by providing them the thrust to grow their business and thereby catalyzing an innovation-led entrepreneurship culture in the country.

A programmatic evaluation has been carried out to assess the quantitative and qualitative impact for the participants over the years. The assessment methodology focused on gathering feedback directly from innovators and incubation managers to understand the impact the Programme has created on the business performance. Key performance assessment parameters are:

- Revenue earned
- Export turnover
- Employment generation
- Access to additional funding
The chief objectives of the Programme are to build capacities in Indian innovators on critical issues relating to technology commercialization and facilitate investor as well as market connects for successful conversion of ideas to businesses. Analysis on revenues, turnover from exports, business deals, employment generation and additional funds raised have been conducted to provide an overall summary of the Programme since its inception. The analysis helps in assessing the outcomes of the Programme and thereby, identifies areas of success and improvement.

To conduct the impact assessment, separate questionnaires were designed for both innovators and incubation managers. The data collected was thereafter analyzed to evaluate the impact of the Programme over the years and the trends were studied to derive key inferences.

3.1 Analysis of the feedback from innovators

The feedback was collected from 133 innovators, which represents a sample of 30% innovators selected as part of the Programme from 2007 to 2015. The survey emphasized on the growth realized and expected in terms of revenues, manpower employed, exports generated and access to additional funds. The questionnaire is attached as annex to this report. The results for each of these aspects have been described in the following sections.

3.1.1 Growth in revenue

The Programme continues to demonstrate a sustained growth in terms of cumulative revenue generated over the years. According to the information shared by the innovators, in 2013, total revenue amounting to INR 1,157.75 crore was generated cumulatively and it grew by 6.18% and 9.99% in 2014 and 2015 respectively. The total revenue generated in the period 2013 to 2015 was INR 3,739 crore.
The survey also captures the cumulative revenue projections from commercialization of technology for the next three years 2016 to 2018. The expected revenue amounts to INR 1,580.94 crore in 2016; for the two subsequent years, 74% and 206% revenue increase amounting to INR 2,745.24 crore and INR 8,407.22 crore is anticipated by the innovators. This clearly indicates that innovators are confident and upbeat about the significant growth in revenue from commercialization of technology.

\(^4\)For those innovators who have not provided the projected figures for any of the three years (2016 to 2018), the average of previous three years is considered in the next three years to arrive at a comparable figure of revenues.
and expansion of their business in the years to come and hence, signifies the value that IIGP adds to the growth of their businesses.

Therefore, considering revenue of INR 1500 crore in the period 2007 to 2012\(^5\), total revenue generated till the year 2015 amounts to INR 5,239 crore.

### 3.1.2 Employment generation

Employment generation is one of the key parameters to assess the impact created by the Programme. The innovators, upon successful commercialization of their technologies, hire trained manpower across different areas such as finance, strategy, operations, marketing, for smooth functioning of their ventures and future expansion. As and when the ventures grow in terms of revenue and outreach, the human resources hired by individual innovators and organizations also increase.

To gauge the impact of the programme, the growth in the number of employees over the past three years was analyzed. The primary information collected through the survey shows an increase of 523% in the number of manpower employed from 2013 to 2015.

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\(^5\) Covered in the First Impact Assessment Report, December 2012
Figure 3.2: Employment generation in the organizations

549 employees at first year of operation

3,422 employees at present

6The manpower data at the first year of operations has been provided by 94 companies and for the year 2015 has been provided by 100 companies
This analysis further strengthens the view that programmes such as IIGP play a critical role in fostering employment generation in the innovation driven industry of India.

### 3.1.3 Exports generated

Since the inception of IIGP, there are several innovators who are not only able to commercialize their technology but have also generated exports. In the period 2013 to 2015, the total export turnover of the innovators was INR 181 crore. The geographic spread of these innovators and the economic impact are analyzed as part of this section.

**Geographic outreach**

The innovators export their technologies to various countries across the globe. While these technologies were primarily exported to developed countries of the Europe and the US, some of the technologies also found takers in the upcoming and growing market of Africa. This signifies the market for Indian innovation and technologies are increasing beyond India and have significant potential for replicating the success in other geographies.

The following map shows geographical spread of countries to which technologies were exported.
The size of the balloon depicts the number of innovators exporting to these nations. The bigger the balloon, the larger is the number of innovators exporting to that nation.

**Economic analysis**

In 2013, innovators generated exports amounting to INR 27.55 crore. In 2014, a growth of 118.13% and in 2015 a growth of 56.27% was reported in exports. Innovators also projected exports trend till year 2018.
The above trend shows that the Programme has been successful in achieving the aim of promoting Indian innovations on a global platform. It further signifies that innovators are confident to continue the trend in the future and raise the contribution from exports manifold.

3.1.4 Additional funding from other sources

To facilitate fund raising, besides the business development undertaken by FICCI and IC² Institute, two technology expositions are organized annually by programme partners across India to facilitate interactions between innovators and potential funding sources including government, venture capitalists and angel funds.
Innovators received approximately INR 580.33 crore funding from various sources for their ventures over the last three years. These funds are used by innovators to expand the scale of business, and promote their ventures across the globe among others.

3.2 Analysis of the feedback from incubation managers

The Department of Science and Technology, Government of India nominates incubation managers of Indian incubators from all over the country to visit the US every year. These incubation managers visit the incubators operating in the US and interact with start-ups based in the US to understand their operational, sustainability and scalability models.

The Programme structure includes in-depth training on incubation models, lectures, training exercises to expose incubation managers to global entrepreneurship and incubation models. In addition to the curriculum, visits to the local technology incubators as well as small, medium and large technology
companies are organized. The goal of these visits is to expand learning network of the participants and familiarize them with the structure and processes of the US incubators and companies.

The visit helps Indian incubation managers to benchmark their respective operational methods against global best practices. The learning from the visit is then implemented by each participant in their respective incubators adding to the success rate of the incubators.

Feedback was collected from 20 of such incubation managers and results of the survey are shown in the following sections. The survey also shows the extent to which the training programmes have helped in resolving operational issues.

During the period of the analysis, the incubation managers have expressed their desire to have access to increased number and improved quality of trainings and learning opportunities, rise in funding received and establish global associations and partnerships. They were also able to implement the best practices from the US to their own incubators in India.

3.2.1 Experience during the program

The feedback received from the incubation managers was analyzed and overall results indicate experience of participants during the Programme.
3.2.1.1 Usefulness of training modules for Indian incubation centers

More than 60% incubation managers expressed that the Programme is highly relevant and useful to their area of expertise and has benefitted them significantly. This shows value creation for the Indian incubators and managers and ability to contextualize the learning to meet their needs.

3.2.1.2 Level of engagement and discussion with trainers

The training modules are an important part of the Programme comprising various lecture sessions, classroom exercises and peer-to-peer learning. The learning from these training sessions is implemented by incubation managers in India. More than 75% of the incubation managers felt satisfied after attending the Programme over the last three years signifying the success of this capacity building component of IIGP and high-level of involvement of the trainers in the US.

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7 Participants responded with 75-100% usefulness of training modules
3.2.1.3 Interactions with incubation centers of the US

As shown in the following figure, 47% of the Incubation Managers were satisfied with their interactions with the incubation centers in the US while 37% and 16% were partially satisfied and not satisfied respectively. This entails that there is a scope of improvement in the Programme to improve its overall effectiveness.

Figure 3.8: Whether satisfied with the interactions with the incubators in the US

3.2.1.4 Structure of Programme

The Programme is well structured around the centralized theme of commercialization of new innovations and technologies. Among the participants, more than 75% incubation managers opined that the Programme is structured in an efficient and professional manner while only 11% of the participants expressed a need for improvement.
3.2.1.5 Enhanced knowledge

After undergoing the training and interacting with the US trainers, 32% of the incubation managers were able to substantially enhance their knowledge and learnt about operational aspects of incubation centers. As depicted in the chart, 47% of the respondents considered the training sessions to be helpful.
3.2.2 Key learnings

According to the results of the survey, some of the key takeaways from the Programme for the incubation managers are as follows:

- The Programme provides an insight into the way the innovation ecosystem is built and works in the Silicon Valley and also identifies the tools and methods of adopting similar innovation eco systems in India.
- It promotes autonomy in the incubators and institutes to encourage ideation and innovation.
- It emphasizes the need to make incubators self-sustainable, deploying dedicated staff and creates awareness about IPR-related issues and patent registration process and requirements.
- The Programme focuses on creating an understanding of approaches to cultivate innovation and entrepreneurship in students.
• Field visits provide a first-hand account of the operational and financial models of the incubation centers.
• The Programme provides an in-depth account of the critical concepts such as technology commercialization, marketing, valuation, segmentation targeting, and positioning, pricing and promotion strategies

3.2.3 Impact of the Programme

3.2.3.1 Additional funding received

The Programme provided opportunity to several incubation managers to raise funds to expand their business in India and globally. Out of the total, 26% of incubation managers were able to raise additional funds for their centers and around 11% were able to network globally to create meaningful alliances and partnerships with incubators, faculty members and trainers in the US after attending the Programme.

Figure 3.11: Whether additional funding received by the incubation managers
3.2.3.2 Association with incubator, faculty or trainer in the US

The Programme is a platform which provides access and networking opportunities with investors, business partners, industrialists from the US and other countries. It provides an excellent opportunity to the incubation managers to explore international partnerships to help build their existing operating model and business channels. During 2013 to 2015, around 11% of the incubation managers were able to collaborate with international partners to bring global best practices to their own incubators.

Figure 3.12: Whether relationship exists with incubator, faculty of trainer in the US

3.2.3.3 Implementation of the learning

All incubation managers, who attended the Programme during 2013-15, were able to incorporate learning into their work in India. Therefore, the analysis shows that the program has built capacities for the incubation ecosystem in India across sectors.
According to the results of the primary survey, a majority of incubation managers made the infrastructural and operational changes at their incubation centers based on the learning from the Programme.

**Figure 3.13: Steps taken to implement the learning**

As many as 24% of the incubation managers revised their business models to have an increased focus on the markets and an equal number implemented a detailed process of technology validation in a more structured way in their respective incubators. Nearly 12% of the managers developed IP Exchange platform in order to facilitate licensing of technologies.

Some of the initiatives taken up by the incubation managers at their respective incubations:

- Initiated specifically designed capacity building programs for incubation managers of developing countries. So far, around 110 incubation managers from 40 developing countries have been facilitated
• Provided requisite guidance for designing the appropriate business model for an institute engaged in entrepreneurship education, research and training
• Developed a technology commercialization model
• Structured loan recovery, assessed performance of the incubator, identified the need for investment for company and enabled the sourcing of the same
• Promoted the importance of IP issues, resulting in 8 patents being filed
• Developed a suitable model for creating a venture capital funding system with D2E Consulting, Kolkata with US counterparts for startups
Section IV

Key Challenges
Section IV

Key Challenges

The Programme has been successful in creating an ecosystem and an institutional mechanism to support Indian innovators and entrepreneurs. However, some changes may be incorporated in the program structure to make it more effective so that it continues to play a crucial role in commercialization of Indian innovations and provides a boost to entrepreneurship and advancement in technology. The key challenges faced by the program over the last three years are highlighted below:

- Though there is an improvement in the gender ratio of the participants over the years, the number of women participating in the Programme is still very low as compared to that of men. Concentrated effort is required to address this major challenge and promote diversity.

- The innovators who attended the Programme are clustered in a few regions of the country. As shown in the previous section of the report, they primarily belong to southern, western and northern India while there is very little representation from eastern and central India.
Key challenges

- Lack of funds has been considered as one of the major challenges faced by several innovators in the Programme since its inception in 2007. Over the years, several innovations have displayed promising commercial prospects; however they have not received funding to advance their commercialization. Moreover, several technologies are still in the nascent stage as adequate funding is not available for research and business development activities.

- Several times the innovations are only driven by technology and not its business case and commercial aspects. These innovations have to face many restrictions from the industries and are not adopted easily. This is because the universities and institutes lack the ability to derive the business viability and market potential of the innovations.

- Lack of participation from industries is also a key challenge considering the fact that innovations are technology driven and industries are demand driven and to have a balance between the two is of utmost importance for efficient commercialization of innovations.
Section V

Recommendations
Based on the detailed analysis of the Programme, several recommendations are proposed below to make it a bigger success in future years.

- In order to increase the female participation in the Programme, awareness programs should be conducted which are centered on promoting women’s participation. Additional incentives may be given to women participants to encourage increased participation in the Programme.

- Special emphasis needs to be given to attract more and more financial institutions to the Programme so that more funds can be generated for commercialization of innovations. A dedicated fund by the Government of India and other programme partners may also be created in the Programme for the same purpose. It will help the participants to boost their R&D activities, market expansion, manpower, etc., and pace-up the commercialization process.
• Participation from industry needs to be encouraged to get a more holistic view of the needs of the customers so that the innovations are not merely technology driven, but also demand driven. This parameter is very important in predicting the success of the innovations after commercialization.

• Efforts should be made to increase the number of innovators selected each year to ensure a wider and larger coverage under the Programme.
Section VI
Appendix

6.1 Geographic Definition

**East India** comprises Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, West Bengal, Bihar, Jharkhand, and Orissa.

**South India** comprises Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, as well as the union territories of Andaman, Lakshadweep and Pondicherry.

**North India** comprises Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Punjab, Rajasthan, Uttar Pradesh, as well as the union territory of Chandigarh and New Delhi.

**Central India** comprises Madhya Pradesh and Chhattisgarh.
**West India** comprises Maharashtra, Gujarat, Goa as well as union territories of Dadra and Nagar Haveli, Daman and Diu.

Others include participants other than the above regions.

### 6.2 Questionnaire

#### 6.2.1 Innovators

<table>
<thead>
<tr>
<th>1.</th>
<th>Basic Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of the Innovator</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **Primary Industry Application:** | ○ Aerospace and defense  
 ○ Agriculture and forestry  
 ○ Automotive  
 ○ Information and Communication Technology  
 ○ Electronics & Manufacturing Sector  
 ○ Energy & Utilities  
 ○ Banking and Financial services  
 ○ Food Processing  
 ○ Industrial Goods and Machinery  
 ○ Pharmaceuticals and Healthcare  
 ○ Renewable Energy  
 ○ Skill Development  
 ○ Technology and Services  
 ○ Waste Management Services  
 ○ Water & Sanitation  
 ○ Others, Please specify |
| **Company/Institution Name:** | |
| **Business Set up of the organisation** | ○ Pre-start up  
 ○ Start up  
 ○ Existing small to medium enterprises  
 ○ Institutions & Universities  
 ○ Government Labs |
<p>| <strong>Address</strong> | |
| <strong>State/ Union Territory</strong> | |</p>
<table>
<thead>
<tr>
<th>Gender</th>
<th>○ Male</th>
<th>○ Female</th>
</tr>
</thead>
</table>

**Website**

<table>
<thead>
<tr>
<th>2. How much revenue (sales) have you generated from technology commercialization? (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>-------------------</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Have you generated any exports from technology commercialization?</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Yes</td>
</tr>
<tr>
<td>○ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3a. If the answer to Question 3 is Yes, then, In which countries have you exported?</th>
</tr>
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<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3b. How much turnover have you generated from exports?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
</tr>
<tr>
<td>-------</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. How many people have you employed in your business?</th>
</tr>
</thead>
<tbody>
<tr>
<td>In first year of operations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Is there any kind of additional funding that you have received?</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Venture Capital Investment</td>
</tr>
<tr>
<td>○ Private Equity</td>
</tr>
<tr>
<td>○ Angel Investments</td>
</tr>
<tr>
<td>○ Commercial borrowings (Loans)</td>
</tr>
<tr>
<td>○ Others, Please specify:________________________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5a. How much funding have you received? (in INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venture Capital Investment</td>
</tr>
<tr>
<td>Private Equity</td>
</tr>
<tr>
<td>Angel Investments</td>
</tr>
<tr>
<td>Commercial borrowings (Loans)</td>
</tr>
<tr>
<td>Others, Please specify</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Other comments (if any):</th>
</tr>
</thead>
</table>
### 6.2.2 Incubation managers

<table>
<thead>
<tr>
<th></th>
<th>Name of the Incubation Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Name of the Incubator</td>
</tr>
<tr>
<td>3.</td>
<td>City</td>
</tr>
<tr>
<td>4.</td>
<td>Gender</td>
</tr>
<tr>
<td>5.</td>
<td>Year of participation in the Executive Program on Technology Commercialization under IIGP</td>
</tr>
<tr>
<td>6.</td>
<td>Incubator’s technological thrust areas</td>
</tr>
<tr>
<td>7.</td>
<td>To what extent the training modules addressed the various issues faced by incubation center in India?</td>
</tr>
<tr>
<td>8.</td>
<td>On a scale of 1-5 (5 being highest), Rate the following questions:</td>
</tr>
</tbody>
</table>

- **1. Name of the Incubation Manager**
  - [ ]

- **2. Name of the Incubator**
  - [ ]

- **3. City**
  - [ ]

- **4. Gender**
  - [ ] Male
  - [ ] Female

- **5. Year of participation in the Executive Program on Technology Commercialization under IIGP**
  - [ ]

- **6. Incubator’s technological thrust areas**
  - [ ] Agriculture
  - [ ] Automotive
  - [ ] Food Processing & Clean Technologies
  - [ ] Information & Communication Technology
  - [ ] Mechanical & Electronics
  - [ ] Pharmaceutical & Healthcare
  - [ ] Renewable Energy
  - [ ] Rural & Social Inclusive innovations
  - [ ] Textile & Garment Technology
  - [ ] Other, Please specify
  - [ ]

- **7. To what extent the training modules addressed the various issues faced by incubation center in India?**
  - [ ] 100%
  - [ ] 75% to 100%
  - [ ] 50% to 75%
  - [ ] 25% to 50%
  - [ ] <25%

- **8. On a scale of 1-5 (5 being highest), Rate the following questions:**
  - **8a. The focus of the training was capacity building on technology commercialization and related aspects. Did you agree that the program was structured suitably?**
    - [ ] 1
    - [ ] 2
    - [ ] 3
    - [ ] 4
    - [ ] 5
| 8b.  | To what extent, the training modules and discussion by trainers helped you to enhance understanding in strengthening of Incubation centers? | 0 1 | 0 2 | 0 3 | 0 4 | 0 5 |
| 8c.  | How helpful was your interaction with incubation centers in the US for your incubation center? | 0 1 | 0 2 | 0 3 | 0 4 | 0 5 |
| 8d.  | Rate your overall experience of the program? | 0 1 | 0 2 | 0 3 | 0 4 | 0 5 |
| 9.   | Have you implemented the learning gained from the programme in your Incubation Center? | | | | | |
| 10.  | Which of the following steps have you taken in order to implement the learning in your Incubation Center? | | | | | |
| 11.  | Have you entered into an association with any incubator, faculty, and trainer in US after this programme? | | | | | |
| 12.  | Have you received any other funding (grant, fellowship, etc.) after this programme? | | | | | |
6.3 Impact assessment coverage and approach

6.3.1 Scope of services

The scope of services to be provided by EY under the present assignment is as follows:

- Prepare questionnaires for participant companies/innovators and incubation managers for primary survey.
- Perform sectoral, geographic and demographic analysis of the information collected from the questionnaires.
- Analysis of impact of the programme in terms of revenue generated, employment generated, expansion of office operation, etc.
- Review of previous impact analysis report and highlight the changes.
- Identify key challenges faced by the participants of the programme.
- Suggest broad recommendations to further improve the experience of the IIGP.
6.3.2 Our approach

The overall approach of EY for conducting this evaluation is depicted in the figure below:

Figure 6.1: Our Approach

The focus of the survey has been on ensuring coverage of all the critical elements which denote success of the programme. These elements are revenue, export, manpower and funding. The survey collection and data entry was managed by FICCI. We did not interact with the respondents directly. The survey has been conducted in a very transparent manner by drafting and providing the survey forms to FICCI for feedback collection.

The findings of the survey are then analyzed as part of this report and recommendations are suggested accordingly.
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