

Grassroots innovation in India

National Innovation Foundation, India

<http://nif.org.in/initiatives>

The National Innovation Foundation (NIF) - India was set up in March 2000 with the assistance of Department of Science and Technology, Government of India. It is India's national initiative to strengthen the grassroots technological innovations and outstanding traditional knowledge. Its mission is to help India become a creative and knowledge-based society by expanding policy and institutional space for grassroots technological innovators.

NIF scouts, supports and spawns' grassroots innovations developed by individuals and local communities in any technological field, helping in human survival without any help from formal sector. NIF helps grassroots innovators and outstanding traditional knowledge holders get due recognition, respect and reward for their innovations. It also tries to ensure that such innovations diffuse widely through commercial and/or non-commercial channels, generating material or non-material incentives for them and others involved in the value chain.

NIF has pooled a database of over 310,000 technological ideas, innovations and traditional knowledge practices (not all unique, not all distinct) from over 608 districts of the country. NIF has till date recognised 847 grassroots innovators and school students at the national level in its various National Biennial Grassroots Innovation Award Functions and annual Dr A P J Abdul Kalam Ignite Children Award functions. In collaboration with various research & development (R&D) and academic institutions, agricultural & veterinary universities and others institutions, NIF has helped in getting several hundred grassroots technologies validated and/or value added.

NIF has also set up an augmented Fabrication Laboratory (Fab Lab) with the help of Massachusetts Institute of Technology (MIT), Boston, for product development and strengthening in-house research. Pro bono arrangement with intellectual property firms has helped NIF file over 1040 patents, including eight filed in the USA and 28 Patent Cooperation Treaty (PCT) applications, on behalf of the innovators and outstanding traditional knowledge holders. Of these, 72 patents have been granted in India and 5 in the USA. In the same time period NIF has filed 21 Design registrations for innovations of the grassroots and student innovators. In addition to this 10 trade mark applications have also been filed.

NIF has also filed applications for 71 plant varieties developed by farmers at the Protection of Plant Varieties & Farmers' Rights Authority. Of these, 9 have successfully been registered.

Micro Venture Innovation Fund (MVIF) at NIF, with support from Small Industries Development Bank of India (SIDBI), has provided risk capital to 230 innovation based enterprise projects, some of which are at different stages of incubation.

NIF has received over 1500 product inquiries from 110 countries for various technologies. It has also succeeded in commercialising

products across countries in six continents, apart from being successful in materialising 109 cases of technology licensing.

Selected initiatives

Grassroots Innovations Design Studio (GRIDS): Grassroots Innovation Design Studio (GRIDS) facilitates formal design inputs to the grassroots innovations at premier institutes viz National Institute of Design (NID) - Ahmedabad, Indian Institute of Technology (IIT) - Gandhinagar, National Institute of Technology (NIT) - Srinagar and Srishti School of Arts, Design & Technology, Bengaluru.

Students' Club for Augmenting Innovations (SCAI): A nationwide student movement, comprising students from India's best management and technology institutes, SCAI provides product development, mentoring and monitoring support to innovators and traditional knowledge holders at the grassroots.

Micro Venture Innovation Fund (MVIF): One of its kind of dedicated risk fund in the world, setup with the support of SIDBI in October 2003 and operationalised in January 2004, MVIF provides financial support to grassroots innovators. It is extended under a single signature on a simple agreement of understanding without any collateral or a guarantor.

Grassroots Technological Innovations Acquisition Fund (GTIAF): Sanctioned in 2011 and operationalised in 2012, GTIAF obtains the rights of technologies from innovators after compensating them for the same, with the purpose of disseminating and diffusing them at low or no cost for the larger benefit of the society.

Gandhian Inclusive Innovation Challenge Awards: The Award aim towards developing new solutions for three challenges -- paddy transplanter, wood stove and tea leaf-plucking machine.

Grassroots to Global (G2G): NIF has proved that Indian innovators can match anyone in the world when it comes to solving problems creatively. They perform better than others in generating greater sustainable alternatives by using local resources frugally. Those who see poor only as the consumers of cheap goods, miss the richness of knowledge at grassroots level. The G2G model propagated by NIF is all set to change the way the world looks at creativity and innovations at grassroots.

In situ incubation: NIF provides in situ incubation of grassroots technologies to the innovator at his/her place. All incubation facilities (financial or technical support, mentoring, etc.) are extended to the innovator at his place where he continues to work on his/her ideas or innovations.

Inverted model of innovation: The inverted model of innovation implies that children invent, engineers & designers fabricate and companies commercialise.

Catalyzing digital innovation ecosystems in Malaysia

Malaysia Digital Economy Corporation Sdn Bhd, Malaysia

<https://www.mdec.my>

The future lies in innovation, and at Malaysia Digital Economy Corporation (MDEC), we believe that being ahead of the technology curve is the way to future-proof businesses. Big Data Analytics (BDA), the Internet of Things (IoT), E-Commerce, and Data Centre & Cloud are our key focus areas that have been identified as catalysts that will kickstart and sustain an ecosystem of digital innovation, keeping us at the forefront of technology.

Big Data Analytics (BDA)

Malaysia is one of the few countries with a structured Big Data Analytics (BDA) roadmap to untap the value of big data. At the turning point of digital revolution, the powers of big data can be used to describe a problem, assess a situation, forecast results, and prepare solutions. Business owners, government, and citizens all stand to gain from Malaysia's vision as ASEAN's leading BDA solution hub.

To make this vision a reality, MDEC is spearheading this platform to lead efforts and create conversations. MDEC works to encourage and increase BDA adoption across all sectors by developing talent in the field of data science and enabling strategic partnerships, while introducing upskilling efforts and spurring integrated initiatives.

Our strategic initiatives are:

- Generating (Increasing) the usage of BDA in private sectors.
- Catalysing the adoption and usage of BDA in public sectors.
- Building the BDA industry in Malaysia.

To propel MDEC forward as an industry leader in ASEAN, we have set up the ASEAN Data Analytics eXchange (ADAX), a regional platform that brings together innovative talent development models and showcase the latest BDA technologies. A national initiative to benefit Malaysia, ADAX has the unique opportunity to serve a greater national agenda. This aspiration can only take flight by building a Big Data community through shared values, skills building and collaboration around a robust data analytic ecosystem.

By piloting advanced data analytics use cases for the ASEAN region and providing a co-working location for BDA start-ups and accelerators, ADAX has a unique opportunity to catalyse the migration of traditional organisations to become Data Driven Organisations.

Data centre & cloud

Malaysia's Data Centre & Cloud industry is marked by broad trends of expansion, efficiency, and consolidation. Rising above

comparisons like China, Indonesia, and India, Malaysia holds the advantage in attracting potential clients and investors thanks to a climate of political stability, location that is free from natural disasters, and competitive real estate market. With a year-over-year growth of over 20% in the last five years in Malaysia, the field of digital data management has never been more ripe for the picking.

The main strategy for the proliferation of data centre and cloud is to cement Malaysia's position as the epicentre for technology-driven delivery of digital content and services in the region, with centres spanning 5 million sq ft by 2020. MDEC works to position Malaysia as a regional hub for data centre and cloud services by leveraging on various factors such as cost efficiency, availability of skilled workers, and a strong foundation of data governance laws.

Local data cloud players are strengthened through MDEC's initiatives by priming their high-value services to be regionally competitive. This is done by facilitating the growth of data centre parks in strategic locations through world-class physical and soft infrastructure.

International businesses also stand to gain from MDEC's FDI policy as it offers an attractive portfolio of incentives for Cloud/Internet Giants to invest and set up facilities in Malaysia.

E-commerce

We live in a time where half the population are digital buyers, which is why e-commerce is an important stepping block to 'future proof' existing businesses while opening up market access. However, the eCommerce ecosystem development in Malaysia is still at an early stage.

According to A.T. Kearney findings under the National E-Commerce Strategic Roadmap, Malaysia is at a turning point of e-commerce growth which must be sped up through government involvement. Issues that need to be resolved are lack of offerings, poor fulfilment experience, low adoption and awareness and lack of supporting ecosystem.

For Malaysia to move beyond the early stage, it needs a strong support and focused government intervention to drive it forward to the growth stage. Through efforts such as #MYCYBER-SALE which started in 2014, we have achieved RM67 million Gross Merchandise Value (GMV) in 2014 and RM117 million in 2015.