

Industry

Hi-tech startups urge PM's support to ignite defence industry

Updated: January 11, 2016 15:33 IST | Peerzada Abrar



The problem is that government has same procedure for buying chairs as well as hi-technology, says Parag Naik, chief executive of Saankhya.

Tucked away in a lane of Bengaluru's residential colony in Hennur and surrounded by shopping malls, schools and multi-national companies is the office of hi-tech startup Saankhya Labs.

It has built a chip Pruthvi, the size of a postage stamp that functions as a software-defined radio (SDR).

SDR is a radio communication system where components that have been typically implemented using hardware are instead replaced by software.

This reduces cost, power consumption and size of components on a personal computer or embedded system.

Pruthvi has so far been used to power satellite phones, drones and satellite receiver for the Indian Space Research Organisation's communication satellite.

Software radios have significant utility for the military which must serve a wide variety of changing radio protocols in real time. Pruthvi can also integrate new technology with old legacy equipment.

Interestingly, the government is spending thousands of crores of rupees on tactical communication system, battle management system and procuring satellite phones for the armed forces.

The capability to build such systems is in India's backyard due to presence of scores of small hi-tech companies and startups like Saankhya Labs. But the irony is that India imports more than 70 per cent of its weapons and technology for its defence needs.

Parag Naik, chief executive of Saankhya has been keen to sell such innovations for defence but finds it futile to convince the authorities that his products are best in the world.

Start Up India programme

As Prime Minister Narendra Modi unveils ambitious 'Start Up India' programme this week, hi-tech companies are asking the government to pay attention to the aerospace and defence innovations offered by them.

“There are many startups in the country which have developed products including drones and night vision systems that have got applications for the defence,” said TV Mohandas Pai, former Infosys director and India's top angel investor.

“The time has come for the defence minister to showcase all these firms to the top brass of the armed forces.”

Mr.Pai has collated a list of such firms and is planning to share it with Defence Minister, Manohar Parrikar.

The difficulties and frustrations that small hi-tech companies face range from hostile bureaucratic set up on the one side and a colonial mindset on the other. Young firms have to compete for government projects with large companies

“The problem is that government has same procedure for buying chairs as well as hi-technology,” said Mr.Naik whose Pruthvi product is protected by 23 international patents. “What government can do for us is to provide access to the market and access to the funds.”

Small companies said that the government is doing little to encourage them. This is unlike in the United States, Israel and China where grants are given for companies with promising technologies.

Collateral free venture fund

Start up founders said that there has to be a collateral free venture fund or risk capital that invests in strategic electronics companies. This should be for product development and not contract engineering services. The fund should be at least the size of a small private venture fund, over Rs.500 crore, according to the experts.

“The government venture fund should be run by a technology expert who has been an entrepreneur or experienced venture capitalist with a successful track record,” said Arvind Lakshmi Kumar, founder of Tonbo Imaging, a Bengaluru-based maker of advanced night vision systems.

Night Vision Systems

Tonbo makes night vision systems for Indian and international customers including DARPA, an advanced-technology branch of the U.S. Department of Defense. Its products are being used on observation platforms, reconnaissance drones, and artillery and naval weapon systems. But from being a purely Indian company, Tonbo had to become a global products business based out of Singapore. This is because benefits are offered to international suppliers on buy-global Indian programmes. Indian suppliers are levied customs duties at the component level and taxes at the product level. Foreign bidders don't face this problem.

India's defence spending is expected to hit \$620 billion (Rs 41 lakh crore) between 2014 and 2022, according to a report by industry lobby Federation of Indian Chambers of Commerce and Industry and financial services firm Centrum Capital.

India was the largest importer of major arms in 2010–14, accounting for 15 per cent of the global total, according to Sweden-based Stockholm International Peace Research Institute (SIPRI). In 2010–14 India's imports were three times larger than those of either of its regional rivals China and Pakistan.

“We have become so used to foreign technology,” said Mohandas Pai.

Drones

With 22.5 per cent of the world's unmanned aerial vehicle (UAV) imports, between 1985 and 2014, India ranked first among drone-importing nations, followed by United Kingdom and France, according to data provided by SIPRI.

In Navi-Mumbai, ideaForge Technology is in pursuit to change this by making indigenous UAVs. But it needs

support from the government.

Founded by IIT-Bombay graduates ideaForge has developed Netra, an unmanned aerial vehicle in collaboration with Defence Research and Development Organisation.

It can be deployed for counter insurgency, border management, hostage situations and disaster management. It flies autonomously and returns on its own to the home base after completion of the mission. "The government has to set a shining example of being a 'great customer'," said Ankit Mehta, 32-year-old cofounder and chief executive of ideaForge Technology. "Also there is not sufficient funding available."

The firm already supplies its drones to customers like Central Reserve Police Force, The Border Security Force and various State police forces.

They were also used in the recent Nepal earthquake and the Uttarakhand flood relief and rescue operations.

Robots

Experts say to turbocharge the aerospace and defence innovation India require programmes like the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) in the United States.

These programmes are one of the largest sources of early-stage capital for innovative small companies in the United States. These initiatives allow small businesses to engage in federal research and development that has a strong potential for commercialization.

"I was surprised to discover that Internet, shielding technology for jet fighters and bomb disposal robots were developed by smaller companies in the US as part of these programmes," said Aakash Sinha, founder of New Delhi-based Omnipresent Robot Technologies. The firm has designed, developed and supplied indigenous unmanned robots to Indian defence. These robots can go into difficult terrains and send back audio and video data wirelessly. They can also detect explosive material.

Omnipresent is also developing a navigational module for ISRO's Chandrayaan-2 moon mission.

Mr. Sinha, a 35-year-old robotics scientist, had worked at US companies including Lockheed-Martin and iRobot Corp before returning home. As the technical head at iRobot his team delivered over 3000 packbot robots to the US Army. These were deployed in Iraq and Afghanistan to dispose bombs.

Startup entrepreneurs said they are not asking for any preferential treatment. But at the same time preference should not be given to public sector units as well.

"They (small firms) will become complacent like public sector units and not innovate to be competitive," said Mr. Lakshmikumar of Tonbo. The only place they should be given flexibility is payment terms to support cash flow. The venture money should only be used for product development and market development. Small companies should get advance payment and exemption from Earnest Money Deposit (a form of security deposit) and letter of credit payment terms.

As Mr. Modi interacts with global CEOs and founders of over 1,500 startups from across the country this week at 'Startup India' programme, he has a big chance to connect with India's hi-tech firms.

"'Digital India' and 'Make in India' is the last chance to build a robust electronics hardware industry," said Mr. Naik of Saankhya Labs.

Homegrown technology

Startups seek government's help to keep large defence companies at bay



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*India's defence spending is expected to hit \$620 billion between 2014 and 2022, according to FICCI and Centrum Capital.

*Hi-tech startups are asking the government at pay attention to the aerospace and defence innovations developed by them.

*Saankhya Labs' postage stamp sized chip powers satellite phones, drones and satellite receivers using software-defined radio technology.

*Tonbo Imaging makes night vision systems for Indian and international customers including US-based DARPA.

*IdeaForge Technology is making indigenous Drones.

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