SPACE INDUSTRY

A hi-tech spinoff

The Indian Space Research Organisation has begun to transfer advanced technology to the commercial sector.

It is a high-profile, hi-tech organisation packed with some of the finest scientific and technical minds in the country. In keeping with its glamorous profile, the Indian Space Research Organisation (ISRO) has a generous budget (Rs 300 crores in 1987). It is only at times of crucial failures—like the ASLV launch vehicle which plunged into the Bay of Bengal last week—that the space agency has to battle criticism that it is an unnecessary drain on the economy.

But ISRO is trying hard to prove that it isn’t. And it need not be. Space programmes in the West, especially in the US, have yielded spectacular dividends, not only from their direct applications, but from the spinoffs of technology developed in the space industry.

Take Teflon for instance. The non-stick coating on ordinary frying pans was first developed by Dupont for NASA, the US space agency, ten years ago. It is no longer needed for space vehicles.

Technology transfer is the name of the game. ISRO has joined in as a full-fledged player. Its technology transfer cell, tentatively set up in 1982 to institutionalise the concept, is finally scoring goals. Last year, a record 25 technologies that came off ISRO’s labs found their way into Indian industry. With that, the total number of products and processes transferred has gone up to 133, with another 126 in the pipeline.

The technologies that could be transferred were many. They covered fields as diverse as high precision optics, electronics, adhesives, ceramics, computer software, television hardware and so on. What the technology transfer cell had to do was identify the product and process, target it at a particular industry, and invite applicants for sharing the technology for its commercialisation. It made the offer attractive. “In many cases,” says Sudarshan, “we helped a prospective entrepreneur right from market surveys through institutional financing and product launch.”

And ISRO’s technology was going cheap. One of its licensees, Hind Hi Vacuum of Bangalore, paid only Rs 15,000 for infra-red coating knowhow. “No one can complain about the price,” says the company’s managing director, S.V. Narasaiah. The idea was that since the technology was developed through public money, it should go back to the public. But the technology transfer cell had to be very careful in the way it went about transferring technology. After all, these were new products, never before launched in the country. There was no existing market. “We wanted market development to take place through our licensees,” says Sudarshan.

ISRO made sure they did not flood the market at once. “We wanted the licensees to compete, not kill each other,” he says. Yet there was never any exclusive licensing. Even for the public sector, ISRO wanted its technologies to compete in the marketplace. Today, many technologies are being...
Most of the ISRO technologies are very hi-tech. But some have trickled down to the consumer sector. A pride of place goes to its internationally patented ‘Isropols’, which are indigenously developed polyols made from castor oil.

Although there was no formal transfer of technology to Dynascan, ISRO helped them to perfect their magnifier for its own specifications. And in addition to a buyback commitment, ISRO, and especially Sudarshan’s team, helped Dynascan’s Arun Kumar find other buyers for the magnifiers. They put his name on their producers’ list, which is regularly circulated to potential markets. “They are very good at liaising between users and manufacturers,” says Arun Kumar. Now, about half of Dynascan’s magnifiers are sold to industrial customers like MICO, the spark plugs leaders.

But how much of ISRO’s technology is really indigenous? Where does one draw the line that makes a commonly used technology ‘Indian’? It is very hard to say. “All technology is really only incremental,” says Sudarshan. “And if you ask me what has been the great Indian leap forward, I would say we can’t claim anything great.” But Sudarshan thinks this is a period of such tremendous transition, that it is enough if we just catch up. “Today, with urban services being the main demanding post for few technologies,” he says, “the time between the origin of an idea, its labwork and its reaching the market has reduced in the West to about a couple of years.”

In India, of course, the lag is much wider. National research labs are only just emerging from their Brahminical attitude to research.

ISRO’s technology transfer cell was set up specifically to counter that. Even if its success has been limited, credit must go to its team for its efforts.

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