Talent from Outer Space

Major missions like moon and Mars have helped ISRO spruce up its image and get new talent. Hari Pulakkat unpacks how Mangalyaan is helping ISRO attract more and better talent



ISRO Chairman K Radhakrishnan

Men and Money in Space

The world's major space powers at a glance

	Staff Strength	Budget
ISRO	17,000	$1.1 billion
NASA	18,000	$17.8 billion
European Space Agency	2,000	$5.51 billion
Russian Federal Space Agency	10,000	$5.6 billion
China National Space Administration	-	$1.3 billion

Note: These figures should not be compared directly, as the number of partners and contractors differ widely in each country

Priyank Gupta joined the Indian Space Research Organisation (ISRO) in 2003. As a child he was deeply interested in space engineering and had read a lot about NASA, but he knew little about ISRO or its work. He used to scan his career options as he studied mechanical engineering in Gwalior, and started following the space organisation through newspapers. ISRO had by then begun tasting success in its launches. Gupta applied for a job in ISRO and got selected.

For a fresh engineer in 2003, it was not an easy decision to join a public sector organisation. Gupta had seriously considered other avenues. He had performed well in the national qualifying examination for engineering masters admissions, and was toying with the idea of going to an IIT. Some of his friends then convinced him to join ISRO. "They told me that I would be looking for an R&D organisation after my master's degree," says Gupta. "So why not join ISRO and let them sponsor your master's course?"

Now, Gupta works on the next generation Geostationary Launch Vehicle (GSLV), the heavy lifter that ISRO is developing for launch next year, and sits in its design review committee. ISRO sponsored him for his master's degree in aerospace engineering from the Indian Institute of Science, and he is looking forward to the day when he can do a PhD. Meanwhile, he works on challenging projects. His former classmates working for top companies earn more money than Gupta. They hop jobs as they get bored at work quickly. "My classmates are not content with what they do no matter where they join," says Gupta.

In 2003, ISRO was not getting enough of young engineers like him. The organisation did not have big successes, and its future was uncertain in the public eye. Meanwhile, the private sector let by software companies had grown significantly since the 1990s, and was paying the graduating engineers handsomely by Indian standards. By the start of the new millennium, multinationals expanded their R&D centres around the country, and these centres looked like an attractive destination for an undergraduate engineer. The public sector started losing out.

Moon mission launch and its success in 2008 caught the public imagination. Job applications to ISRO skyrocketed and continued to rise for the next five years

It all changed after the moon mission. This had been in the works for a while, but the actual launch and its success in 2008 caught the public imagination. Job applications to ISRO skyrocketed, and continued to rise through the next five years. Now, the Mars mission has maintained public interest in ISRO. In 2007, ISRO had about 45,000 applicants for 351 entry-level jobs. In 2013, it had nearly 1.4 lakh applicants for 83 jobs. The number of jobs has declined because it added an additional stream of recruitment: the Indian Institute of Space Science and Technology (IIST) in Thiruvananthapuram, an engineering institute set up by ISRO and now a deemed university.

This increase of public interest happened in other institutions too. The Department of Atomic Energy (DAE) had a similar spurt of job applications after the nuclear tests in 1998. Unlike the DAE, ISRO has been able to maintain public interest through the Mars mission, and should be able to continue to do so through future missions to the moon, sun and human spaceflight. It is a big change of public perception for ISRO from the 1990s, when it was ridden with launch failures and public scandals. The number of applicants for jobs then was only a few thousand. "The perception of the people changed after the successful programmes," says P Kunhikrishnan, project director of PSLV.

There's a big change in public perception for ISRO from the 1990s, when it was ridden with failures and scandals. The no. of applicants for jobs then was only a few thousand.

ISRO did not have so many technology development programmes in the 1990s. So, an engineer who joined the organisation could work on one development project, after which monotony set in. Some of those who left the organisation more than a decade ago, and are now in the private sector, had told ET that they were bored with the repetitive jobs. New engineers at the Vikram Sarabhai Space Centre (VSSC) could work on either the PSLV or the GSLV. The PSLV matured quickly, while the GSLV development was focussed on the cryogenic engine.

Now the situation is a bit different. Geethu Jacob, a young engineer who joined ISRO last year from IIST, was determined to be an aerospace engineer, and joined IIST because she could not get into an IIT. But now she has her first job working on the crew module of the GSLV that will power a human flight. After several years, she could be sponsored by ISRO for a master's degree programme. "There is an opportunity in ISRO to work in core engineering," says S Somanath, project director of GSLV Mark III. "Many private sector jobs are in IT and business."

Along with the recent increase in applicants, there was another change: the geographical spread of the recruits. If you go to VSSC now, for example, you would find most of the senior managers to be from Kerala or the neighbouring Tamil Nadu. This was because a large number of recruits through the 1980s and 1990s were from there. Now, the recruits come from all over the country. So, ISRO is set to acquire a more pan-Indian tinge over the decade. In recent times, the remuneration has changed too, and salaries have increased substantially relative to earlier government salaries.

In the future, ISRO would continue to face pressure from private sector. As its programmes improve in sophistication, so would the programmes of private R&D centres. "Earlier, private industry jobs were not sophisticated," says ISRO Chairman K Radhakrishnan. "But now the value addition is high in industry." ISRO still does not get the top-notch graduate engineers from the best IITs. But it could manage well if the next best make the organisation one of their top choices.

Economic Times, Pune September 18, 2014 Pp. 15