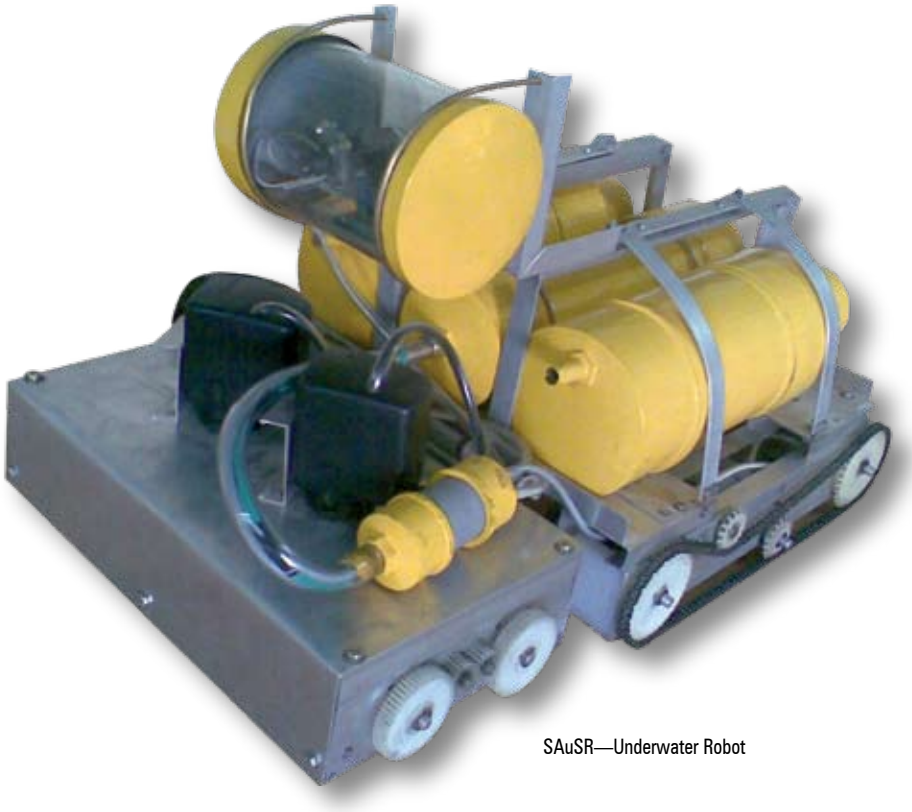
Making Robots Go Mainstream!

Robots could well be entering your homes, thanks to the efforts of companies like Gridbots, which has developed robots that can act like buddies—helping and guarding us in a simple, yet effective, manner.



SAuSR—Underwater Robot

Himanshu Yadav
'i.t.' Bureau

Once perceived as a niche product, robots have already begun to be accepted as machines that could become a part of our daily routine. As the personal robot market expands, new players are emerging with innovative robots, trying to shake the hegemony that countries like the US, Korea and Japan enjoy in this segment. One of these is Gridbots, an Ahmedabad-based start-up, that claims to have developed India's first indigenous home robot, as well as the country's first underwater tank cleaning and inspection robot.

The aim is to bring a little change into everyone's life through technology that is innovative, and with products that are altogether different, claims Pulkit Gaur, CEO, Gridbots. The company is looking to make robotics a part of day-to-day life by catering to the needs of corporate as well as household users.

All about smart machines

With a target market comprising consumer electronics, home automation and security/surveillance, Gridbots has developed intelligent products that Gaur claims are unique in the market.

The company feels that since their products are designed smart and can think by themselves, making them more responsive and energy efficient, it gives these products an edge over the competition. Their capacity to connect, share critical data and exert extended control are features that make these machines more accessible, allowing consumers to keep tabs on them, if needed.

Speaking about the technology behind Gridbots' products, Gaur explains that the company's focus has always been on bringing something to the consumers that was intelligent but non-traditional. Gaur and his team realised that most of the products in the market were lacking in terms of intelligence. With responses being pre-programmed, these were simple 'press and go' systems. This lacuna gave his teammates the idea of coming out with something that was not hard wired and had the ability to evolve.

"Many of the products and technologies that we use in our products are state-of-the-art and have been in labs for all these years—we have tried to bring such

A trillion dollar business

According to sources in Gridbots, the consumer robotic product market is expected to touch $ 1 trillion by 2013, as compared to today's market size of $500 billion. The market for personal robots is expected to soar to $17 billion by 2010. Although this space is currently dominated by countries like the US, Korea, and Japan, Indian players too are trying to make their presence felt.

technology to our consumers by encapsulating them with easy-to-use interfaces. Grid-Genesis is the design architecture behind the robots, surveillance systems and RF-enabled automation systems that makes our products dynamic and responsive in behaviour," says Gaur.

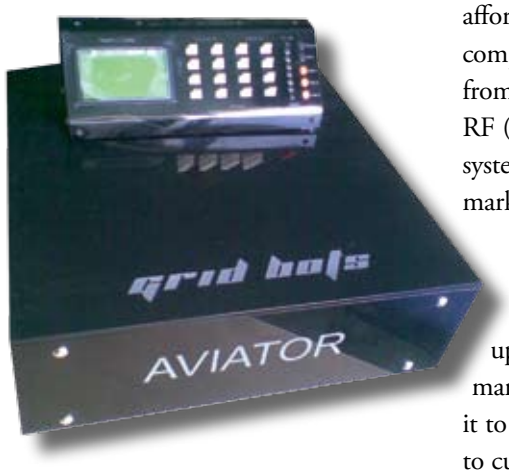
Fuelling R&D, while checking costs

The firm relies heavily on its research and development department to foster a culture of growth and innovation, and stay ahead of the competition. About 80 per cent of the resources and nearly 90 per cent of the company's total expenditure is devoted to R&D alone.

"We will continue to strengthen our R&D efforts as we believe it is the key to any company's success. We have assigned a major chunk of our revenues to be spent on R&D, which I believe will increase in the coming years," reveals Gaur.

As a strong and efficient team plays an important role in delivering fruitful results, the company is constantly on the look out for research scholars who can bolster its R&D initiatives with a focus on AI (artificial intelligence), machine vision and robotics.

The company also aims to achieve some standardised automation protocols with global standards to suit specific industry needs, which it hopes will enable easy integration and reduce the cost of ownership.



Aviator—research robot

Gridbots is an Ahmedabad-based start-up, that claims to have developed India's first indigenous home robot, as well as the country's first underwater tank cleaning and inspection robot.

Gaur explains Gridbots' approach to costs: "Cost, according to us, is misleading in many aspects and is not sufficient to express how much a product costs to a consumer throughout its lifetime. We believe in a much broader term, that is, the total cost of ownership. Our product costs vary according to the models and associated services—yet, they still are at par with the existing prices of similar equipment sold today."

The business philosophy of the firm is to make high-end technology available to a wider audience at affordable prices. Being a product-based company, Gridbots' revenue is derived from robots, surveillance systems and RF (radio frequency)-based automation systems, which it manufactures and markets.

Being a small company means that Gridbots does not have a huge and elaborate marketing set-up but on the flip side, its focused marketing and prompt services enable it to convert all business-leads into sales to customers.

Innovation for change

About innovation, Gaur says, "Innovation, according to us, is all about bringing about a change in the existing system or in the current way of thinking. An organisation needs to have people who can think out-of-the-box to build an innovative organisation. If a firm continues to work in the established fashion without bringing any change in its philosophy or products, it probably will be out of the market sooner or later."

This philosophy of innovation seems to be working. The company has come out with India's first consumer robot for basic household activities like cleaning, and has also come up with a very new and innovative type of picture search product. Called Picporta, it lets users organise pictures based on their subject, adding a totally new dimension to traditional picture organisers.

Gridbots' Product Portfolio

autoGRID: The first in a series of consumer robots and in the final stages of development. A multipurpose personal robot, autoGRID has the ability to do basic household activities like cleaning and vacuuming, provide security, offer a tele-presence, and has basic pick and place maneuverability. It features autonomous docking for battery charging; has automatic map generation of the vicinity in 2D/3D; and has the artificial intelligence for behavioural smartness, along with obstacle avoidance, path planning and job scheduler capabilities. The company expects this product to make its presence felt in the consumer market as well as in the hospitality industry, industrial environments and medical industry.

teleGRID: This product provides home automation functionality and helps in monitoring activities at home and office. Detecting hazards like gas-leakage, smoke, and temperature fluctuations, it can be useful in avoiding many accidents. It is also capable of taking independent decisions and can be effective in jewellery stores, shopping malls and housing societies.

GridSURV: An autonomous surveillance system, GridSURV is capable of face detection, face recognition, and motion tracking. It also offers video search capabilities and can be used as part of security solutions in central government and state police departments.

SauSR: This is a lightweight underwater robotic vehicle capable of cleaning, inspecting and repairing water/chemical and underground tanks, and swimming pools. It features an onboard camera, gyroscope, electronic compasses, obstruction sensors, floodlights and an actuator-driven circuitry to operate a robotic arm, among other things.

Abacus: This is a visual programming-based modular robotic research platform, and can be used for research by students and engineering institutions.

Pulkit Gaur, CEO, Gridbots

"Many of the products and technologies that we use in our products are state-of-the-art and have been in labs for all these years—we have tried to bring such technology to our consumers by encapsulating them with easy-to-use interfaces."

Tackling growing pains

Like any start-up, Gridbots also had its share of initial hiccups. Being a technology firm, it had to come up with something that was not just innovative but also commercially viable.

Gridsurv—an autonomous surveillance robot

Funds to fuel R&D and maintain an efficient staff were another area of concern. Gaur remembers: "It was quite difficult for me to manage resources. We did not have any revenue model and we were burning cash on research. We did not seek any VC (venture capitalist)/angel funding because that might have made us drift from our vision."

The firm has now tasted success, as it has begun to get projects from the likes of the Ministry of Home Affairs and is also working on a project for NID (National Institute of Design) to provide consultancy on behavioural intelligence and machine vision.

Looking to change lives

Today, the company is clear about its future roadmap. The short-term goal is to become a successful company with astounding technology behind its simple devices, whereas the long-term goal is to integrate technology in every home, office and industry across the globe, and to provide unified solutions for robotic devices, home automation and surveillance.

Gaur says that he has been inspired by entrepreneurs who have been instrumental in changing people's lives—people who believed in themselves and achieved their goals. He aims to do the same.

And he certainly is on the right track. IT