



Breathing Sensor Apparatus to Assist Physically Challenged

Susant Pattnaik

Bhubaneswar, Orissa

Susant is an innovator, serial entrepreneur, and motivational speaker. He has at least ten innovations that have made the critical transition from idea to working prototype; set up four companies; featured in MIT's Technology Review; been a guest speaker at IITs - and he's all of 20 years old.

Meet Susant Pattnaik: a boy who counts Dhirubhai Ambani as his role model and effortlessly rattles off his many of his quotations to explain his point-of-view. And like his role model, he combines the ability of have forward-looking ideas with the confidence and passion to make them come true. Sample some of his ideas:

Accident-proof Technology

This prevents 4-wheelers from falling off a mountain or going into a pit. This sensor-based technology gauges presence of a road in front. On encountering a pit or a cliff where there would be no road, the sensors get

activated to prevent the vehicle from moving forward (of course the speed of the vehicle would have to be below a critical level). He thought of this idea and developed it when he was in class 10.

Breathing sensor apparatus for paralyzed people

It is wheel chair fitted with a device by which a paralyzed person can do routine things like getting the wheel chair to move forwards, backwards, asking for food or water etc. It is navigated through commands given by changing breathing patterns. "A screen is present on which different tasks come on a regular rolling basis. A task can be selected by breathing on the screen with slight force," Susant clarifies. He thought of this idea as a class 11 student in 2009 and has developed a prototype of this wheelchair. Interestingly, he incorporated his accident-proof technology in this wheelchair to prevent it from falling down the stairs.

Anti-theft Mechanism for Cars

To be safe from the worry of a thief driving away in your car, just install this handy device. Each person gets a unique number on which they get a call any time their car starts. This alerts a person if the car is being started without their knowledge. And to stop the car, they can simply call back on that number. The car can move again only on resetting the system. Susant claims to have implemented it in 50 cars in Bhopal. He shares, "A similar system is available at Rs. 8000 to 20,000 while mine is priced at Rs. 3000 per system. It is low-cost because I have used a different technology."

Low Cost Voice-Operated Electrical and Electronics Appliance

It is a system to control electrical appliances through voice commands given over telephone. The kit has programmed circuits connected to home electrical appliances. For switching any device on or off, a call is made to a pre-specified number where it is received by the circuit. Speaking out specific commands will activate the appliance as instructed. "Suppose you say, 'Light on after five minutes', they will switch on accordingly.

And if you say 'Fan off after ten minutes', it will switch off exactly after ten minutes," explains Susant.

Super Sense Technology

His current innovation is a 'Super Sense Technology'. It is a circuit-based device attached to the wrist through which one can operate any computer by a slight head or hand movement. No keyboard or mouse is required. He is also working on an advanced model, which comes with a jacket with an in-built computer. Wearing the jacket and the wrist-band does away with the requirement of a computer. Using it, one can type, draw or even access the internet - just like with a regular computer.

Ideas from the Future Inspired from Films

Some of his ideas are so futuristic that they seem a part of a science-fiction film. Not surprisingly, he is a self-confessed film buff who watches "three to four films a week". And while most of the ideas came to him on his own, he shares that the Super Sense Technology was inspired from a scene in the Hindi movie 'Krishh'. It showed a super computer being used in air. Dismissing it as 'unscientific,'



he applied himself to understanding principles of science could be used to make it real.

Currently pursuing a 5-year integrated M.Sc. degree course in Physics from IISER (Indian Institute of Science Education and Research, Bhopal), he finds it unexciting because it's "too normal" (NIF received his ideas while he was a school student). He feels, "There is a huge focus on marks and exams. Students study, but don't learn. I have learned electronics, never studied."

Serial Entrepreneur

He founded the Scientific Innovation Foundation (SIF) in 2011. It is an organization that promotes, generates and documents innovative ideas across the world. He also started Spintrotech India (P) Ltd in 2012. It is a social venture company that develops and markets innovative products. To commercialize his innovations, he has collaborated with Armaan Foundation, Intel, Techpedia, IIT-Gandhinagar etc. He is also supported by NIF. 2012 also saw him setting up a merchandise company, Single Frame Fashions (P) Ltd (Uber Imprints), where people can design their own T-Shirts that will be delivered to them in four working days. An excellent motivational

speaker, he also makes himself available to visiting prestigious colleges and corporate houses who invite him as a speaker at their events.

Family Support

Son of a veterinary doctor residing in Bhubaneswar, he has a unique take on parents. He says, "Parents can be like obstacles but only because they want you to be safe." He continues, "My parents would have preferred had I taken the normal path of school, college, degree, job. But I want to follow my dreams and for that, I need to take risk. Of course, they are happy with my achievements."

Hopes for the Future

His next big idea is a body suit with wheels wearing which one can simply "glide on the road at a speed of 40-50 km per hour. It will be battery-operated and will do away with pollution because of vehicles." It's an ambitious dream, but he justifies it by quoting Dhirubhai Ambani: "If you don't build your *dreams*, someone will *hire* you to help build theirs."

