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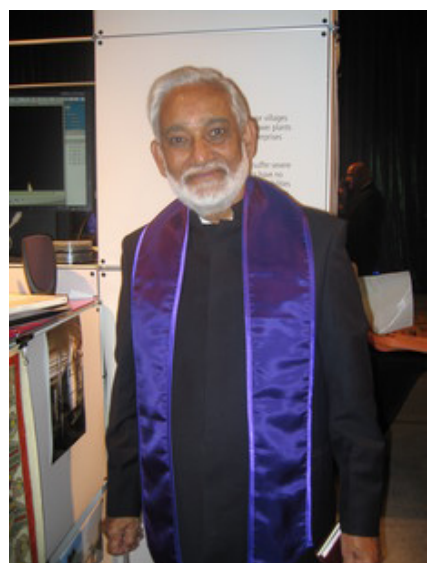The robots emerging from labs and garages around the world

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Last night San Jose's Tech Museum of Innovation presented its annual Tech Awards, honoring technology benefiting humanity. The 25 finalists, drawn from 650 nominations from 68 countries, had developed devices and programs to address issues in healthcare, the environment, and education, as well as more general needs of developing nations. Some innovations use relatively simple technology to turn local waste or weeds into building materials or fuel; some rely on advanced technology, like flexible solar cells made from nanomaterials or three-dimensional computer displays.

Before the three winners were announced, I had a chance to chat with some of the honorees—the Tech Museum calls them laureates—about their projects. Many involved power and energy in one form or another, either saving energy, like NComputing, a company that enables large groups of users to simultaneously use one computer, with dramatic power savings. Or generating energy from novel fuels, like VWP, a German company designing tractor engines optimized for running on pure plant oil, and the Cheetah Conservation Fund, which has developed a process for converting an invasive plant that had been destroying the cheetahs' savannah habitats into a clean-burning fuel log.

What struck me most, however, was the way that many of these entrepreneurs are redefining the problem of power generation and distribution in the developing world. Hari Sharan [photo, left], chair of D.E.S.I Power, based in Bangalore, India, told me, "The centralized system of power distribution has failed the villages." The problem, he explained, is that bringing power from a central generating facility out to small villages just doesn't make economic sense, because there are no customers in the village.

So D.E.S.I, while it does build power generating facilities, using biomass gasification, does not expect to survive by simply offering power for sale. Instead, it expects that around each generation station a host of small businesses will emerge, selling what power creates.

"Light," for example, says Sharan. "A local entrepreneur could collect portable lights from 50 households, bring them in for recharging, and then deliver them back."

D.E.S.I has five units running in villages so far, and is on track to have 100 built within the next three to four years.

Sunlabob, based in Laos, another Tech Awards Laureate, is also bringing power to the people. Like D.E.S.I., it relies on what, in the computer world, would be called a "Sneakernet," that is, power is moved by being walked from place to place, instead of sent over a wired network. Sunlabob's solar-powered charging stations charge individual battery-operated lamps; a local entrepreneur then rents these lamps to households, charging for the amount of hours of light used. Sunlabob CEO Andy Schroeter [photo, right] says at about 30 cents for 10 hours of light, the cost is much lower than kerosene, which is what many households in the developing world use for light today. Sunlabob has some 2500 stations installed in Laos, and is expanding in Cambodia, Tanzania, and Afghanistan.

In the Sierra Madre area of Mexico, light is also

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