

# Chase for India's rural rupee inspires tech innovations

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India's hunger for new technology is as sharp in its countless small villages as in its shiny office towers or shopping malls -- and businesses are waking up to an area of massive potential growth.

Specific designs being aimed at Indian villagers include a mobile phone cash-transfer system, robust low-energy refrigerators and a clever twist on the humble kitchen stove.

Household cook Shivnath Yadav, 35, told AFP that he regularly sends funds via his mobile phone to his mother in the tiny village of Gajolpaharpur in Bihar, one of the country's poorest states.

"It's so easy to do this, and knowing that it will reach my mother soon relieves me of any tension," he said at the Jai Janta convenience store in south Delhi where he completes the transaction.

Two brothers, Abhishek and Abhinav Sinha, used a World Bank grant in 2009 to set up Eko Financial Services, which provides [mobile banking](#) services by using such small shops as de facto banking outlets.

When a customer wants to send funds to a relative, they deposit cash with a shopkeeper who dials a code to get the transaction cleared by Eko. Eko then alerts the bank to transfer the money to a shop in the relative's village, where he or she can pick up the cash.

Store owner Jitender Kumar, 33, said he dealt with more than 100 cash-

transfer customers a day who send money to villages scattered across east [India](#).

[Business](#) has been encouraging enough to lead him to shut down his phone repair business and focus attention entirely on mobile banking.

"We wanted to make the service really simple, as easy as putting money under your mattress but much more secure," said Anupam Varghese, vice president of research and development at Eko.

At present Eko has 800 outlets in three states, but Varghese said the company plans to expand to cover all of India -- a country where more than 70 percent of its 1.18 billion people live in villages, according to [census data](#).

Also heralding a technological revolution in rural communities is an ATM that uses batteries and solar power to overcome frequent power shortages.

Many banks have been reluctant to extend their ATM networks into villages, fearing that the profit margins would be too low and the security risks too high.

But engineer L. Kannan recently unveiled the first fully-functioning "Gramateller" ATM after several years in development.

"Villagers are not affluent but they do have money. What they don't have is a way to save money since setting up branches or traditional ATMs in villages is not profitable for banks," he told AFP.

"My machine functions on 100 watts of power -- 10 percent of a conventional machine's consumption -- and has back-up batteries and solar panels."

The Gramateller is also able to issue used notes rather than only freshly-printed ones, making it easier for banks to re-supply.

Kannan signed a contract this year with India's largest bank, the State Bank of India (SBI), to supply it with 600 machines and about 300 of them are already up and running around the country.

The rush to meet rural demand for new technology is not limited to the financial sector or small start-ups, with giants like the Tata Group also entering the fray.

Already famous for producing the world's cheapest car, the Nano, last year Tata released a water purifier which requires neither electricity nor running water to operate.

Priced at 999 rupees (22 dollars), the Swach purifier uses rice husk ash impregnated with nano-silver particles to filter water and is designed to last a family of five for 200 days.

Looking to tap into another lucrative young market, fellow conglomerate the Godrej Group is now working on a refrigerator aimed at the vast majority of Indians who don't own one.

"We saw that the penetration of refrigerators in India is only 18 per cent and we wondered, don't the rest of them need one?" G. Sunderraman, vice president of corporate development at Godrej, told AFP.

Sunderraman consulted with villagers during extensive field research and came up with the "Chotukool" (Small Cooler) -- a bright red cube with top-quality insulation that can run on electricity or on a battery.

It uses thermoelectric cooling instead of a compressor to withstand the physical pressures of a rural environment, and will be on sale within

months.

At 3,750 rupees, it is still expensive in a country where hundreds of millions of people live on less than two dollars a day.

But entrepreneur Mahesh Yagnaraman, CEO of First Energy, cautions against the idea that cheap products are always a better bet in the chase for the rural rupee.

"The product needs to be aspirational. People want a product that compares well to those sold in cities," said Yagnaraman, who markets the Oorja smokeless stove to village women.

The stove uses biomass pellets instead of wood or gas to cut down on indoor smoke pollution and -- equally importantly -- on the huge amount of time spent sourcing firewood.

All the business people who spoke to AFP admitted that they were yet to turn a profit, but it has not dampened their optimism.

"It is challenging to reach out to villages, but as an Indian company we have to target this market, if we don't, who will?" said Sunderraman.

"In the long run, there will be growth."

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