

## Low-cost cash box

With ATMs that are one-fourth the cost of regular ones, Vortex Engineering is looking to crack the rural market

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There is a child-like wonder in 65-year-old P Erusammal's face as she walks into the ATM with her swipe card in Periyakankanakuppam village of Cuddalore district, about 190 km from Chennai. As an NREGS (National Rural Employment Guarantee Scheme) worker, she clears mud and silt from a river canal, and has come to collect her wages (Rs 80 per day). Previously, she used to collect it from the village *panchayat*. Now, she presses her thumb on the biometric slot on the ATM machine—"cash box", she calls it—and simply collects her money. In Periyakankanakuppam, NREGS wages are released on a weekly basis, and on the big day, about 40-50 villagers throng this ATM.

Until now, ATMs belonged to cities. For banks, it was unviable to set them up in remote rural areas, even as there was a growing need with the advent of micro and rural credits. In 2004, a few of them, led by ICICI Bank, approached the Telecommunications and Computer Networks group (TeNeT) at IIT Madras for technology solutions that could speed their rural forays.

**Money for something: P Erusammal, 65, collects her NREGS wages**

TeNeT has a history of incubating technology start-ups focussed on the development of telecom and banking products for villages. Professor Ashok Jhunjunwala, Head of TeNeT, fell back on his fellow IITian L Kannan, Founder of Vortex Engineering, a Chennai-based technology solutions company. Together, they came up with the idea of what is today known as Gramateller—a

low-cost ATM, the cheapest of its kind in the country. Vortex installed its first low-cost ATM in 2008, in Chennai.

## Poor man's ATM

The Gramateller costs Rs 1.75 lakh. That's at least one-fourth the cost of a conventional ATM (Rs 8-10 lakh). According to Kannan, three factors, roughly in equal measure, helped Vortex drop the ATM bar. One, a novel cash dispenser module, which brought in savings on the power usage and design fronts. Two, the way the machine shell is made. Three, the company uses an embedded process system, which runs on Linux instead of Windows XP, and again brings down the operational cost.

The cash dispenser module, which it has patented, is the revelation. In a conventional ATM, the cassette, where the money is stored, is kept horizontally; in a Gramateller, it is kept vertically. Says Vijay Babu, Chief Executive Officer, Vortex: "The note travels 15-20 cm as compared to a metre-plus area in other ATMs. This reduces the power cost by one-tenth and the design cost by one-fourth. Its vertical placement means it is assisted by gravity too."

The Gramateller is also more energy efficient than its conventional peers. The conventional ATM consumes about 3,000 MW of power per day, and needs air-conditioning and a back-up generator. Plus, electricity charges run up to Rs 10,000-15,000 per month. From the banks' point of view, setting up such an ATM can be viable only if at least 250 transactions are done every day—almost impossible in villages.

Gramateller, by comparison, consumes just 100 MW of power a day. Since it emits less heat due to lower power consumption, air-conditioning is not needed. The ATM comes with a battery back-up, which can run for about four hours. Electricity charges come to Rs 500-750 a month. Vortex is also the first company in the country to make solar ATMs. "Three ATMs are running on solar power," says Kannan. Since the power required for Gramateller is only 100 watts, solar is a viable option, and it also reduces operating costs to virtually nil.

There are more ways in which Gramateller is tailored for rural areas. Apart from

having all the features of a regular ATM, Gramateller has an added advantage: it allows biometric access. The option rests with the banks. In keeping with the relatively low disposable income of its customers, the machines stock Rs 50 notes. The machine's total capacity is Rs 1 lakh, which is a small liability for a bank, and hence does away with the need to have a 24-hour security guard. Savings again.

## Awaiting good times

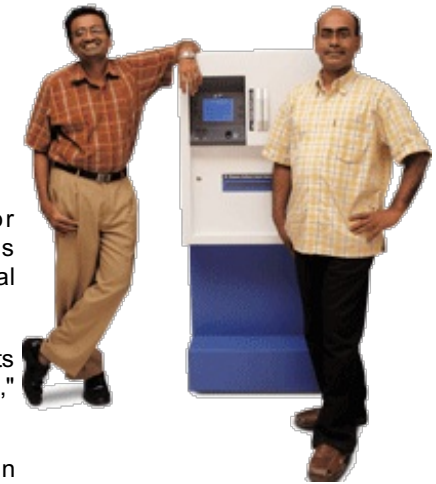
These are still early days for Vortex. So far, it has installed 15 Gramatellers in Tamil Nadu and Andhra Pradesh, for leading public sector and private banks. "We expect to sell 50 ATMs this year, 500 next year," says Kannan. He, however, refuses to disclose the names of his clients, only saying that 10 banks have shown interest, including big public sector and private banks. It also has orders from regional rural banks and cooperative banks in states up north like Himachal Pradesh, Haryana and Rajasthan.

Vortex expects to bring down the price of a Gramateller to Rs 1 lakh once production is scaled up. The company is cagey about its financials. But at Rs 1.75 lakh per ATM, 50 ATMs translates into revenues of Rs 87.5 lakh. "We should break even in two to three years," says Kannan.

Vortex got two rounds of funding (starting 2001) from Venture East—a Chennai-based venture capital (VC) fund, with about \$150 million in assets under management and which exclusively finances TeNeT projects. Venture East invested about Rs 30 lakh in Vortex. Then, in 2004, Aavishkaar, a Mumbai-based microfinance company, with a total corpus of about \$14.5 million, invested \$2 million in Vortex. "It was a product of the time," says Vineet Rai, Chief Executive Officer, Aavishkaar. "Microfinance and rural finance was picking up in the country. We did take a risk, but we knew this ATM will work well." In time, Rai expects demand to pick up not just from India, but also from countries in South Asia and South East Asia.

Interestingly, Vortex, which has 65 employees, has not invested in a manufacturing facility. It has partnerships with manufacturers. Says Kannan: "We give them the ATM design and specifications, and pay them on a per piece basis or by the number of hours taken to work on the product." Vortex coordinates with suppliers and monitors quality. It customises the ATM according to the needs of the banks. "A private bank will be willing to spend more money for a colour display and a smart card, whereas a regional rural bank will ask for just a swipe card," explains Kannan. Colour displays or not, more and more people in rural areas are swiping cards or sticking their thumb on the ATM machine, bringing in business for Vortex.

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**Pricing power: Vijay Babu (left) and L Kannan of Vortex with one of their ATMs. They expect to sell 50 ATMs this year, 500 next year**