

Hands On: India's \$35 Aakash Android tablet lands in America (exclusive)

The Indian government thinks the \$35 Aakash Android tablet has the power to change the world. After testing one out, we'd tend to agree.

An Aakash tablet was brought to the VentureBeat office on Tuesday by [Vivek Wadhwa](#), a visiting professor at the University of California at Berkeley and Duke. Wadhwa, who is researching the Indian education system, and is a columnist with the Washington Post, was given the tablet by Kapil Sibal, the Indian minister of human resources and development, who has been the driving force behind the tablet project. The device (whose name means "Sky" in Hindi) was produced entirely in India — a point of pride for the Indian government.

The 7-inch Android-based device will be distributed at a government subsidized price of \$35, making it the world's cheapest Android device. The general retail price will be \$60, which is still remarkably cheap for such a powerful device. A contract between the Indian government and Canadian development partner [DataWind](#), should put between 10 and 12 million devices in the hands of students across India by the end of 2012, according to [Computer World](#).

Aakash stats at-a-glance

Screen: 7-inches; 800-by-400 pixels; Resistive touchscreen

Operating system: Android 2.2, Froyo

Processor: 366 MHz Connexant; HD Video co-processor (both with graphics accelerators)

Memory: 256MB RAM (internal); 2GB Flash (external)

Storage: 2GB card included, expandable up to 32GB

Ports: Two USB 2.0; 3.5mm audio out jack; 3.5mm audio in jack (No built-in speakers)

Connectivity: GPRS; Wi-Fi 802.11 a,b,g

Power: Up to 180 minutes on battery; AC adapter, 200-240 volt

Weight: 350 grams

We tested the Aakash, surfing the web, using apps, typing text documents, plugging in peripherals and playing Bollywood videos. Here's our exclusive first look at what a \$35 tablet can really do. (See a video of the Aakash in action at the end of the article.)

Hands on with the Aakash

Jugaad is an Indian word which means "to make-do." The Aakash tablet is a Jugaad in a very high tech way. The components inside the Aakash tablet are cheap, and easily sourced. For example, the Aakash tablet has a headphone jack and an audio-in jack, but no external speakers — an obvious cost-savings

measure. However, with the addition of cheap headphones, and an equally cheap microphone, the owner can make calls on Skype and has the potential to communicate with people around the world.

The screen is pressure sensitive (also called resistive touch) and responds somewhat slowly to gestures. It's definitely not as dazzling as the high-end tablets familiar to Western audiences, such as the capacitive touchscreen iPad, or even the [HP Touchpad](#).

The Aakash is running Android 2.2, Froyo, with the UniSurfer browser installed. Made by DataWind, UniSurfer is supposed to make webpages process faster, probably to compensate for the slower processor and connection speeds. However, while browsing the Internet and testing out apps, we couldn't help but notice that the reaction time seemed very slow. Scrolling, for example, is a swipe-and-wait affair. However, the speed is going to be quite sufficient for someone who has never in his or her life had a smartphone or computer. It's all relative after all. Compared with the iPhone 4s, the iPhone 3G is a "slow" smartphone, only because speedier alternatives are available. Even in a context where the market is full of smart devices, like in the U.S., speed helps us make decisions incrementally faster, but rarely are these issues of genuine consequence.

And given how slow navigating the user interface is, watching videos on the device was incredibly impressive. We used YouTube to watch a clip from a Bollywood film, and the video came through fast and clear, with no hiccups.

The Aakash has both GPRS and Wi-Fi capabilities. Its battery power is limited to 180 minutes of use on a full charge, but it comes with an AC adapter. What's important isn't that the tablet can run off of the battery for long periods of time, but that it will still be able to work and surf the net when the power goes out.

Weighing in at less than double a handheld smartphone (350 grams), the device itself feels a bit like a toy. A goofy plastic cover protects the screen, slowing down the touch response considerably. It might remind you of the conference call controller in a corporate boardroom. Though its design is minimalistic, absent are any Apple-like design flourishes that might evoke the word "magic."

Unlike the [XO](#), the low-cost laptop produced by [One Laptop Per Child](#) for the world's poorest children, with help from [Frog Design](#), the Aakash tablet is not going to win any beauty pageants. This is certainly one of its strengths. A big problem with the XO is it was seen as relatively arcane technologically by the time it was actually available.

What makes the Aakash tablet different is that its creators didn't strive for perfection. Instead, the emphasis was on getting the product into the market quickly so it could be adopted, tinkered with, and improved over time. As Wadhwa said, "to get the cost down, you have to make some compromises."

The unmistakable impression we all got from using the Aakash tablet was that it is built for performance. Every design choice that might seem like a negative reveals three, four, five — or more — net benefits.

Why does it have two USB ports? So you can plug in a keyboard, of course, and still have a free slot for an external hard drive, or some other device. What about that screen cover that seems like it's made from laminating material? If the tablet is meant for educational use, it's probably going to have to contend with some pretty rough handling, dirt, dust and moisture. Better that it should withstand damage than look the extra bit nicer.

Seeing the tablet's potential

The Aakash Tablet is an example of a "leapfrog technology," a concept where the latest innovations jump

directly into areas where legacy technologies never penetrated. Tens of millions of people throughout India who never had access to a landline phone now walk around with cell phones in their pocket. Many of those likely to use or own the the Aakash Tablet will never have used a desktop computer, and it's possible they never will.

Now imagine the educational potential of the world's lowest-cost tablet being unleashed to hundreds of millions of Indians eager to join the world economy. At the heart of the Aakash tablet is an HD video co-processor that will connect viewers to one of the largest educational libraries ever assembled: YouTube. When the Aakash tablet reaches villages across India, an entire generation will have instant access to rich educational content such as the [Khan Academy](#), and anything else their hearts desire.

And with the Aakash tablet in hand, students across India will be free to do what their global counterparts do — or should do — with their computers. There are the educational basics such as creating documents and spreadsheets, and browsing the web for research materials. But as with anything, young people will probably spend a fair amount of time playing games online and chatting with their friends.

India's history with affordable tech

India, which has a population of nearly 1.2 billion and is home to 40 percent of the world's poor, has experience paring down high-end technology and making it affordable and accessible.

A similarly transformative Indian-created product is the Tata Nano car, a revolution in automobile design built to give mobility to millions of low-to-mid-income Indians. When it came out in 2009, the Tata Nano was heralded as the world's cheapest car. But while the Tata Nano is ultimately a destructive force — adding drivers to the congested roads and vehicle exhaust into the air — the Aakash tablet will be used to educate hundreds of millions of children.

The [Hole in the Wall](#) initiative is another example. It put a computer kiosk in several rural villages throughout India, giving thousands of children and adults their first access to a computer and the Internet. The organizers compared it to the village well, where the community could come together to exchange knowledge and learn from each other. In this case, however, the well was connected to the world's deepest reservoir of knowledge, the Internet.

And next month, the first Aakash tablets will go on sale throughout India, and millions of children will be able to join the tablet revolution that is transforming education, communication and entertainment across the world.

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