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Knocking Down the Barriers to the $100 Laptop

By Eric Lundquist
August 21, 2006

The biggest technology roadblock to building the $100 laptop championed by Nicholas Negroponte, founder and chairman of the One Laptop per Child organization, is close to resolution.

That roadblock has been developing a display that is rugged, inexpensive and readable in a wide variety of conditions from low light to bright sunlight. Displays are a traditional barrier to building laptops for use in a variety of conditions. In the past, they tended to use a lot of power and were difficult to read in lowlight and nearly impossible to read in direct sunlight. If you want a really heart-stopping financial moment, call your laptop vendor to find out what it would cost to replace a broken display. You'll most likely find that the display replacement costs more than a new laptop.

⊙ **The $100 laptops should teach vendors a lesson. Click here to read Jim Rapoza's column.**

Now, the chief technology officer of the One Laptop Per Child program claims to have come up with a display that can be readily mass-produced in standard LCD factories, has a higher resolution than 95 percent of the laptop displays on the market today, runs with about one-seventh of traditional power consumption, costs one-third of the price and can be read in sunlight or room light without backlighting.

In the world of displays, such performance and capabilities would be as big a change as when computer makers figured out you could build computers with flat screens, ushering in the laptop era. Laptop vendors desperately trying to figure out how to run cooler systems to avoid battery requirements that push (and sometimes exceed) engineering thermal capabilities would embrace a display technology that doesn't create a poor trade-off between power consumption and readability.

How did the **One Laptop Per Child** accomplish a revolution in display technology? The first step was to hire one of the best laptop technologists. Mary Lou Jepsen is the founding CTO of the OLPC organization. Previously she co-founded in 1995 the first company with a singular mission to develop microdisplays. She was also CTO of Intel's Display Division. Her résumé reads like a history of display development. And this September she is due to become a professor at the MIT Media Lab, where she will lead an effort in nomadic displays.
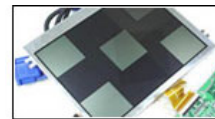
View slide show: One laptop per child

So much for her bona fides. I caught up with Jepsen as she was finishing up some work on the OLPC display in Taiwan, just as she was about to head back to the United States for a keynote presentation and also to find time to get married. The following e-mail question-and-answer session and accompanying slide show are the first detailed descriptions of the display that will form the basis of the OLPC project.

Next Page: Click here to read the interview with Mary Lou Jepsen.

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