UPDATE

Concerns About the $100 Laptop

By LAURINDA KEYS LONG

The $100 laptop idea started with Nicholas Negroponte, cofounder and chairman emeritus of the Massachusetts Institute of Technology Media Lab. He set up One Laptop per Child (www.laptop.org), a nonprofit organization, to manage the project. But the first of these laptops will probably cost $150. When larger volume is possible later, the price would likely fall.

In addition to the project initially falling short of its price target, there are other concerns:

- about whether the machine will be feasible over the long term in environments where there is no stable power source or broadband Internet connection;
- whether children and teachers who have never seen a computer will be able to use them in a productive, educational way;
- whether children, who are treated as second and third-class citizens in many societies, will be allowed by their communities to own and experiment with a device that adults can't have; and
- whether this is really what the world's poorest children need most.

The developers plan for governments to buy the devices and give them to children. Is this a good choice for countries with scarce resources? Is it a good way for donor countries to spend aid money?

India, considered by the laptop's developers a natural pilot country, has opted out, as the Government feels $100 per child could be more usefully spent in other ways. "We cannot visualize a situation for decades when we can go beyond the pilot stage," Education Secretary Sudeep Banerjee has been quoted as saying. "We need classrooms and teachers more urgently than fancy tools."

Another thing children need is enough nourishing food, especially if they are expected to hand-crank their laptops during frequent power outages. "Small children are capable of generating between five and 10 watts for short periods of time," says Ethan Zuckerman in his extensive review of the One Laptop Per Child project (http://www.worldchanging.com/archives/004543.html). "Since conventional laptops draw about six to eight watts with their screens turned on, that's a real problem for a child-powered laptop." Several observers have suggested recharging the laptop battery by foot pedal, because leg muscles have more power than arms. But even so, a major factor in children not being able to concentrate and take in information at school is poor nutrition. Burning up calories at home cranking the laptop could make the kids too energy deficient to benefit from the information they may find through it.

Questions have been raised about whether there is enough evidence that children really do create computer programs or seek out educational material and interact with it spontaneously. Also, there are concerns about whether developing nations can set up robust and reliable networks in rural areas so children can connect to each other and the world. "Mesh networking depends upon most of the links being operational whenever connectivity is needed. Are we to assume that all of the OLPC laptops will be left running, especially when the effort of battery charging is considerable?" asks Lee Felsenstein of the Fonly Institute in California, in his exhaustive "Problems with the $100 laptop." (http:// fonly.typepad.com/fonlyblog/2005/11/problems_with_t.html)

Negroponte and his colleagues have said that some of those questions are not theirs to answer. They have set themselves a high challenge and have made some remarkable strides toward achieving it: designing an educational tool that is high-tech, attractive, meant for children to use, without power, in tough environments ranging from desert sand to jungle mildew. Negroponte says the immediate future for the project is "testing, testing, testing."

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