'One Laptop per Child' project continues

December 8 2005

At a time when $100 might not buy the latest techno-gadget you've been lusting over, MIT's Media Lab thinks it can do something better: provide a laptop computer for a child in a developing country.

The "One Laptop Per Child" project, the brainchild of Nicholas Negroponte, chairman of the MIT Media Lab, with support from computer-industry heavyweights such as Michael Dell, Steve Jobs and Bill Gates, is an effort to deliver several million laptop computers to developing regions that would otherwise be unable to provide them for students.

These units, which will be targeted toward Arabic, Asian, sub-Saharan

and South American markets, will be purchased for $100 each by government agencies and will be distributed through educational ministries. Preliminary schedules have slated shipping to begin by late 2006 and early 2007. Manufacturing will begin when 5 million to 10 million machines have been ordered and paid for in advance, and only governments that commit to buying at least 1 million machines will be eligible for the program.

The laptops, or "green machines," as the prototypes have been dubbed due to their distinctive lime color, incorporate current technologies with several new ideas. With the core idea of ensuring the units survive in regions with limited technological infrastructures, the hardware allows multiple units to share a single Internet or network connection via "mesh networking."

Designed for regions with minimal or irregular electrical access, a crank handle compliments the laptop's built-in power supply. Operating at a 6:1 ratio, the crank can be turned for 10 minutes to deliver an hour's worth of additional battery life to the unit.

Other technologies such as a 500 MHz AMD processor, 1 gigabyte of RAM, four USB ports, 802.11 wireless networking support and Flash-based memory in lieu of a more fragile hard drive round out the laptop's hardware, while a Linux operating system controls software functions.

Built-in security features can be configured to help prevent the units from being stolen. A unit that has been removed from its batch and is unable to form a network connection with other laptops may disable itself, thus becoming worthless on the black market.

Both accolades and concerns have been expressed for the project and the logistics involved therein.

"Up front, a lot of us in the industry applaud the idea," said Tim Bajarin, an analyst for Creative Strategies. "The other part is where the business model is. At $100, you're not making much.

"One model you can use is the one AMD created for $299 late last year that was distributed throughout India and has done extremely well. But $299 in certain markets is an incredible amount of money. In some cases it represented the complete earnings of a year," said Bajarin. "What happened was that the parents and grandparents pooled their money together and worked extra hours just to get the kids these computers."

Cost concerns are currently being addressed, and the "One Laptop per Child" effort has formed a U.S. non-profit group, allowing spending towards the effort to qualify as a charitable deduction.

Other potential contingencies include how these machines will be supported, what training will be provided, their overall durability and the large scale of the project.

"One dimension is hardware. I think it depends on the age that you target this. If you give it to younger kids, there are issues about looking after it. Older kids should take better care of it," said Professor Rahul Tongia, a systems scientist for Carnegie Mellon University's School of Computer Science and Department of Engineering and Public Policy. "Calculators can last 10 to 20 years; they're robust devices. But these are not used hours a day in developing countries and took several iterations to reach such robustness."

Tongia then commented that support for the devices would be dependent on localized industries that emerged to fill the need.

"Anything where there's value, people will innovate off of it," said Tongia. "The question is how open these are and where the money came

from. Will these be bought by parents or bought by officials, governments, agencies and donors. That changes things.

"If it does what it states, I wouldn't mind one myself," said Tongia. "But again, what need is this solving, and for whom and where?"

The project, if even moderately successful, could provide technologies to regions that would otherwise be unable to afford them and perhaps make a dent in the digital divide between leading and developing nations.

Representatives from MIT's Media Lab were not available for comment.