

The \$100 laptop

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U.S. and international educators show great interest in prototype

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A brightly colored \$100 laptop prototype – a no-frills device not much bigger than a hardback novel but equipped with Internet capability – drew the rapt attention of thousands of educators yesterday at the San Diego Convention Center.

Nicholas Negroponte, a renowned futurist who is pushing a “one laptop per child” initiative in developing nations, showed off the much-publicized innovation yesterday at the National Educational Computing Conference.

The conference, organized by the International Society for Technology in Education, drew participants from throughout San Diego County and Mexico and their peers from as far away as China and Denmark.



LAURA EMBRY / Union-Tribune

Barbara Baker of Hawaii's Department of Education (left) and Stefan Mueller of Apple Computer photographed a prototype \$100 laptop at an educational conference in San Diego yesterday. Stephen Michaud (right) of One Laptop Per Child explained the computer.

The \$100 laptop, Negroponte's brainchild, is expected to revolutionize education in the poorest parts of the world, and may dramatically reshape education in the United States.

The device is touted as a versatile tool for furthering knowledge and communication. Backers see it as a way to change the traditional classroom

dynamics to students learning from one another and sources other than their teacher.

Negroponte, co-founder of the Media Lab at the Massachusetts Institute of Technology, talked of children doing “peer-to-peer teaching” in impoverished rural areas where instructors may have little education beyond elementary school.

Technology giants have taken note of his project and are racing to create their version of the low-cost laptops – a trend applauded by educators at the conference.

“A lot of these companies can use the competition. They’ve dominated the market for too long,” said New York educator Jean DeGioia.

Negroponte says that for too long, technology companies have overloaded their computers with software and features to keep prices up.

His criticism appeared to have had an effect.

Intel recently unveiled a \$400 laptop geared toward students. Fourier has on display at the Convention Center “electronic learning slates” that sell from \$399 to \$599. In contrast, the San Diego Unified School District has paid more than \$1,000 per laptop.

“The whole market, it’s called the race to the bottom. The technology is getting faster and cheaper,” said Dan Wolfson, San Diego Unified’s educational technology manager, who has been closely following the development of the \$100 laptop.

He would like to test some prototypes in San Diego schools within a year.

Negroponte’s nonprofit association, One Laptop Per Child, plans to roll out 5 million to 10 million of the \$100 computers in 2007 and up to 150 million in 2008. It’s cobbling together funding through contracts with foreign governments, corporate sponsorships and other means.

Eventually, the association, in partnership with technology companies such as Google, Nortel and Advanced Micro Devices, hopes to bring down the price of the laptops to \$50 each by 2010.

Estimates put initial costs of the computers at \$138 each. Negroponte hopes to hit the \$100 price target by the end of 2008. He envisions a future where laptops would be ubiquitous.

“You can get into a realm where you can treat it like inoculation, where it’s part of the life of every child,” he said.

The computers will not be available for sale at retail outlets. Instead, they will be distributed directly through governmental initiatives. The first target

The basics

The nonprofit One Laptop Per Child association based in Massachusetts has plans to mass-produce \$100 portable computers and distribute them widely in Third World countries starting in 2007.

Local school districts anticipate that low-cost laptops, which for-profit companies are also racing to develop in the United States, will dramatically reshape education.

Specifications for the prototype \$100 laptop include: a 500-megahertz processor, four USB ports, 500 megabytes of flash memory (about the amount in the smallest iPod Shuffle) instead of a hard drive, and capability to link to other computers and the Internet.

For more information about the laptop, visit www.laptop.org.

group includes Brazil, Nigeria, Thailand and Argentina. Next will be China, India, Egypt and Mexico.

Educators said the \$100 laptops also should be made widely available in the United States because many poor families still can't afford to have laptops or desktops with Internet access.

Massachusetts Governor Mitt Romney, a possible 2008 presidential contender, has said he wants his state to buy the \$100 machines for every middle and high school student.

Many districts throughout the nation are looking for low-cost computers for their students so that eventually each student can have one.

“I think the door is open for people to step forward and say, 'Let's make this happen in the United States,'” said Katherine Hayden, assistant professor of educational technology at California State University San Marcos.

Negroponte's prototype – stripped of features and “bloated software” that typically slow down laptops – comes with a 500-megahertz processor, four USB ports, and 500 megabytes of flash memory (about the amount in the smallest iPod Shuffle) instead of a hard drive.

It operates on less than 2 watts of power – which can be generated with a hand crank – whereas most laptops average 25 to 40 watts, depending on the brightness of the display screen.

The laptop runs on open-source Linux software, which is free and can be modified by users to suit their needs. The device could tap into Wi-Fi wireless networks for Internet access, and would use so-called mesh networks to link to one another and share a single Internet connection. Each laptop would act as a router relaying information to and from other computers.

For durability, the laptop would be enclosed in rubber to withstand spills and drops.

Illinois educator Rich Kick was sold on the technology.

“I always believe that it's knowledge that will help solve problems. It's through ignorance we've created so many problems,” he said. “This is a great tool for disseminating facts, information and help us to eliminate so much ignorance we have in the world.”

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