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Meet Sugar...

...The face of the \$100 laptop and a quantum leap in design



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The \$100 laptop that's being created for school children in developing nations is known for its bright green-and-white plastic shell and its novel hand crank for generating power. What has not received much attention is the graphical user interface, called Sugar. It's the machine's face to the children who will own it—and it is revolutionary.

Sugar represents the first complete rethinking of the PC user interface in more than 30 years. Ever since the Apple ([AAPL](#)) Macintosh was launched in 1984, PCs have been designed with the office desktop as the visual metaphor. Sugar tosses out all of that. Instead, it puts an icon representing the individual at the center of the screen, then "zooms" out like a telephoto lens first to show the user in relation to friends and then to all of the people in the village who are connected via a Wi-Fi network. "We're actually building something that's right for the audience," says Chris Blizzard, the project leader for Sugar at the nonprofit One Laptop per Child (OLPC) in Cambridge, Mass. "We don't just take what's already there and say it's good enough."

Nearly a dozen countries, including Brazil and Thailand, have committed to using the PC, now officially called XO. About 2,500 test models currently are being shipped so teachers and children can try them out. (Some outsiders fault the OLPC group for not getting their formal input earlier.) The final version is supposed to be ready by August.

Sugar has a look and feel all its own. When you start up the machine, you see the image of the so-called XO Man, an O on top of an X, in the middle of a circle. Around the edges of the display, there's a dark frame where icons are placed that represent the activities that can be performed using the PC and its three different modes: home, friends, and neighborhood. The activities include e-mail, a simple word processor, a photography program (XO has a built-in camera), a Web browser, instant messaging, and an electronic book reader.

When children are operating in home mode they see the XO Man, and when they click on an icon on the frame to launch an activity, the activity takes up the whole screen. In the friends mode, they see XO Man icons representing their friends, each identified by nickname. Next to the friends are icons depicting the activities in which they're engaged. If several friends are working on an activity together on their laptops, such as a school report, they are pictured clustered around the icon for that activity. Kids can ask to be invited into a group activity or can start one of their own. The neighborhood mode is a broader view of all of the individuals and clusters of friends on the network.

Sugar is designed to encourage students to explore how it works and to make improvements. If one of the students is playing a game, he or she can actually look at the software code for the game and modify it—perhaps changing the colors on the screen.

The software offers a simple technique for moving things from one application to another. A student can pluck a photo off a Web site and drag it to the left side of the frame. Then, after she launches another activity, such as the word processor, she can click on the icon for the photo and drag it onto the activity screen.

Sugar is open source, built on top of Red Hat Linux. Any programmer can look at the core software code on the OLPC Web site (www.laptop.org) and suggest how to make it better. While Sugar's impact will first be felt in rural villages in Asia and Africa, the new interface may spark new thinking about designing for the networked world.

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By Steve Hamm

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