What on Earth is... Classmate PC

Why would children in countries that barely have the infrastructure to feed and clothe their populations benefit from a low-cost, open source laptop? **Mike Saunders** explains the whole "give a man a fish..." situation.

Classmate? Does it sit next to you, making silly noises and getting you into trouble during lessons?
Well, it shouldn't do – unless you're browsing some strange websites of course. This is Intel's effort to bring computing to developing countries, focusing on education. The Classmate PC is a small (245x190x44mm) laptop reference design, that has been designed to encourage widespread mass-production of machines based on the same specification.

Whoa, one second: don't developing countries really need clean water and good healthcare? Why throw gizmos at them?
You might think that you have a point, but there are countless government initiatives and charities already working on the water and health problems. It's also important to make sure the young are educated – after all, they're the building blocks of any country's future. In today's global world, a skilled workforce is essential for a country's economy, so it's vital to give kids a good start. If you can give them the internet, effectively the largest library in the world, then there's no limit to what they can learn.

I didn't have the internet at school, and I did alright! Wouldn't it be cheaper and easier to send more textbooks?
Yes, but that doesn't get a country out of the doldrums. Even the poorest countries in the world can get hold of basic educational tools. But while the developed world is interconnected and sharing knowledge, these developing countries are left behind – they have no way to catch up. To build their economies and improve standards of living, they need to be on the same educational playing field as more prosperous countries.

OK, but even with the best will in the world, a bunch of kids browsing Wikipedia isn't going to turn somewhere like Mali into Switzerland overnight, you know.
No, but it's orders of magnitude better than a stack of dusty, bland textbooks that may be out-of-date. With access to the internet, third-world children can broaden their learning, understand new technologies and develop skills important for the 21st century 'global village'. (Yes, that's a tacky term, but it's hard for countries to be completely self-sustained today.)

Take language, for example. Whether we like it or not, English is the *lingua franca* of the world today, and any country with an English-speaking population is going to fare better on the world stage. There's only so much you can do with textbooks – but if youngsters have access to the internet, they can read websites, listen to English radio, watch news footage and expand their language skills enormously.

> **"If your country wants to compete in a global marketplace, you need a young workforce with computing experience."**

Or take outsourcing. Currently, India is one of the hottest places for programming; many companies employ blocks of programmers there to work on projects. If you're in charge of Burkina Faso's economy and want to compete, you need a young workforce with computing experience. The Classmate provides this opportunity.

Then why a laptop? Surely some random white-box PCs will be cheaper?
Not necessarily – look at the ASUS Eee PC as reviewed in the last issue of **LXF.** It's a reasonably specced micro laptop, more than adequate for most common tasks, that checks in at 200 quid. Flash memory is cheap, RAM is cheap, and small LCD displays are inexpensive when bought in the kind of quantities that manufacturers require. Also, remember that hulking great PCs require constant, powerful electricity supplies, whereas small laptops can operate intermittently on very little juice. That's hugely important in poor countries with unreliable infrastructures.

Laptops have another benefit, of course: portability. If you're giving these machines to kids, they need to carry them around between classes, take them home, and not be tied to a specific location. In effect, the laptops replace a stack of textbooks – and they can be updated via the net.

So, how does the Classmate spec up?
Given that it's designed as a learning tool rather than a MegaBlaster 3000 gaming rig, the specs aren't all that impressive. But they're fine for basic typing, learning and net browsing work: a 900MHz Intel Celeron CPU, 256MB RAM and 2GB flash (as the hard drive). The 7" 840x480 LCD display is powered by an Intel 915GM chip, and connectivity is provided by 801.1bg WiFi, ethernet and two USB ports.

In terms of build quality, the unit is suitably chunky and plasticky, more tolerant of classroom bumps and knocks than similar form-factor notebooks like the Eee. A blue covering atop the lid and base forms a handle for carrying the unit around. The keyboard is reminiscent of late-'90s Toshiba Librettos – rugged and deep – and the lack of a spinning hard drive adds to the durability. We have a test machine here at LXF Towers, and while we don't want to perform extensive thrown-out-of-window stress tests, we're satisfied that the machine can sustain plenty of knocks and bruises.

Surely it runs Linux, right?
Absolutely! We wouldn't get this far only to announce that it runs Windows XP. Well, manufacturers do have the option to pre-install XP (see the controversy about Nigeria's on/off relationship with Windows in last month's *News*),

but Mandriva Linux is another alternative – and it's the distro supplied with test units. For the most part, it's a vanilla Mandriva installation, using KDE for the desktop and supplied with *OpenOffice.org* and *Firefox*. The Mandriva team has made a few tweaks, such as a bunch of large panels on the desktop for launching applications, but otherwise it's standard Linux fare.

Now, it's too early to start pointing fingers and dealing out harsh criticisms, but we do have a few beefs with the Linux setup. Whereas the OLPC X0-1 laptop – a similar venture – has a highly customised interface, the Classmate's default Mandriva installation uses a stock KDE desktop. Kids don't need *OpenOffice.org* (which takes 24 seconds to cold-start), when *AbiWord* and *Gnumeric* would be great replacements. Again, these are early days, but we'd like to see a more tailored distro for a low-spec, turn-on-and-go children's laptop.

Does it come with anything else?
Why yes: a very cool digital pen. Attach a USB-connected clip to the top of a sheet of paper, start drawing with the special pen, and you can see the same image on-screen. While this is an entertaining gimmick for us, it could prove to be hugely valuable in classroom environments, with kids making notes the 'old fashioned' way but storing them on the Classmate for later retrieval.

When will production ramp up?
Right now, Intel is piloting the Classmate in several countries including India, Brazil, Vietnam and the Philippines. Trials in Libya have been so successful that the government there has ordered 150,000 units. As mentioned, although Intel can supply a large number of units, the ultimate goal is to get more manufacturers on board with their own implementations of Intel's reference design. Naturally, the Classmate's biggest competitor is the OLPC X0-1 laptop. Originally boasting a $100 price point, the X0-1 is now set to cost $188, a jump that has some countries wary – will it increase even more in future? There's no official line yet on the Classmate's price, but when widespread production kicks-off Intel is hoping to hit the $230 mark. But don't expect to see it in your local PC World, though; like the X0-1, the machine won't be on sale to normal customers through the usual channels.

Where can I find out more?
Intel's Classmate Portal at **www.classmatepc.com** is the place to start – it has news of the latest pilot schemes and which countries are getting involved. This is part of Intel's grand 'World Ahead' program, which looks at technologies for connecting 'the next one billion' people beyond the developed world: **www.intel.com/intel/worldahead/**. LXF