

Farmer's Law and \$100 Laptops

By John W. Rice

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A technology director in Texas relates the story of his year in Haiti teaching at the American University in Port-au-Prince. He brought with him two used laptops, purchased for \$50 each at a Dallas flea market. When he returned home, the laptops stayed behind. His hosts were happy to have his "old" machines.

Those in more prosperous locales often display a snobbish attitude toward older technology. The fact the older technology may function perfectly well is beside the point. Just the taint of age is often enough to bring it below the level of acceptance for affluent techno-snobs.

In 1973, Richard Farmer, the late great international business professor from Indiana University, published a fascinating book entitled *Farmer's Law: Junk In a World of Affluence*. His basic premise states the more affluent a society, the higher quality of materiel ends up in its midden heaps. Congruently, the less affluent a society is, the fewer things are thrown away. (Richard Farmer's Law should not be confused with Dan Farmer's [Law of computer security](#).)

IBM debuted the PC eight years after Farmer's book, and we are approaching a quarter century of widespread personal computing. In thinking about Farmer's Law in relation to computers, comparisons with the auto industry are perhaps inevitable. To help prevent folks from fixing their cars indefinitely, Detroit introduced the concept of forced obsolescence. Your old car may run fine, but it is plainly obvious to your neighbors you are driving an older model. Thus, the taint of age helps coerce you into upgrading your car.

One of Farmer's great passions was fixing up old cars, getting them to run one way or another. He even started a [garage](#) to repair cars, using his principles of profound utility. In *Farmer's Law*, he mused that one way to dispose of old cars in the United States would be to simply unload them in a developing country. Within days the old cars would be back in service and greatly appreciated by their new owners.

The Wall Street Journal published an [article](#) in 2001 about a group of investors who scoop up old tractors at auctions in the United States and ship them to former Eastern Bloc countries. These "old" tractors are more reliable than the machinery the farmers are used to, and still have plenty of life left in them for farming. In an ironic [twist](#), used tractors continue to be imported by developing countries while the same countries export the new tractors their modern factories churn out.

Comparisons to tractors and cars run flat, however, when we take [Moore's Law](#) into account. Processors continue to exponentially increase their capabilities. Editing movies or playing the latest high end computer video games will proceed considerably smoother on newer machines than on older ones. However, in many instances computers are rarely required to perform at their maximum capabilities. In fact, the most common uses of computers continues to be word

processing, Web surfing, and e-mail. These are low horsepower applications, rarely requiring the latest machine on the market.

It's a tempting thought to simply send our old computers over to the developing world as we do our old farm equipment. One issue that may give us pause is the increased attention older equipment sometimes requires. For this, teachers in the developed world rarely have the interest or time to devote. Increasingly stretched support personnel likewise do not wish to spend much time on recalcitrant machines. But I suspect the developing world has fewer qualms with the occasional hiccup in older machines, especially where computers are in short supply.

I was reminded of Farmer's Law recently when reading more about the [\\$100 laptop](#). This MIT Media Lab initiative, spearheaded by Nicholas Negroponte, Joe Jacobson, and Seymour Papert, is an effort to place new, inexpensive laptops in developing countries. Economies of scale will be reached through manufacturing the laptops by the millions.

Standardizing on one type of inexpensive laptop is where MIT's team holds a strong point when working with the developing world and economies of scale in portable computing. Some machines will break, no matter how fool-proof the design, and someone will have to fix them when they need repairs. Sending batches of old computers would inevitably lead to wide disparities in parts and software, complicating repairs. Exporting one type of laptop will help implementation proceed much more smoothly. But the benefits of standardization come at a price. MIT's press reports indicate minimum orders of one million units are to be expected. And that is the weak point of the plan: even at the lowest price point possible, new computers are still expensive.

Despite the massive numbers required to make it economical, the \$100 laptop is a good idea. New, inexpensive, and hopefully reliable machines can be purchased en masse by governments in the developing world and distributed to students and other needy individuals. Used equipment is still useful too, although obtaining standard equipment on the scale of the MIT project could prove difficult. Used equipment still has a place in the developing world, though.

I never had the pleasure of meeting Dr. Farmer. I suspect were he with us today, he'd be intrigued by the MIT Media Lab project. I also suspect he'd like the notion of sending older computers to developing countries. Were we to meet, I'd tell him about a flea market in Dallas where we can get laptops for \$50 ...

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