ONE LAPTOP PER CHILD: DREAM OR DELUSION?

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I. INTRODUCTION

It is an intriguing idea: Together with national governments, corporations and caring individuals ensure that children around the world, particularly in developing nations, have access to their own laptop computer. Image the impact as children of the world have the opportunity to "explore, experiment and express themselves" (Laptop, 2007) with this symbol of 21st century empowerment.

If you have not already recognized the concept, it is the underlying premise of the One Laptop Per Child (OLPC) initiative developed and championed by MIT professor and former Media Lab director, Nicholas Negroponte. Expanding upon the 1995 thesis of his seminal work *Being Digital*, Negroponte envisioned a personal laptop computer that could be manufactured for $100 or less, withstand the rigors of hostile environmental conditions, and help bring digitally-disadvantaged children into the computer age.

The response to the initiative was immediate and global. In 2005, Negroponte, together with United Nations General Secretary Kofi Annan, unveiled a non-working prototype of the laptop at the World Summit on the Information Society in Tunisia. Later, the United Nations Development Program would formally sign on to the project and bring with it the enormous influence of the UN on the international stage. Nation after nation declared its intention to participate in the program and the prospect for long-term success seemed assured.

The past year, however, has demonstrated that fulfilling the vision has been far more challenging than I suspect Negroponte anticipated. Intriguing ideas – even those that some might consider noble – can fail in the implementation. The question we might consider today regarding the One Laptop Per Child initiative is not simply whether it will fail, but should it?

II. A REMARKABLE PRODUCT

The first obstacle the OLPC encountered in the development of a working machine was the $100 price barrier. Anyone could build a good, or even a great, laptop if price was not a concern. But for $100? As we all know too well, a single copy of the basic Windows operating system costs more than that. How could one hope to build a complete computer that could stand up to the rigors of daily use by children in third-world conditions, with multiple power options, a durable, viewable screen and with wireless capabilities? And what about software? However innovative it might be, the hardware would just be the necessary platform for the software learning tools that the laptop would need to bring to each student. Where would that come from?

To date the $100 pricing goal has proved to be overly ambitious. The recently unveiled "green machine" now costs $188, almost twice the hoped-for cost, but still a remarkable achievement for what has been broadly-acclaimed as a remarkable laptop computer. Consider what that $188 provides a third-world student:

- A green and white laptop computer that is completely sealed against dust and water, and which can be dropped from an average height without damage.
- A system that uses less than 1/20th the power of the standard laptop, meaning that it can be powered and charged with a single $12 solar power array.
- A wireless networking capability that automatically detects other laptops within range and connects them into a "mesh network" for communication and resource sharing.
- A backlit screen that detects bright sunlight and changes to black and white mode for excellent visibility in any light conditions. (The backlight can be changed with a Phillips screwdriver and a $2 part.) The screen can be rotated and flipped (as with many tablet PCs) for use as a book reader.
- 512 megabytes of RAM memory, two USB ports, microphone and headphone jacks, and 1 Gigabyte flash memory (for principle storage).
- The modified Fedora Linux operating system, internet browser and software learning resources.

The technological achievements of the OLPC have attracted the attention of computer industry insiders. A number of corporations including Google, Red Hat and Intel have signed on as supporters of the project, providing technical assistance and critical funding to make systems development possible. China's Quanta Computers is building the laptops and helping to contain costs. And to date, OLPC has resisted the appeals of retailers to offer the laptop to the domestic computer market to help fund the non-profit interests of the initiative.

III. GROWING OPPOSITION ON THE HORIZON

Not everyone has been enthusiastically supportive, however, of either the laptop in particular, or the One Laptop Per Child program in general, which bring us once again to our question of future viability.

Criticism of the laptop is not directed as much to what the machine can do, but rather to what it cannot do. The CPU and Linux-derivative operating system cannot run Windows or Mac platform software packages. How, some ask, can a system that cannot take advantage of the dominant tools of education and industry prepare students who are able to engage meaningfully the world beyond OLPC? After all, do we not live in a day when computer competency is measured first by one's ability to function effectively in the use of the Microsoft Office Suite, Adobe Photoshop, and other foundational software tools?

The inability of the OLPC laptop to tap into the enormous pool of currently-available software has opened the door for a corporate, for-profit, response. Intel, though a partner in the OLPC initiative, has declared its intention to offer the Classmate™ computer, a laptop based upon x86 chip architecture. Although expected to be about twice the price, and without many of the other design advantages, of the OLPC machine, the system would be able to run Windows and Mac software, and thereby help connect students to the mainstream flow of computer technology.

System storage, too, has been criticized. One gigabyte of relatively-slow flash memory might be sufficient for standard text documents or spreadsheets, but it is completely inadequate for the full range of tasks or interests that will likely appeal to students. Music files and graphic files alone can quickly eat up one gigabyte. My next cell phone will include a microSD card with more memory than the OLPC laptop. How long will an increasingly computer-competent student be satisfied with a system that is so inherently limited in its use?

These and other limitations have resulted in a decision by many early supporting nations to delay, or to withdraw support entirely for, the multi-million dollar investment that a large-scale deployment of the systems would require. Of the fifteen or more countries that had earlier expressed a desire to acquire the laptops, only Peru and Uruguay have signed contracts. Libya, which had publicly announced the $250 million acquisition of 1.2 million laptops and services in 2006, has yet to consummate the deal. With the prospect of other more powerful options appearing imminent, it appears that early enthusiasm for the project has been moderated by a desire to allow the marketplace to provide alternatives.

The response by OLPC leaders to a commercial option has been interesting. Nicholas Negroponte stated in an interview rebroadcast on YouTube, "I think that Intel has made a very big mistake, criticizing us, because we are a humanitarian effort and it really is not very intelligent to criticize it." The impression one gains is that the motivation behind One Laptop Per Child should immunize it against any criticism or challenge. Moreover, it is the responsibility of individuals and industry to support OLPC with huge infusions of capital, not because of the superiority of the product, but because of the sincerity of the effort.

IV. SETTING PRIORITIES

A larger issue also is coming to the forefront: Is giving tens of millions of children in third world nations the best way to improve their current condition and positively impact their futures?

John Dvorak, a respected technology commentator and avowed curmudgeon, expresses the concern forcefully. After citing statistics from the World Health Organization that tell us that 500 million people living in "absolute poverty", that millions of children die each year of hunger, and that 1.3 billion people are living on less than $1 per day, Dvorak asks this question:

"So what to do? Let's give these kids these little green computers. That will do it! That will solve the poverty problem and everything else, for that matter. Does anyone but me see this as an insulting 'let them eat cake' sort of message to the world's poor?"

Is One Laptop Per Child, in fact, a well-intentioned but seriously-naïve attempt to create what some refer to as a techno-utopia where technology solves every ill? Can giving computers to children who are living in desperate conditions, with broken social, educational and health systems really have the kind of impact that Negroponte and his supporters envision? Is this the best way to invest our development dollars, or are there higher priorities that we must address first?

The concern goes well beyond John Dvorak. Others such as Marthe Dansokho of Cameroon have stated in UN conferences and elsewhere that "clean water and schools were more important to African women." John Wood of Room to Read wonders if an investment in books and libraries would not be a more cost efficient alternative impacting many more people. In reality, any new idea should expect to have its critics and naysayers. When the individual voices become a chorus so large, however, that it draws the attention of international leaders sufficiently to slow the movement's momentum, it is time to have well-reasoned answers ready. To the minds of many, including my own, the leadership of OLPC has been unwilling or unable to provide those answers.

V. Still Other Questions

I suppose that visionaries are, by self-definition, above the hum-drum realities of practical implementation. That is typically the responsibility of other differently-gifted individuals, or so the visionaries would have you believe. Still, the champions of this initiative appear to have glossed over glaring questions in their enthusiasm that desperately need to be answered. For example:

- How will children benefit from a high-tech laptop absent an existing educational system with trained teachers and support systems able to integrate the new tools into a cohesive instructional program?
- How will a laptop benefit students in areas where literacy, let alone computer literacy, has not yet gained a significant foothold? Is this the best, first, investment?
- Computer systems fail. We all know that the newest, fastest computer systems become legacy systems almost from the time they leave the store. How will a nation's initial investment of millions of dollars not become piles of green plastic paper weights scattered across the countryside within a year?
- What provisions are in place for the next-generation of user? If the effort is successful, the hardware and software limitations of the computer will only frustrate if there is not a migration path prepared for those who are the program's success stories.

VI. CONCLUSION

To be very clear, I am not at all opposed to the One Laptop Per Child program. What they have done technologically is already changing the way laptops and computer systems are conceived and built. The desire to benefit the children of the third world is laudable, even noble, and Nicholas Negroponte is to be honored for his vision and leadership. Nevertheless, I believe it would serve everyone well to pause and consider the concept in context. How will this effort work best? How can industry, government and caring individuals all be involved to the betterment of the final outcome? How can placing a laptop in the hands of the world's underprivileged children become a piece of a larger picture, rather than the picture itself?
I invite your comments. Let's talk about the One Laptop Per Child initiative and how it might be optimally effective. And let's talk about how the church and the people of God might have a role in the education and betterment of children worldwide. It is an important conversation that should not wait for another generation of children to grow old in their despair.