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# An Open Letter to President Obama: Consider the Full Costs of Wireless Technology

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Before this nation makes Wi-Fi in schools like it is in coffee shops, as the president recently urged, we need to consider what this could do to our children's brains and bodies. Three years ago the World Health Organization declared cell phone and other wireless radiation a "[possible human carcinogen](#)," -- the same category as some pesticides, lead and engine exhausts. Since then [evidence has mounted](#) that such radiation can profoundly affect human biology, altering [brain metabolism](#), damaging animals exposed during [pregnancy](#) and reducing [sperm count](#). Before blanketing our pre-schools, kindergartens and middle schools with wireless radiation, we need a full life-cycle assessment of economic and health costs and benefits of wireless technology. As you have said in other contexts, "Just because we can do something, does not mean that we should do something."

The notion that the fast developing brains of children benefit from digital devices flies in the face of what experts in neurodevelopment understand. Your pledge to put wireless in all schools for children from pre-K on does not rest on any proof that such technology is safe or that children actually learn better using such technology.

While our nation excels at many things, our wireless based Internet connection is inferior to a slew of other countries, including [Korea](#), [Latvia](#), [Romania](#), [Bulgaria](#) and the [Czech Republic](#) -- all of which have invested in Fiber To The Home (FTTH) rather than wireless Internet connections. Wireless routers are costlier, less reliable and can be between three to 10 times slower than wired systems that can operate at speeds of up to one gigabyte a second -- as other technologically savvy nations appreciate, there are also important health risks posed by classrooms full of closely held wireless devices.

Growing numbers of experts in telecommunications understand that plans to phase out wired phone lines or have energy systems rely on wireless metering are frankly ill-conceived and uneconomic. A parallel interdependent network of wired fiber-optic cables is faster, safer and more secure against criminal or terrorist attacks or wide swings in weather. It is more difficult to hack into or take down a wired network rather than a wireless one, especially if the latter has not been properly encrypted. Bravo to Google for [recently announcing its expansion](#) of wired services in many major cities.

Studies finding wireless radiation tied with serious biological impacts have moved governments in [Israel](#), [Canada](#), [Australia](#), [Korea](#), [India](#) and [Finland](#), to advise reducing children's exposures. Following actions in Turkey, [France](#) and [other nations](#), the Health

Minister of Belgium recently [banned the sale of cell phones for children](#) ages 7 and younger. What does she know that you don't?

Ignoring these serious concerns, the mobile phone industry has treated reports of risks of cell phone radiation as inconveniences to be rapidly undermined using science as a form of public relations. When confronted with the possibility that cell phone radiation could damage the brain cells of rats way back in 1994, Motorola wrote a memo to its public relation's firm noting the need to "[war-game](#) the science." More recently, in response to the WHO declaration of possible dangers of cellphone radiation, the Global Manufacturers' Forum set up a quarter of a billion dollar fund to produce defensive information -- effectively attacking the credibility of the WHO and its scientists, and promoting other expert reviews that counter and undermine the WHO.

We are flying blind here, as there are no studies on the safety or efficacy of microwave based learning for young children, nor is any planned. Despite repeated advice from expert groups, the U.S. has no training or research programs underway in this field and is forced to rely on outdated science and foreign reports. One way to fund such programs would be to impose a one dollar fee (split between consumers and industry) on every phone for five years to fund much-needed independent training and research to evaluate and improve the technology.

Until we have better information at hand, you should encourage the growth of fiber optic cables and order the FCC to drop wireless expansion into schools with young children -- relying instead on wired systems and keeping wireless tablets on airplane mode if they have already been purchased.

Years ago the philosopher Immanuel Kant noted that "What man must do, he can do." But the opposite is not true. A rigorous analysis of the full costs and benefits of wired and wireless InfoTech is long overdue.

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