

My headphones: the social and political implications

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In entry #249, I mentioned the lovely and simple concept of the canalphone. To summarize: I think they are fabulous; they are a simple idea—just squish the speaker through an earplug and you're done; and they became ten-bucks cheap only in the last year or two.

OK, so who owns the concept?

Could one of the people selling \$150 canalphones have patented them and prevented the \$12 entrant from killing the market? [Though the \$150 versions are still out there for sale, because people have no idea how to evaluate speakers and so just stick to price as an indicator of quality.]

It seems not. The speaker-in-earplug idea's been around for a long time, as in patent 5,251,326, filed in 1990, for an entire system of which one component is a speaker-in-earplug. You can also find many hearing aids that use a comparable setup. Or, many applications and patents for in-ear speakers with an interesting twist, like adjustability or multiple speaker arrangements. But there's no patent that I could find—certainly not from the last thirty years—for speakers embedded in an earplug.

So the simple concept has been around for decades, and there's neither legal nor technological barrier to their sale right next to the crappy earbuds that you stick right against but not quite inside your ear. In this case, the Patent Office seems to have done the right thing: it's such a simple and obvious thing that it doesn't merit a government-granted monopoly.

So why hadn't ten dollar canalphones existed to this date? Why were they considered high-end, while the low-end had to make do with those crappy earbuds?

Books on the history of science never quite answer that sort of question. What kept Euclid from working out irrational numbers—or even imaginary numbers? Well, nothing at all, and yet he didn't. Nobody did, for millennia, and we can rest assured that two hundred years from now they'll muse at why we hadn't yet worked out all the things we hadn't worked out ourselves.

But what if he had? What if all of Euclid's colleagues were trundling along with their existing theories that are still trying to grapple with the concept of the square root of two, and Euclid explains to them that we can derive consistent properties around the square root of negative one? There are examples where such ahead-of-their-time ideas were broadly accepted, and where they were broadly rejected. E.g., go ask your search engine about Lord Monboddó.

The patent office is built around a supply-side story of technological progress: the thing that holds us back from better technology is the time spent on new innovation, and the sole means the patent office pursues in advancing technology is (implicitly) paying people to sit in their lab developing new technologies. But we sometimes find that it's the demand side that's the bottleneck. Am I saying anything groundbreaking when I tell you that we consumers (both individual and corporate) often stick with tried-and-true even in the face of clearly better new alternatives? Economists tell us that if something better comes along, its adoption will be immediate and complete throughout the given market. I suppose that sometimes happens, but marketing people instead rely on a standard model (the Bass model) that describes the slow spread of a new technology through the market.

There's still the problem of putting enough brains on a problem and encouraging that flash of genius that creates the new, but that's just the first stage, and is often the easy part relative to the social problems that the idea will have once it is competing with other ideas for attention, a place on the agenda or syllabus, and dollars.

In the case of the concept of a small speaker smooshed into an earplug, that's existed for decades, so there is no patent-office-style bottleneck. Rather, demand-side reluctance seems to do a decent job of explaining why canalphones didn't happen sooner. There first had to be acceptance for cheap walk-around headphones (circa 1970s), earbuds (circa 1980s), and exotics like noise-canceling headphones (circa 1990s).