The Winding Road Toward Innovation

The technological progress that has taken place within the last century has had a deep impact on modern society. One aspect of this change, which I find especially interesting, is our seemingly unwavering faith in technology. We somehow have come to see technological innovation as a panacea to all our current and future problems. And as those challenges become more pressing, there is a willingness to assume technological progress will jump in and save the day. This trust in the power of technology has made us particularly gullible to technological hype—for better and for worse.

In this issue, we have sought to bring together a series of articles deconstructing the concepts of hype and innovation. It is my particular wish that you will be lead toward a deeper understanding of the social character of innovation. It is easy to believe technological progress follows the natural laws of human evolution. This “survival of the fittest” perspective dictates the “best” technology should always prevail—a view that has however been again and again, at least to some extent, disproved

throughout history. Indeed, certain technological innovations, for example Google Glass, have failed to conquer the market. While other innovations have managed to reach widespread use, but had to wait years, sometimes even decades, to do so. Though not a technology-related example, I find Mozart a particularly striking illustration of this pattern: Although immensely popular today, he struggled during his lifetime and died in poverty. In the reverse scenario, some innovations become ubiquitous almost overnight, but fail to secure their position on the market and sink into oblivion just as fast as they rose to fame. Does anybody remember fidget spinners? Finally, it is also worth mentioning seemingly suboptimal (or outdated) technology that, against all odds, continues to be widely used. For instance, fax machines are still frequently used within the healthcare sector. How can that be?

The fact is technological innovation is far more of a social and cultural phenomenon than a technical one. Thus, innovation does not only depend on the technology itself, but

also on where and when the technology is being introduced, for whom it is meant, how well it matches the values of the target population, and so on. Let me give you a very telling example. In Sweden, where I live, it has become quite common to make payments through smartphones—several applications make it easy to receive and send sums of money via one’s phone number. These apps have made it almost obsolete to use one’s bank card to pay in shops. In Switzerland, however, similar applications reportedly struggle to secure their place on the market.¹ Beyond the technology itself and its potential limitations, several factors may be at work here.

First of all, three different companies are competing against each other, each with a separate product that is not compatible with their competitors. Second, Swiss people might simply be less inclined than Swedes to pay via

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¹ Comparis. Comparis-Umfrage zeigt Trend zu kontaktlosem Bezahlen. 2018; <https://www.comparis.ch/kreditkarten/bezahlen/studie/kontaktlos-zahlen>

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their smartphone. For instance, safety and privacy concerns might be culturally more pronounced in Switzerland than in Sweden. Third, mobile technological infrastructure might present limitations that, in practice, restrain the use of smartphone payment applications. For example, only a few shops accept that mode of payment or consumers experience trouble connecting to internet. These factors are all quite independent of the applications in themselves, but play an important role in the ability for payment apps to become a natural part of people's everyday lives in Sweden.

If it takes much more than “good” technology to lead to durable innovation (and if “good” technology does not always manage to assert itself), then what are we left with? There have been many instances where hype was created around a product that did not keep its promises. It is thus the illusion of innovation. In some cases, as the widely publicized example of Theranos illustrates, this illusion is purposefully created and market expectations willfully misled. Yet, in other cases, good intentions are genuine. However unforeseen “grains of sand” manage to slow down the innovation wheel, sometimes halting its progress

altogether. Those “grains of sand” can take different forms. Sometimes, the technology is just not advancing as fast as predicted (e.g. the system cannot be made to function in the required way). Other times, it is the application of the technology that is mistaken (e.g. placed into a product that people do not need/want). Or perhaps the contextual requirements for the technology to work are overlooked, which brings us back to my earlier point on the dependence of technological innovation on broader social, cultural, and infrastructure-related factors.

Innovation requires the two sides to meet—fitted technology in a favorable social, cultural, and environmental context. Hype, though sometimes misplaced and error-inducing, can be a good moderator in such a process, leading to both sides putting effort into making innovation possible. Without hype, i.e. without any interest or expectations toward new technology, there would be no attempts to innovate. And although we invite you to look at hype from a critical perspective, we also aim to show you how it is a necessary ingredient for technological progress.

Hype and innovation do not constitute a research field of their own. Both are present, in one way or another, in almost all disciplines, which made tackling this issue particularly challenging. Knowledge and experiences are spread over whole communities of researchers, and finding an expert proved difficult. I am therefore particularly grateful to Adrian Scoică and Gierad Laput, my incredibly driven co-EIC, who did not hesitate to jump in as guest editors in order to bring to life their vision for the issue. It was a great pleasure to have Adrian, a former *XRDS* editorial board member, back on the team for this project. Putting the issue together was a very collaborative effort, and I also would like to stress the amazing work done by our feature editors Ophir Friedler and Eliezer Bernart, who both invested a lot of time into inviting authors and coordinating the editing effort. I hope you will enjoy the result of our work.

—Diane Golay

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