Technology and Societal Changes

A complex story with many possible endings

How is information technology changing society today, at the end of 2020? This is what we are asking in this latest issue of *XRDS*. Reflecting on the role of information technology in the evolution of our roles in the world seems particularly appropriate as we end this significant—and in many ways, very strange—year.

Of course, one issue is not enough to paint an exhaustive picture of the multiple and complex ways in which modern information technologies—such as the internet

(and social media), artificial intelligence, or the Internet of Things—are transforming our communities. However, I do hope the examples provided

in the following pages will inspire you to ponder not only the path(s) that we are currently taking thanks to these technologies, but also the one(s) that we could or maybe even should follow in the short and long term.

Technology is such a self-evident part of our daily lives, so integrated into our lifestyles, that we often forget it is there. For instance, when was the last time you paid with cash? For me, it must have been a couple of years ago.

In Sweden, more and more shops are choosing to become “cash-free.” Instead of paying with bank notes and coins, you can do it with your card or with your phone. It is quicker and more convenient—both for the client and the cashier. (Well, it is more

convenient if you are used to these technologies. Those who choose to not use them or those who are unable to adopt them are excluded.) For me, paying with a card or by phone has become such a habit that I forget to consider it as technology use. It has become difficult to remember how I used to do it before: Did I really have to go searching for an ATM before entering a shop? Did I really keep track of my expenses by hand? Now, all of my expenses are being automatically classified into different categories such as household, food, or clothing. It is very practical. It also means my banker can get a very accurate picture of who I am as a consumer just by going through my list of expenses. They can also know exactly where I have

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Taking a step back to reflect on technology and societal change seems to get increasingly hard as modern information technology becomes more and more ubiquitous and, thus, invisible.

been and when. Scary? Oh, yes. Now that I think about it, that is.

But one must wonder what this turn from cash to digital money has for broader societal implications. There are a few positive ones: increased security for sales assistants (who no longer need to fear being attacked by burglars) and increased efficiency of payment (which means an increased satisfaction for customers and an increased flow of customers for the storekeepers). In addition, sales assistants no longer need to be on the lookout for counterfeit money. Oh, and in the midst of the COVID-19 pandemic, digital money transfers are also supposed to help contain the propagation of the virus. Simultaneously however, stores are at risk for becoming increasingly vulnerable to cyber attacks. Shop owners are also preventing a segment of the population from consuming their products (as previously mentioned). The environment is probably another big loser; more (new) phones and card readers need to be produced. Also, we customers are becoming increasingly traceable, and the details of how we spend our money (and even time) can be accessed by different sorts of people without our being able to know or do anything about it. (Yes, there was a

time where that information just was not there.) So our expenses are not as private as they used to be, and probably as we like to believe them to be.

Aren't we making ourselves increasingly vulnerable, and aren't we decreasing the amount of control we have over this crucial aspect of our lives? I wonder what steps we need to take—as individual consumers and we as a society—to try and keep the advantages and reduce the disadvantages? That is, increase our control over our financial data and ensure everyone can benefit from the same services.

Of course, my aim here is not to come up with an answer to this question. I am merely reflecting on how this rather simple change from cash to digital money has transformed our daily lives, and changed the way we perceive money, money transfers, and financial data. I am also considering the implications for the future: What are financial transactions, big and small, going to look like in 10 years? Who are going to be the main actors on the stage and who is going to be locked out?

My message is this: The societal changes connected to technology development have deep and complex implications. One challenge is that it is hard to predict what are going to be the positive and the negative outcomes. The good news is that we—individual users, policymakers, politicians, activists, and observers—can claim the ability to shape these outcomes as we go. It does however require us to remain critical toward the technologies we use and be aware that the biggest changes are happening below the surface.

This issue has been put together by two incredibly engaged and driven Ph.D. students: *XRDS* feature editor Henri Maxime Demoulin from the University of Pennsylvania and guest editor Ross Teixeira from Princeton University. A big thank you to them for bringing together this eclectic ensemble of articles, which I hope you will find as instructive and thought-provoking as I have.

—Diane Golay

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