: Why is anticipatory technology decision-making important?

by Daniel J. Power

Technology change is accelerating and advancing. Technology optimism, a belief that improved technology will always solve more problems than it creates, remains a mantra and guide for some. Technologies, especially information technologies, have improved most people's lives. Also, most people displaced by technology change or those challenged to learn new technologies to function effectively accept, even if grudgingly, the necessity and inevitability of technology disruption. Sadly some of the disruptions from technology innovations were not anticipated and could have been avoided. For example, Facebook was slow to give users control over information about themselves that was broadcast by the News Feed. Privacy abuses and concerns remain a problem for social media. Senior managers and government policymakers must anticipate and be vigilant in identifying potential harms. Once a risk, no matter how small, is identified, then steps must be taken to eliminate or mitigate the risk.

A potentially disruptive technology, Google Glass was introduced without adequate consideration of privacy issues. An optical head-mounted information display has many useful applications, **but** when deployed in the shape of a pair of eyeglasses second-order consequences and externalities influence adoption, abuse, and use. Other technologies that were introduced and then had problems that should have been anticipated include 1) the Boeing autopilot in the 737 Max plane, 2) the Apple Card's biased credit limit algorithm, 3) Secret, an "anonymish" social network (Verge Staff, 2019), and 4) Virtual Reality headsets and live-action VR movies.

Mistakes happen and hindsight is more accurate than foresight, but with transformative technologies like Blockchain, Artificial Intelligence, Internet of Things, and Virtual Reality we need to look ahead proactively. For example, integrating innovative technologies into automated systems is likely to eliminate jobs. If companies and governments don't make plans to provide people with equivalent or enriched work, then there will be massive increases in inequality that will create social upheaval (Sherman, 2020). Also, with global supply chains there are often interactive and unintended consequences. Managers must learn to ask: What are the potential harms? how will people react to an innovation? Will privacy rights be jeopardized?

The time pressure to act is sometimes used as an excuse for why unintended consequences occurred following the adoption of technology. In a planning and technology assessment situation, decision making should proceed systematically and without extreme time pressure. On a continuum, time pressure increases as crisis decision making is triggered. Our goal should be avoiding crisis decision making about technology adoption and use. Consumers/buyers assume a decision-maker has anticipated relevant consequences and has applied remedies and developed contingency plans. Action-oriented decision-making occurs in the context of a more pressing need for a decision. Also, the potential impact on the future behavior of the relevant players differs, plans and anticipatory decision making can change emergent behavior even if the plans, policies, and guidelines are not eventually enacted.

Increasing population, an aging population, resource scarcity, a desire for a better standard of living, and a desire for greater mobility and more entertainment are common forces driving technology innovation forward. These factors coupled with human curiosity and ingenuity are pushing technology innovation and transforming how we work, live, and play. We can anticipate changes in the near future from the Internet of things, machine learning, artificial intelligence, automation and robotics, 3D printing, biotechnology, nanotechnology, renewable energy technologies, real-time data analytics associated with large, diverse data stores, and satellite, surveillance, and drone technologies.

For many years, I have been an advocate for anticipatory decision making by managers. Anticipatory policy-making by regulators is also appropriate, but here in the United States at present, the trend is more focused on deregulation. A "wild west" mentality for technology innovation may lead to faster adoption and evolution, but at an unknown cost. Technology realism must replace technology optimism, "improved" technology does not always solve more problems than it creates. Claimed improvements and benefits from a technology innovation must be realistically assessed. People can influence and direct the technologies we choose to implement and use.

We can and should encourage and promote a proactive approach to technology adoption, but realistically we must persuade people that ethical, anticipatory decision-making is necessary and important. We need to gain the benefits of technology innovation and avoid, mitigate, or remediate harms and negative consequences. Anticipatory technology decision-making is important because technology adoption is usually **irreversible**. If we are proactive and anticipate issues, we can adapt an innovative technology to human needs rather than forcing people to adapt to the new technology. We should seek to move forward with technology in a positive, progressive, purposeful way. Technology innovation can be an enabler of "good" and a positive agent for change.

Thanks, San Murugesan for sharing some related articles.

References

CBInsights, "When Corporate Innovation Goes Bad — The 160 Biggest Product Failures Of All Time," Research Briefs, April 7, 2020 at URL
https://www.cbinsights.com/research/corporate-innovation-product-fails/

Nesta UK, "Anticipatory regulation," at URL
https://www.nesta.org.uk/feature/innovation-methods/anticipatory-regulation/

Nesta UK, "Renewing Regulation: 'anticipatory regulation' in an age of disruption,"
March 6, 2019 at URL
https://www.nesta.org.uk/report/renewing-regulation-anticipatory-regulation-in-an-age-of-disruption/

Sherman, E., "A New Wrinkle and Danger In How Automation Will Obsolete Jobs," Forbes, January 30, 2020 at URL
https://www.forbes.com/sites/eriksherman/2020/01/30/income-inquality-automation-ai-global-competition/#41a2f72528a0

Verge Staff, "The 84 Biggest Flops, Fails, and Dead Dreams of the Decade in Tech," The Verge, December 20, 2019 at URL
https://www.theverge.com/2019/12/20/21029499/decade-fails-flops-tech-science-culture-apple-google-data-kickstarter-2010-2019

Vogel, S., "What is anticipatory regulation?" ITPro, June 1, 2020 at URL
https://www.itpro.co.uk/business/policy-legislation/355856/what-is-anticipatory-regulation

This type of legislation aims to resolve the conflict between lumbering legislative process and rapidly evolving tech
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