

# Libraries Facing Digital Disruption

In the previous chapters, we have seen how digital disruption is blurring the lines between the physical, digital, and biological spheres through the examples of extended reality, Big Data, the Internet of Things, synthetic biology, and 3-D bio-printing. We have also taken a look at what kind of transformations today's digital technologies are enabling in production, management, and governance. How can libraries and library professionals prepare for the digital disruption? How can libraries adopt and utilize new technologies to make library services, programs, and operations more successful and innovative and at the same time contribute to social progress? In this chapter, we will focus on these questions.

## The Right Mindset for Innovating with Technology

Libraries have been embracing technology since the dawn of the Internet. It is thanks to public libraries that the public has a reliable place in their communities that provides free Internet connections and many educational offerings that teach people a variety of digital skills essential today. Many libraries also offer makerspaces, studios for multimedia creation, spaces that support entrepreneurship, and more.

There is no doubt that in order to stay relevant to the evolving needs of patrons, libraries must continue to invest in technology-related offerings and innovate their services and programs. This, however, is not something that is opposite to or competes with what some consider to be more traditional types of library services and programs, such as in-person reference consultation and the circulation of physical library materials. This is because technology is to

help the library achieve its mission, not to change the mission itself. No matter what technology the library adopts and how it changes the library's services, programs, and other offerings, the library's mission—to empower people through knowledge and to facilitate and support their information-seeking and learning activities—does not change.

Given this, what kind of mindset would move forward the ability of library professionals facing digital disruption? Clearly, the ability to identify new technologies relevant to libraries, learn them quickly, and develop ways to adopt and utilize them to benefit library patrons is critical for library professionals to thrive in this environment. The mindset that helps cultivate this ability includes traits such as curiosity, open-mindedness, and confidence.

In order to identify and learn new things relevant to libraries, one must have a certain degree of curiosity. Only those who are curious enough will venture to learn new things. Open-mindedness is beneficial particularly in times of fast change since it is hard to predict the full impact of a new technology trend as it continues to develop and evolve. By keeping an open mind, library professionals can more easily spot what is relevant to libraries in today's continuously changing and evolving technology scenery. Lastly, a sense of confidence plays a key role in learning new things from the fields with which one is not previously acquainted. While some library professionals may already be well acquainted with a variety of technologies, many may not. Regardless, in comparison with those in other professions, those who work at libraries are in a much better position to learn new things due to their training and experience as information professionals and the wealth of resources available at their workplaces.

One way for managers and administrators to prepare their libraries for digital disruption is to provide their staff with time and resources needed to pursue appropriate professional development. They should also make intentional efforts to foster and cultivate the mindset of curiosity, open-mindedness, and confidence; encourage experimentation; and facilitate the exchange of ideas and further collaboration among the staff. This will increase the library's collective knowledge and skills over time and enable the library staff to develop new and innovative programs and services on an ongoing basis. Libraries are the embodiment of our belief that information and knowledge are to be shared for greater benefit. It would be only natural for this belief to be put into practice by library professionals themselves.

## Keeping a Critical Distance from Techno-Utopianism

Having a sense of excitement about what new benefits technology may and can bring to libraries and library patrons is important. But equally important is to understand that technology does not always produce social good and can have negative social consequences. Libraries are institutions that aim to generate and increase social good in the communities that they serve. As a result, library professionals must be attuned not only to the benefits but also to the limitations of new technologies adopted by a society.

In 2015, a drone was hovering over the house of a man named William Merideth in Kentucky. Merideth was alarmed by its extremely loud noise and was not sure if it was a danger to his kids playing outside. He thought the drone was spying on his family and shot it down with his shotgun.<sup>1</sup> The owner of the drone turned out to be his neighbor, David Boggs. Upset over his expensive drone being completely destroyed, Boggs accused Merideth of property damage. Merideth argued that he had a right to privacy at his home. Not knowing what law exactly applied to a case like this, the police officers arrested Merideth because he was the one with a gun, and Boggs subsequently filed a claim for damages in federal court in Louisville.<sup>2</sup> The federal court dismissed Boggs' claim, however, leaving as to whether American federal law recognizes the concept of aerial trespass unresolved.<sup>3</sup>

Since drones didn't exist when the airspace law was made, the law itself does not address the question of whether a drone flying over private property counts as trespassing or not. While that question may be of interest mostly to legal scholars, the result of the adoption of a piece of commercial technology has much broader consequences. A loud flying robot in the air over people's houses is understandably alarming. In a rural area where many residents own a gun,

a drone can easily trigger shooting. Of course, none of this would have occurred to the drone engineers and manufacturers. They probably thought that they were simply building a new and innovative tech gadget that is cheap enough for the consumer market and nothing beyond. They certainly wouldn't have associated their drones with potential gun violence in a residential area.

The story of William Merideth and the drone that he shot down aptly illustrates how a piece of technology whose use and design are not well thought out can cause an incident with potentially deadly consequences. According to Meredith Broussard, a data journalist and the author of the book *Artificial Unintelligence*, such lack of caution about how new technologies will be used and a reckless disregard for public safety and the public good are common in tech creators.<sup>4</sup> She draws our attention to the danger of techno-utopianism, the belief that technological advances can and will always lead us to a better and eventually ideal society.

Not surprisingly, this blind optimism about technology is getting more and more widely accepted, consciously or unconsciously, not only by tech creators but also by the general public, including library professionals. Since technology has brought so many benefits to our everyday lives, the mere idea that technology may cause harm rather than good can seem almost inconceivable. But no matter how powerful technology is, it is only a means to an end. Technology is not a panacea. Nor is it a goal to be sought out for its own sake. As institutions dedicated to educating the public and striving for continuous innovation to stay relevant to the public's changing needs in pursuit of knowledge and information, libraries should raise the public's awareness about the social consequences of new technologies adopted, in addition to their benefits.

## Technology Is Not Value-Neutral

In early 2018, the ride-sharing company Uber announced a new service called Pool Express. This service puts together nearby riders heading out to destinations close to one another into one group and asks them to gather at one location. They then all take an Uber ride at that location, and Uber drops all of them off at the one destination.<sup>5</sup> This was advertised as another amazing innovation. Only it is not so innovative.

Grouping people together to take them to a common destination is what the bus and other modes of public transportation have been doing for a very long time. It is not at all a new idea, nor is it particularly innovative. It does not solve any new problem. Uber's Pool Express may lure those existing bus riders away

with a fare lower than regular Uber rides. They are likely to be attracted to this new option because public transportation in many cities is not well managed or financed.

What is troubling about this type of so-called innovation is that those in many start-up technology companies often fail to see that the problem that they claim to solve with technology has a cause that has little to do with technology per se and a lot more to do with complex socioeconomic problems. The reason why many people do not find public transportation service appealing is in large part that such public transportation has not been sufficiently funded. If it were sufficiently funded and properly maintained to be frequent, on time, safe, and clean, then many more people would happily use public transportation. The currently unsatisfactory service condition of public transportation in many cities is not something that can be quickly fixed with some lines of code. Resolving this problem requires the political will of the people and a change in government spending. The problem is political, not technological.

But if Uber ends up fulfilling the majority of the public transportation needs, what is likely to follow? With fewer and fewer people using the existing public transportation options, such as city buses and the subway, public transportation will be given even less funding and lower priority. The conditions for the riders will worsen, and the bus and subway lines may be severely cut or even completely eliminated. This may not matter to those who can afford the private Uber service. But those who rely on public transportation options and cannot afford alternatives with a higher fare will be left without a means of transportation necessary for their everyday lives. Given this closer look, Uber's Pool Express is not just an old idea repurposed. It is a wrong fix that worsens an existing problem, which at the same time distracts people and diverts their attention from the real solution.

This is another case of techno-utopianism in action. It is also a good example of why technology does not always make things better. In her book *Artificial Unintelligence*, Broussard discusses the following characteristics of techno-utopianism.<sup>6</sup>

- blind optimism about technology
- lack of caution about how new technologies will be used
- disregard for social convention for the sake of building new things
- prioritization of efficient code above human interactions
- worship of the cult of genius that camouflages a range of structural discrimination
- techno-libertarianism and counterculture for radical individuality
- inability to reconcile the demands of being an

individual with the demands of participating in a society, as if they were incompatible with each other

These characteristics can serve as a useful guide for library professionals in detecting and understanding the issues and shortcomings of approaches that claim to solve complex socioeconomic problems with technology alone and in educating the public about them.

Just as Uber's Pool Service has the potential to weaken our public transportation infrastructure and worsen the riding conditions of many who cannot afford more expensive private transportation services, the story of a drone marketed and sold to individual consumers illustrates a new technology's negative social consequence that could have been foreseen and prevented if sufficient thought were given to how people might react to a drone flying close to their houses with loud noise. It is not up to libraries to undo those negative social consequences and harm. But libraries can consciously try to adopt and utilize technology in the way that creates and contributes to social good.

Technology is not value-neutral. Technology affects and shapes our society, our behavior, and our social norms. It is a mistake to treat technology as if it were neutral, objective, and not colored by human beliefs, judgments, biases, and prejudices. Technology can certainly bring many amazing benefits to us and serve as an equalizer and democratizer for our society. But technology can also equally well function as a divider and the amplifier of existing discrimination. Technology is not inherently liberating. Nor does it solve every problem and automatically bring social progress.

Many times, I have seen a false dichotomy drawn in technology: makers vs. takers; creators vs. maintainers; developers vs. documentarians; hard skills such as coding and mathematics vs. soft skills such as project management, writing, coordination, and communication. In all these cases, makers, creators, and developers are considered to be superior to takers, maintainers, and documentarians. Hard skills are also often regarded to be somehow more valuable and harder to obtain than soft skills. No matter how prevalent, these ideas are not correct. All of us engage in some type of making activities. The fact that some people do not spend their time on 3-D printing or laser cutting or programming does not make them takers. There are a wide variety of making activities, from sewing and button making to screen printing, and everyone engages in some type of making activities. Without maintainers, new services, programs, and procedures do not last. Without documentarians, no application or system will be properly used and cared for over time. Without soft skills, hard skills will generate only products that are maladjusted to human

needs. There is also no hard line between these two categories. One can be and should try to be both a maintainer and a developer, a maker and a taker, and skilled in both soft and hard skills.

These value-laden categorizations often arise from erroneous beliefs. But we rarely confront and question them. Why do Amazon's and Apple's virtual assistants both have female names, Alexa and Siri, while Hal 9000 in Arthur C. Clarke's *2001: A Space Odyssey* has a male name and a menacing red eye? Social anthropologist Kathleen Richardson wryly remarked on the blatant sexism in AI scientists and engineers: "I think that probably reflects what some men think about women. That they are not fully human beings. What is necessary about them can be replicated, but when it comes to more sophisticated robots, they have to be male."<sup>7</sup> It is easy to miss the hidden value judgement, such as this sexism embedded in new technologies, and to place unconditional trust in those technologies. But if we adopt those technologies without fully understanding their negative social consequences, we can end up with the world that is detached from and deprived of our own social values.<sup>8</sup> Our values should guide technology, not the other way around.

Since today's digital technologies continue to advance at a rapid pace, it is difficult to predict the future with precision. While we may try our best to guess how those changes, disruptions, and transformations will impact libraries, technology can always run ahead of us. But the rise of techno-utopianism—the belief that technological advances can and will always lead us to a better and eventually ideal society—is one unmistakable trend that can cause much social harm.

Libraries are in a unique position to educate the public to think critically about technology and the rising ideology of techno-utopianism in our society. To successfully play such a role, library professionals should be well versed in new technological developments and their applications. At the same time, they must be also fully aware of the fact that

our unconscious value judgements and biases permeate both the technology we create and our discourse around it. I believe that this is the area where libraries in the era of the fourth industrial revolution can make a substantial positive impact and play a unique role. Technology is great at crunching a massive amount of data and at surfacing overlooked or unrecognized patterns in them. But technology knows no values. Social values and human interaction will be the two most important keystones that undergird tomorrow's tech-savvy libraries. Libraries should aspire to be the place that both digitally and physically reminds people that no technology can replace the value of human interaction.

## Notes

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2. Meredith Broussard, *Artificial Unintelligence: How Computers Misunderstand the World* (Cambridge, MA: MIT Press, 2018), 68.
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4. Broussard, *Artificial Unintelligence*, 69.
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7. Tanya Lewis, "Rise of the Fembots: Why Artificial Intelligence Is Often Female," LiveScience, February 20, 2015, <https://www.livescience.com/49882-why-robots-female.html>.
8. Bohyun Kim, "The Peril of 'Data-ism,'" *Online Searcher* 43, no. 6 (November/December 2019), <http://www.infotoday.com/OnlineSearcher/Articles/Technology-and-Power/The-Peril-of-Dataism-135012.shtml>.