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Abstract: This essay proposes that librarians practice ethical consumption when purchasing electronic devices. Though librarians have long been engaged with environmentalism and social justice, few have suggested that such issues as e-waste and sweatshop labor should impact our decisions to acquire e-readers, tablets, and other electronics. This article presents a philosophical framework for evaluating the ethics of these acquisitions, as well as guidelines for librarians considering specific purchases. Ultimately, the article argues that librarians should consider curtailing the purchase of new electronics on the basis of the environmental and social justice impact of the manufacture and disposal of such devices.

Introduction

In developed countries, environmental and social justice advocacy frequently conflict with local, day-to-day needs and priorities. This is especially true of the sustainability issues surrounding technology. As a profession, librarians embrace new technologies and see them as a means to provide access to information, to facilitate effective information literacy instruction, and to increase engagement with a range of audiences. This perspective has led many libraries to acquire new technologies such as iPads, Kindles, Chromebooks, or wearable technology such as the Apple Watch or Google Glass. But how carefully have we examined the complicated ethics

involved in the manufacture and disposal of these devices? Should our local concerns outweigh global considerations, such as sweatshop labor, natural resource exploitation, and the pollution and illness that can result from the manufacture and disposal of these gadgets?

This essay considers the acquisition of technological devices in light of larger ethical debates about environmentalism and human rights, and suggests practical strategies for making ethical decisions. The argument ultimately calls for librarians to practice ethical consumption. An ethical consumer examines the effects of the manufacture, marketing, use, and disposal of specific products on people, cultures, and societies as well as on animals, plants, and the environment, and explores ways to mitigate the harmful effects.

Ethical consumption is a multifaceted movement that encompasses several sometimes-contradictory strategies. These may include, as Jo Littler notes, purchasing products that are "green" or fair trade—in other words, goods that cause little harm to the environment or those for which producers in developing countries receive fair prices. Other strategies might be to join a local food cooperative or to radically reduce or eliminate consumption altogether.[1] Littler divides the actions of ethical consumerism into two basic categories: those that are anti-consumerist and those that are anti-consumption. Anti-consumerist behaviors are characterized by a concern for changing the social or political systems that affect (perhaps dictate) our consumption of goods. Anti-consumption "means simply advocating consuming less, whatever the economic system."[2]

Adopting these definitions, this article advocates for an ethical consumption approach to electronics acquisition. To do so, librarians must carefully weighs the pros and cons of each purchase and, when in doubt, errs on the side of foregoing a new device altogether. As Dave

Hudson says, "A practice of greening libraries must confront the very need for those acts of consumption in which we engage."[3] Fortunately, libraries are, by their nature, already aligned with the principles of ethical consumption. They are explicitly built upon the idea that communities can and should share resources. In most cases, library funding is limited, and librarians must carefully consider potential usage before purchasing an item, just as they choose to repair, rebind, or otherwise preserve print materials rather than repurchase them.[4] Considering the environmental and social justice impact of a particular purchase is a small but important step to add to libraries' already robust practices of responsible resource sharing and preservation.

Sustainability and Social Justice in Library Purchasing

American libraries have long been engaged with environmentalism and sustainability. The "Green Library" movement, already underway in the 1980s, gained steam with the creation of the Task Force on the Environment in 1989, a project of the American Library Association (ALA) Social Responsibilities Round Table, and with the association's 1999–2000 Libraries Build Sustainable Communities initiative.[5] These and other organizational efforts brought attention to the ways in which library buildings, energy consumption, collections, and waste management could be made more sustainable.[6] The work of the Task Force on the Environment was later taken up and expanded by the Sustainability Round Table, an ALA Round Table formed in January 2013.[7] Its mission is to "provide resources for the library community to support sustainability through curriculum development; collections; exhibits; events; advocacy, communication, library buildings and space design."[8]

The mission of the Sustainability Round Table reflects the concerns of much of the literature on green libraries. In an early article on the topic, James LaRue and Suzanne LaRue set a pattern for future publications by highlighting the reduction of paper waste, use of recycled paper, creation of energy-efficient buildings, and abatement of indoor air pollution as major concerns for the green librarian.[9] Many articles published since have described multiple means by which librarians can "go green," including recycling initiatives, energy-reduction methods, public programming, advocacy activities, and the adoption of green cleaning products.[10] This growing commitment to environmental sustainability developed in the context of greater environmental consciousness nationwide. Recent books,[11] magazine and journal special issues,[12] and even an e-course from Library Juice Press on how university librarians can become sustainability leaders signal this ongoing commitment.[13]

With all this activity, librarians have been curiously quiet on the subject of electronic device acquisition, focusing instead on disposal of electronics and associated materials. As far back as 2002, Barbara Beebe called on librarians to become educated about electronic waste, or e-waste, and to ensure that their old electronics are disposed of safely and responsibly.[14] Others have made similar calls to action.[15] In *Public Libraries Going Green*, Kathryn Miller proposes that libraries should not only dispose of their electronics responsibly but also take a leadership role in their communities to build awareness of city and state recycling initiatives.[16] Empirical research into green libraries bears out this emphasis on e-waste recycling. In a 2007 survey of sixty higher education libraries in the United Kingdom, Katherine Dike found that roughly 91 percent of responding libraries said they recycled printer cartridges and over 72 percent recycled computers. On the other hand, only 40 percent "considered energy efficiency among the most

important criteria when buying equipment," indicating less focus on responsible purchases than on conscientious disposal.[17]

The literature also reveals that electronic formats are frequently promoted as environmentally sustainable alternatives to print. In her book on greening public libraries, Miller states that "electronic collections are environmentally friendly," noting that they reduce paper waste and carbon emissions.[18] She further observes that dedicated e-readers constitute "another green reading avenue that public libraries should carefully watch as the technology and access to electronic books advances and improves."[19] Librarians at Duke University Medical Center Library in Durham, North Carolina, were less sanguine about the virtues of electronics, including some guidelines for acquisitions in their ambitious sustainability plan. In it, they pledged to acquire and recycle used computers through a campus-wide sharing program and to buy only ENERGY STAR® compliant electronics, which are certified as energy-efficient by the U.S. Environmental Protection Agency (EPA).[20] Nevertheless, the plan also reflected a bias toward electronic formats, calling for the library to move its print journal subscriptions to digital and to increase its purchasing of e-books[21]—all steps that would necessarily boost the demand for computers and other devices.

Several vocal critics have called into question the assumption that electronic formats are greener than print and should therefore be privileged in acquisitions and collection development. In a 2010–2011 column in *Against the Grain*, Maria A. Jankowska points out that libraries still have not determined whether electronic formats (e-books, e-journals, and the like) are more environmentally sound than their print counterparts. She argues that the profession needs to be more objective, data-driven, and holistic in its sustainability efforts.[22] Karen Christensen and Bill

Siever have a similar perspective, advocating that libraries and the publishing industry look systematically at the environmental costs of e-books, which include energy consumption, raw materials extraction, and e-waste. They observe:

> Today, people are reading books on Kindle and on the iPhone, and libraries are moving faster to online resources and services. As this transition speeds up, the assumptions that technology is benign, that new is better, and that online is cheaper become seriously worrying. We need to be more analytical and skeptical as we enter a new era in information creation and distribution.[23]

Christensen and Siever propose that the publishing industry develop a series of questions that can help them determine the most environmentally responsible format in which to release or purchase a given publication.

But making a more responsible purchase is only one aspect of ethical consumption—one that may actually mask the most environmentally responsible decision of all: the decision not to buy anything. Unsurprisingly, given libraries' core mission to build and maintain collections, one rarely sees calls in the professional literature to limit or curtail purchases for environmental reasons. Yet the proposition is not as outrageous as it may seem. Maria Jankowska and James Marcum observe a contradiction between library sustainability and current practices and assumptions: "The critical challenge that academic libraries face today is the balance between the attributes of core sustainability in today's digital environment with the tradition of continued growth and the substantial environmental consumptions that growth requires."[24] In other words, the authors suggest that it may not be possible to reconcile ongoing growth with the demands of sustainability.

To Dave Hudson, the irreconcilability of these values is an indication of our cultural context. He argues that American consumer culture casts consumerism as the solution to, of all

things, the environmental impacts of excessive consumption. In his essay "Beyond Swag: Reflections on Libraries, Pencils, and the Limits of Green Consumerism," he argues convincingly that librarians should rethink their green behaviors, reorienting them from the purchase of eco-friendly goods to an anti-consumption stance. Hudson frames his argument around "swag"—those inexpensive gifts given out in libraries and at conferences. He points out that green librarians have not foregone such items entirely; they have merely tried to make them less harmful to the environment. This behavior signals our acceptance of the values of our consumer culture. In his words:

> Commitments to civilizational progress and community well-being (be it local, national, or global) are measured chiefly in terms of material accumulation and constant growth; and personal happiness, care for others, and a whole host of other relations are centrally negotiated through shopping within a cultural surround that devalues the old, the slow, and the long-term, while romanticizing the new, the fast, and the immediate—a culture of swag, fears of obsolescence, and constant upgrades.[25]

Hudson asks librarians to think more broadly about actions (or nonactions) they can take in support of environmental and social justice causes, while also calling out the marketing strategies of many consumer electronics companies, which urge new purchases with "constant upgrades" and actual or imagined obsolescence.

If librarians have been slow to consider curtailing their purchases for environmental reasons, they have almost wholly ignored the issue of sweatshop labor in their purchasing practices. In 2008, the American Libraries Association Council passed a "Resolution Concerning ALA Policy Opposing Sweatshop Labor & Supporting Union Businesses," which required that its "divisions, round tables, and all other units should purchase all products for distribution to membership from sweatshop free producers."[26] This resolution, proposed by the Social

Responsibilities Round Table, was followed by a 2008–2009 implementation report that details progress made and challenges encountered.[27] Beyond these actions—aimed at reforming what Dave Hudson calls our "swag"—a search of the *Library and Information Source* database reveals almost no discussion of the possibility that libraries might adapt their collection development practices in light of abusive or unethical working conditions.

One exception to the professional silence on this topic—and more broadly, on the topic of ethical consumption—is Camille Price's 2007 call for teacher librarians to foster ethical consumerism in students. Price highlights the ways young people are indoctrinated into consumerist behavior and the often unhealthy messages about their bodies, gender, and race or ethnicity that advertisers use to lure them into buying products. She also highlights "corporate outsourcing and exploitation of workers in free-trade zones" as matters that might be alleviated through ethical consumerism. Though she advises that librarians "become ethical consumers themselves," the primary means by which she suggests they do so is "through critical literacies and through acquisition policies that prioritise global perspectives and embrace subversive texts."[28]

In some ways, Price's focus on librarians' role as educators is similar to that of Vivien-Elizabeth Zazzau in her article "Becoming Information Literate about Information Technology and the Ethics of Toxic Waste."[29] Zazzau makes a clear and convincing case for librarians' professional responsibility to reduce the amount of e-waste they produce and to ensure that such waste is disposed of safely. She provides helpful advice on how to do so, but her orientation is toward safe disposal (as with Beebe and others mentioned earlier) and student education. Both

are vital concerns, but her article leaves open a place for a reconsideration of how and when librarians purchase electronics in the first place.

Before moving to this argument, this article will present a general overview of the electronic life cycle and its impact on the environment and human rights. A full picture of this life cycle is essential to assess the ethics of consumer behaviors.

The Electronic Life Cycle and the Impacts of Consumption

As consumers of electronics, it is easy to believe that the life of a device begins with purchase or delivery and ends with disposal. This is true of many consumer products, and for good reason: consumer behavior might be different if we understood the full life cycle of the products we buy. Indeed, understanding these facts is crucial to practicing ethical consumption.

At the beginning of the electronics supply chain are raw materials, including minerals such as gold, tin, copper, nickel, and lead. In an introduction to a special issue of *Virginia Quarterly Review*, Ted Genoways notes that these metals are often mined in "economically depressed countries where miners work under dangerous conditions, use environmentally devastating methods, and toil for the benefit of dictators and military strongmen."[30] Indeed, in 2010 the world was riveted by the plight of thirty-three Chilean men who were trapped for sixty-nine days after a collapse at the copper and gold mine where they worked. The Chilean government had shut down this mine for safety violations twice in the previous four years.[31] In the Democratic Republic of the Congo (DRC), the country's mineral deposits became tied up in the vicious war that has raged there since the early 1990s. Profits from mining minerals-- including columbite-tantalite (also called coltan), which is used in the manufacture of electronic

products--have gone to fund the various militias that ravaged the eastern portion of the country.[32] With passage of the Dodd-Frank Act in 2010, named for Senator Chris Dodd and Representative Barney Frank, the United States took steps to address the problem of "conflict minerals" in the DRC by requiring greater supply-chain accountability. Unfortunately, many feel the law has done more harm than good by halting mining operations, stagnating the local economy, creating a black market for minerals, and forcing unemployed miners into militias.[33]

Copper wires and gold circuit boards are assembled into electronic devices in factories that, as the events of the past several years have reminded us, hold to different labor rights standards than those of the United States. Starting in 2010, a series of revelations about working conditions in Chinese factories owned by the manufacturer Foxconn sparked outrage with Apple and other electronics companies. Employees in Foxconn's factories worked well over the legal limit of overtime, sometimes laboring for as many as thirteen consecutive days, and received the equivalent of about one dollar per hour.[34] These abuses, which were blamed for a spate of suicides at the factory, were followed in 2011 by an explosion at a Foxconn factory that killed two workers and injured sixteen.[35] Since that time, under immense public pressure, Apple and other electronics companies have taken steps to promote fair wages and to improve conditions at the factories that build their products.

Similar cycles of abuse, protest, and corporate response have occurred in the apparel industry for over twenty years. The United Students Against Sweatshops movement of the late 1990s and early 2000s spurred the creation of the Fair Labor Association, a corporate-sponsored nonprofit that sets standards and inspects apparel manufacturers in developing countries.[36] Yet November 2012 brought news of a fire in a Bangladesh sweatshop that killed 112. Five months

later, in April 2013, a building collapsed in that country killing over 1,100 people, many of them garment workers.[37] The causes of this resistance to reform are most likely myriad—including the inadequacy of corporate oversight of supply chains and the grim economics of globalization—but these incidents should give pause to anyone inclined to suppose that the response of electronics manufacturers to the Foxconn revelations will prevent future abuses and tragedies. Indeed, a 2014 report by the British Broadcasting Corporation revealed that even Apple, which has taken a publicly strong stance toward worker rights and supply chain management, continues to struggle to ensure fair and safe working conditions in factories and to clear its supply chain of illegally mined minerals.[38]

The manufacture of electronic devices also involves the use of toxic materials that are environmental and health hazards. In an article in *PC World*, Lincoln Spector highlights many of these dangerous substances, including brominated flame retardants, which cause birth defects; polyvinyl chloride, a carcinogen; phthalates, which are linked to birth defects and asthma; beryllium, which can cause cancer as well as chronic beryllium disease; and cadmium, which is linked to lung cancer and liver and kidney damage.[39] These substances are dangerous to factory workers, and they are also of serious concern at the end of a product's life cycle. The EPA estimates that in 2012, 29 percent of end-of-life electronics were collected for recycling,[40] while in 2009 only 38 percent of computers, 18 percent of TVs, and 8 percent of cell phones were recycled.[41] The rest were disposed of, primarily in landfills, where hazardous chemicals can enter the ground water and damage public health and the environment. Greenpeace has met with success in pressuring manufacturers, notably Apple, to eliminate polyvinyl chloride and brominated flame retardants from their products. However, these and other hazardous chemicals

are still common in personal computers, monitors, televisions, power adapters and cords, and peripherals.[42]

Recycling, however, is not a panacea to the e-waste problem. Greenpeace has noted that electronics are often recycled in developing countries, using methods that may endanger the health of workers.[43] This is true in India, for example, where a 2015 study by the Associated Chambers of Commerce and Industry of India revealed that some 76 percent of e-waste workers in India experienced respiratory problems related to improper recycling techniques.[44] The Blacksmith Institute (now called Pure Earth) and Green Cross Switzerland, two international nonprofits dedicated to ending environmental pollution, released a larger-sale study in 2013. They found that an e-waste dump in Ghana called Agbobloshie was the "place which poses the highest toxic threat to human life."[45] The problem of e-waste is pernicious and difficult to combat. A report from the StEP (Solving the E-Waste Problem) Initiative, a program of United Nations University, has revealed the complex ways e-waste is collected, sold, and repeatedly resold. It is shipped from one country to the next, where different components are recycled in markets and facilities that vary greatly in terms of safety for workers and the environment. The StEP report emphasizes the nuances of these global relationships, highlighting the fact that e-waste has value to those involved in its recycling, including the individuals whose health may suffer as a result of their working conditions.[46] As in the case of sweatshops, the situation is complex, but the real harm to workers' bodies and lives makes the ethics of e-waste an issue with both environmental and social justice implications.

E-waste becomes an even greater challenge when one considers the shortened lifespan of so many innovative devices. Electronics companies utilize a strategy known as planned

obsolescence, in which a product's design spurs consumers to replace it at a rate faster than is

necessary. Planned obsolescence was first practiced in the 1920s, when the General Motors

Corporation began releasing new model vehicles every year.[47] Joseph Guiltinan has shown how

obsolescence may result from several factors, including planned functional failure and the

release of upgraded models with additional features.[48] Both factors are at work in today's

devices. As has been frequently noted, the batteries in Apple's iPods and iPhones are notoriously

hard to replace and seem to be designed to fail after a certain number of charges. Meanwhile,

each successive model includes flashy upgrades such as the pixel-dense Retina display, which

makes text and pictures extremely sharp, or fingerprint recognition to control access to the

gadgets.[49] Considering the environmental impact and human rights issues surrounding the

manufacture and disposal of these devices, a business model based on planned obsolescence

should be factored into an examination of the ethics of our purchasing decisions.

In fact, Guiltinan places some of the blame for planned obsolescence on consumer

behavior, pointing out that such factors as durability and environmental impact scarcely affect

purchasing habits. He suggests that "consumers may also act unethically when they add to the

public burden with what some might consider frivolous, self-serving replacement behavior."[50]

The tension between corporate irresponsibility and the complicity of individual consumers in

corporate business practices runs throughout the literature on ethical consumption. Though some

may argue that ethical consumption places too much burden on the individual and too little on

corporations, ultimately all parties in these transactions—consumers and manufacturers—have a

responsibility to behave as ethically as possible. The following section will propose one

framework for determining what might be an ethical consumer action.

Ethics and Consumption: A Challenge for Libraries

The previous discussion might leave a reader feeling overwhelmed and helpless in the face of what seem like intractable circumstances. What is the solution? Should we give up our devices entirely? If so, how do we function in a society that has grown more and more dependent on electronics? And what good does one fewer iPad make in a world with millions of them? In other words, can one library—or more likely, *one librarian*—really make a difference?

In addition, many of the issues addressed in the previous section raise ethical quandaries of their own and may well leave the reader wondering what is right and what is wrong. For example, Nicholas Kristof has defended sweatshops on the grounds that they bring jobs to regions and countries suffering from extreme poverty. His argument is that sweatshop labor improves the lives of most workers and is therefore an overall good.[51] If we accept this point of view, we still need to measure this potential good against the problem of e-waste and natural resource exploitation. Which should take priority?

Ethical consumption provides a framework by which librarians can assess these conundrums. While librarians may (or may not) feel intuitively that reducing consumption of electronics is right and good, it is useful to establish a rationale for such beliefs. In posing the question in terms of ethics—a philosophical inquiry into the best way to live a life or to construct a society—individuals can find criteria by which to determine a course of action that accords with their values. This is especially crucial for librarians, who will likely find themselves considering the purchase of electronic devices with the potential to bring real benefits to their communities. For example, librarians at Lehman College in New York City began lending Sony readers in 2009 to provide access to e-books for students at their urban, public college.[52]

Assuming a device is capable of relieving injustice by providing opportunities to underserved communities, are we still as instinctively certain that reducing this consumption is right and good? A philosophical framework can help us work through these complications and defend our position to ourselves and to others.

As David T. Schwartz cogently explains in *Consuming Choices: Ethics in a Global Consumer Age*, there are two primary ways that philosophers have approached the question of consumer ethics: from a deontological perspective and from a consequentialist perspective.[53] Deontological approaches assume that there are universal rules that we must discover and follow to lead just lives. For example, one of these rules, formulated by Immanuel Kant and summarized here by Schwartz, is that "persons have a dignity beyond all price and may never be treated as a *mere* means to satisfying one's desires."[54] By this measure, a manufacturing practice that violates the dignity of other human beings—perhaps by reducing their existence to long hours of repetitive work that endangers their bodies and degrades their emotional well-being—is inherently unethical no matter what product is being made or what quality of life of the workers experienced before they were employed.

Consequentialism, on the other hand, proposes that the justness of actions is entirely based on the outcomes of those actions. The goal of a consequentialist is to maximize overall good (or pleasure) and minimize overall bad (or pain). When faced with a question of the ethics of sweatshop labor, a consequentialist might try to determine the extent of the suffering endured by workers in such factories and the degree of pleasure or good produced by the product being made. If the product is, say, a medication that reverses the effects of Alzheimer's disease, there would be a high potential for such a product to reduce suffering. As a result, poor working

conditions in a factory producing such a drug might be more defensible than the same conditions in a factory that produces luxury handbags.

Because not all negative outcomes are of equal severity, philosophers have classified them into at least four categories. Again, drawing from Schwartz, these categories, ranked in order of decreasing moral seriousness, can be called (1) harm to others, (2) injustice, (3) bad outcomes, and (4) moral offense.[55] Each category can be defined precisely, but a sketchy summary will suffice for our purposes. Causing harm to another person involves impeding another person's ability to pursue his or her ends. This is much more serious than hurt feelings or temporary inconvenience. Likewise, for something to be an injustice it must be more than just unfair—it must violate "society's fundamental sense of fairness."[56] Bad outcomes are clearly negative but may not rise to the level of harm or injustice, while moral offense is an objectionable result that does not produce any clear, provable bad outcome. An action that results in harm or injustice should be deemed highly unethical, but a consequentialist might consider an action that results in moral offense to be defensible on the grounds of additional good outcomes.

Philosophers continue to debate the relative merits of the deontological and consequentialist frameworks, but a consequentialist approach will likely prove most practical in a library context. Librarians need flexibility to balance the demands of their communities with their responsibilities to other human beings and to the environment. They also need a system that can be clearly and easily defended by those not skilled in complex philosophical reasoning. And they need a system that can adapt to the individual political positions of librarians throughout our diverse country and that they can justify on the basis of immediate, measurable criteria. In such

contexts, consequentialism may be more likely to win support than deontology, with its rigid definitions of right and wrong actions.

Finally, and perhaps most importantly, consequentialism in many ways respects the expertise of library professionals. This is why the next section presents not a prescriptive list of rules to which librarians should adhere but a guide that asks librarians to evaluate for themselves the pros and cons of an electronic device and to consider whether the potential good is enough to justify the possible harm.

A Guide to Ethical Electronic Device Acquisition

An ethical consumption approach to electronic device acquisition—one that is founded in consequentialism—requires a careful review of the potential good and bad outcomes of a particular action. However, librarians are not without agency as regards the good outcome of a particular purchase. Indeed, we can maximize good outcomes through careful planning and thoughtful consideration.

One way to increase potential good outcomes is to be clear about your goals. Defining goals early in the process helps you and your colleagues determine whether a device can make a significant and meaningful contribution to your work and services, or whether that contribution could be made just as effectively in another way. Once devices are purchased, keep the goals front and center; they can provide focus and forward momentum to an initiative and can help ensure devices are used to real benefit for as long as possible. Further, goals give you a way to measure success. Without them, you cannot assess the value of the device to your library or your patrons and apply such discoveries to future purchasing decisions.

Setting goals is only one step toward maximizing good outcomes; another is doing the research required to justify your belief that those goals can be achieved. Electronics companies and gadget enthusiasts make many claims about the benefits of technology, and our culture has embraced the notion that technological "innovation" is necessarily "advancement." It is crucial to separate the hype from the facts about a device or technology by doing a thorough review of the literature in library, technology, education, and other relevant fields. Carefully review the articles you find, evaluating the research methods, results, and discussion. Consider whether these studies are relevant to your circumstances or goals. Is a positive research outcome likely to be replicated in your environment?

Once you have established to your satisfaction that a particular device has the potential to help you achieve your goals, consider your patrons and their needs. Remember that a consequentialist wishes to maximize good outcomes. If you serve a population with special needs, such as the elderly or mentally ill, or if you work in an economically or socially disadvantaged community, you may have a greater ethical justification for purchasing devices than those who serve other, more privileged communities. On the other hand, if your audience is impoverished, they may have other, greater needs than those that would be served by the electronic device. You may wish to conduct a survey of your patrons or hold interviews or focus groups to determine their needs and to gauge interest and potential usage.

Making determinations about potential usage before you have purchased an item is admittedly difficult, but measuring actual usage is much less so. Since many electronic devices have short usable lifespans, chances are good that you and your colleagues will be discussing replacement purchases in a year or two. Bringing usage statistics and other assessment data to

such discussions will greatly inform these decisions. Remember that assessment need not be a purely quantitative effort. A mix of quantitative and qualitative measures will likely be advantageous to future decision-making. You may wish to collect statistics on loans, usage, and door count or attendance at related events; conduct user surveys, focus groups, fieldwork, or observations; and assess learning outcomes.

Assessment is always a double-edged sword; it may reveal troubling realities about the usage of an electronic device. To maximize the potential for good, you may wish to make contingency plans if the devices are not used, including increased marketing and educational efforts. Perhaps more perplexing are those situations in which devices are used in ways you or your colleagues find frivolous or offensive. Rather than using an iPad to read textbooks or do job research, patrons may idly peruse Facebook, play Candy Crush, or consume pornography. Asking yourselves up front whether you will make judgments about this kind of usage and how you will act on those judgements can help you respond in a productive way.

So far, we have dealt with ways to assess and perhaps maximize the good outcomes of a new electronic device. The flip side of the coin is the need to evaluate and minimize the bad outcomes of the same action. To begin, try to measure the environmental impact of the device. This can be difficult, but there are tools and resources available that can help, including consumer guides such as the EPEAT (Electronic Product Environmental Assessment Tool) Registry (http://www.epeat.net/), Greenpeace's "Guide to Greener Electronics" (http://www.greenpeace.org/international/en/campaigns/climate-change/cool-it/Campaign-analysis/Guide-to-Greener-Electronics/), and Greenpeace's "Green Gadgets: Designing the

Future" (http://www.greenpeace.org/international/en/campaigns/detox/electronics/Guide-to-Greener-Electronics/Green-Gadgets/).

Since there is no perfectly "green" electronic device, you will likely always have to accept that some harm to the environment is caused by your electronics purchase. Proper recycling can mitigate some of that harm. If you or your library is responsible for recycling your electronics, try to find a recycler that is certified by e-Stewards (http://e-stewards.org/) or Sustainable Electronics Recycling International (http://www.sustainableelectronics.org/), two independent organizations that set standards and audit recyclers.[57] Retailers such as Best Buy also accept devices for recycling, as do many manufacturers. The EPA maintains a list that you can consult as you plan (http://www2.epa.gov/recycle/electronics-donation-and-recycling), and company websites may supplement this information. You may also wish to review your state and local e-waste laws and determine what resources are available for recycling through government means. If you are not responsible for disposing of your own electronics, contact your campus or organization's sustainability officers or your buildings and grounds department to discuss conscientious end-of-life options.

A device may be manufactured and recycled responsibly, but if its projected lifespan is brief, that should weigh against it in your ethical assessment. Of course, manufacturers and marketing executives will not tell you a device's expected lifespan, but there are ways to make an educated guess. Was the device released to a great deal of media frenzy and marketing hype? Does it seem to be a "first generation" device, soon to be superseded by an improved "next gen" version? Or is it one in a long line of iterations (iPhone 6, Kindle Paperwhite, and the like)? These are signs that planned obsolescence is at work. You may also wish to learn about the

quality of the manufacturing and materials by reading reviews and consumer guides to discover whether a device breaks down under sustained use.

Just as it is difficult to deduce when planned obsolescence is at play, determining the working conditions of those who provided the materials for a device and those who assembled its many components is nearly impossible for the average consumer. The consumer guides mentioned earlier can help, as can news reports from major outlets and alternative presses. The United Kingdom-based advocacy organization Ethical Consumer maintains ratings on electronics manufacturers that include evaluation of supply-chain management (http://www.ethicalconsumer.org/buyersguides/computing.aspx). So does the affiliated and partially subscription-based site Corporate Critic (http://www.corporatecritic.org/).

Once you have assessed the potential good and bad outcomes of purchasing a particular device, you will probably have an intuitive sense of whether you feel justified in buying it. However, it may still be useful to categorize the specific negative outcomes you have identified into the categories discussed in the "Ethics and Consumption" section of this article. If one of the bad outcomes associated with a device falls into the category of "harm to others"—for example, if a manufacturing process requires exposure to chemicals that cause birth defects—you may decide to weigh it more heavily in your ethical evaluation. Likewise, if a factory dismisses employees who attempt to organize for worker's rights, you might consider that an injustice and a serious ethical problem. On the other hand, if an outcome only results in offending your personal moral beliefs—say, if the owner of a company holds political views you find objectionable—you may conclude that this is a minor problem from an ethical standpoint.

Strictly speaking, to evaluate the ethics of a given action, one needs to take into account only the effects of that action. Nevertheless, there are many ways librarians can work to create good outcomes related to these issues. Vivien-Elizabeth Zazzau makes a number of particularly helpful recommendations for how academic librarians can become more knowledgeable about e-waste and can promote such knowledge on their campuses and with their students. Among other things, she suggests checking into state and local e-waste laws and recycling programs, teaming with campus sustainability leaders, and investigating the manufacturing and recycling practices of major companies.[58] Librarians could use their decision-making process as a means of educating students by creating a student interest survey that includes details about the environmental and human rights implications of the device in question, or by organizing formal debates, panel discussions, or lecture series on ethical consumerism or environmentalism. Librarians might also become advocates within the profession, perhaps by joining ALA's Sustainability Round Table or Social Responsibilities Round Table.

Conclusions

Through honest and thorough evaluation of the questions presented earlier, librarians should arrive at a determination about the ethical implications of whatever electronic device they wish to purchase. They may choose to curtail a purchase altogether; to purchase a few devices and test success; or to move ahead with high-volume purchasing. The key to ethical consumption is not that you never buy anything, but rather that you are informed about a particular consumer behavior and have evaluated its impact. Being informed is not easy, nor is it without nuance. Ethical consumption is in many ways simpler for individuals: people know and understand their

own needs and can take responsibility for their own behavior. But acting ethically in a service position is necessarily complex, and librarians may find themselves defending an action (or inaction) to patrons or administrators. Doing the difficult work of evaluating the ethics, through the questions listed earlier or other questions you develop for yourself, can help you respond to these criticisms.

Ultimately, these decisions will depend on your institutional context—your community's needs, your resources, and your personal and collective values—and on the nature of the technology. An approach based on ethical consumption may result in fewer purchases, but those you make will likely be more meaningful, and you may find your approach to other consumption behaviors is also changed for the better. Though this article has focused on electronic devices, the same framework could be applied to a wide range of activities, including building and space renovations, instructional technology and classroom upgrades, furniture and decor replacement, and even book and supply purchases, all of which create waste and pollution and many of which rely on questionable labor practices. Practicing ethical consumption can be one additional step in our profession's history of sustainability and social justice advocacy.

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