



Development guidelines for circulating technology collections

Scott Rice & Wil Cummings

To cite this article: Scott Rice & Wil Cummings (2020) Development guidelines for circulating technology collections, *College & Undergraduate Libraries*, 27:2-4, 56-74, DOI: [10.1080/10691316.2021.1921089](https://doi.org/10.1080/10691316.2021.1921089)

To link to this article: <https://doi.org/10.1080/10691316.2021.1921089>



Published online: 11 Oct 2021.



Submit your article to this journal [↗](#)



Article views: 97



View related articles [↗](#)



View Crossmark data [↗](#)



Development guidelines for circulating technology collections

Scott Rice and Wil Cummings

Belk Library and Information Commons, Appalachian State University, Boone,
North Carolina, USA

ABSTRACT

Belk Library and Information Commons at Appalachian State University began circulating technology in the early 2000s with a small set of laptops and MacBooks. This collection was augmented with the addition of approximately two dozen video and still cameras in 2006 and by 2019, the technology collection for circulation had grown to 550 devices composed of 33 types, including laptops, tablets, audio and video recorders, DSLR cameras, and headphones. Over this time, the team developed a set of guidelines to govern the development of the collection. The team developed some policies that follow traditional collection development guidelines, but many are unique to the challenges required to maintaining a useful and functioning circulation collection of technology equipment.

KEYWORDS

Technology lending; public services; collection development; technology collections; technology policies

Introduction

Belk Library and Information Commons (BLIC) at Appalachian State University began circulating technology in the early 2000s with a small laptop and MacBook collection, created to provide students a mobile option for classes and assignments. The laptops provide the base campus software package present in computer labs, which included SPSS, Food Processing software, and Adobe Creative Cloud. In the early stage of laptop checkout, there were 10 – 15 laptops which expanded to nearly 175 machines during the following ten years.

The BLIC opened the Digital Media Studio (DMS) in early 2006 and began audiovisual (AV) equipment checkout that fall to support multimedia assignments. Faculty and students requested that the library have equipment available for students to create audio and video recordings. Checkout in the DMS began with approximately two dozen devices, including a few camcorders, point and shoot cameras, and audio recorders. The plan was to offer equipment and support the creation process from the

beginning to the completion of the project. Students could check out a camera and then get editing help in the same location upon return. Checkout of devices increased from a few dozen checkouts a semester at its inception to increasingly lengthy periods of device scarcity during the latter half of each semester, despite increasing the number of devices on a regular basis. Student occupancy increased from an average of a few dozen students a week in its first semester to thousands of visits per month. The team nearly doubled the number of workstations in the space but these additions could not keep pace with demand. The DMS, as measured in checkouts and occupancy, became a success.

Both collections also faced several challenges. The laptop checkout, which was expanded to include iPad and Kindle checkout around 2010, often suffered from workflow issues surrounding maintenance and troubleshooting. Machines would often sit idle for multiple days which required little more than a restart. Communication issues with the Technology Services team and a perception that basic maintenance and troubleshooting was not part of the job of circulation staff compounded this issue. In addition, due to their high circulation numbers, circulation staff felt that they spent too much time checking in/out the devices, time which could be better spent on longer interactions with patrons and more developed response to reference inquiries.

The collection of devices in the DMS also ran into several problems. At the time, the DMS was a limited service, both in terms of available hours and space. Because of its limited opening hours, students were often frustrated with checking in or out devices at times when they were in the library. The limited space meant that sometimes the DMS would be closed to walk-ins to provide a teaching space for classes interested in digital media. Closing the space, often during prime hours, led to further frustration among students.

As both collections had identified potential problems with their operations, the Technology Services team saw an opportunity in 2013 when the multiple circulation and reference desks were consolidated into one service point. The team proposed to repurpose one of these spaces as the Technology Checkout Desk, which would handle both the multimedia devices of the DMS, and the laptops and tablets from the circulation desk. This new desk was opened in January 2014 and it is managed by the Technology Services team. The combination of the two services provided a one-stop location for library technology checkout and device support and maintenance.

Over the next five years, the Technology Checkout Desk service saw many changes and adjustments. For the first two years of its existence, the service was managed by two to three staff members who could only devote

a portion of their time to its operation. Once it was clear to library administration that the service point would be successful as measured by checkout statistics, the team was able to successfully advocate for a new staff position to serve as full time service point manager. The desk is currently staffed by one full time staff position, two part time positions and anywhere from 12 to 20 student employees. It also took some time to develop policies and workflows related to purchasing, collection development, and maintenance. The adjustments and changes made over this period have proved successful. The Technology Checkout Desk had over 45,000 checkouts in the latest academic year, which represented 42% of the entire library's non-renewal circulation transactions, including all service desks and special collections. The desk has also acted as an anchor for developing multiple technology related spaces on the floor, including the Digital Media Studio, which was moved and expanded, and the creation of an Audio Recording Room and Video Recording Room. The current environment allows a student to check out a piece of equipment or use one of the recording rooms, then bring the recording to the DMS to edit and polish it, all with the assistance of knowledgeable staff and student employees in one area of the library. On this same floor, technology workshops are available to individuals and classes to provide training in the hardware and software available in the library.

The current technology collection consists of approximately 500 devices that are organized into 10 categories and consists of 37 types of devices. The exact number of items fluctuates considerably throughout the year due to constant attrition of devices, absence of devices that require some maintenance or troubleshooting, and multiple purchasing periods. The core of the collection continues to be the laptops, MacBooks, and Chromebooks, which account for 155 devices, or 32% of the collection. The Appendix contains a complete list of the equipment available for checkout.

Literature review

The research literature on circulating technology collections is limited with much of the research concentrating on the experiences of libraries starting up and maintaining circulating laptop collections (Atlas, Garza, and Hinshaw 2007; Dodd and Drennan 2007; Feldmann, Wess, and Moothart 2008; Holden and Deng 2005; Munson and Malia 2008; Power 2008; Sharpe 2009; Vaughn and Burnes 2002, among many others). Wood, Melita, and Wildman (2004) describe setting up a circulating digital media equipment collection. Thompson (2011) offers guidelines for success in creating a circulating iPad collection. Very few articles describe the

development of a substantial technology collection, which covers the gamut from laptops to digital media equipment to smaller devices and accessories.

In detailing their experiences setting up a collection at the University of Illinois at Urbana-Champaign, Hahn et al. (2011) also note the paucity of relevant literature to circulating technology collections. Hahn et al. describe how they assessed the need for a loanable technology collection through surveys, focus groups, and interviews. They provide a list of the types of technology devices they began their service with and provide some usage statistics, as well as delve into some of the details of cataloging, circulation, and assessment. Cross and Tucci (2017) detail their experience setting up a technology collection as a collaboration between three on-campus units including the library. They provide some of the same information as Hahn et al., such as the type of equipment they selected, usage statistics, and challenges encountered. Anderson and Weatherbee (2012) also discuss some of the basics of beginning a technology equipment service. They include brief information on the types of devices they circulate, circulation periods, fines, and maintenance. However, they do not go into depth about the considerations needed to adequately grow a large collection of devices, or the differences between technology checkout and traditional checkout. Jensen (2008) discusses the setup of an equipment lending program at the University of Alaska and includes the results of a patron satisfaction survey. Jensen has a brief section about selection, but mainly includes information about circulation policies and procedures.

Differences in technology checkout

Technology checkout differs from the typical checkouts at a circulation desk in several ways, many of which affect collection decisions. Regular checkout of books in an academic library involves a massive collection of items and an individual item may see no checkouts in a single year, or it may see dozens of checkouts if it is a high-demand reserve item set aside for a class. Technology checkout is the inverse of this, with a much smaller number of items that get checked out much more frequently.

Another difference between a typical checkout and a technology checkout is that it is a more mediated service. Patrons often are not sure which device will meet their needs best, especially when it comes to digital cameras. A reference interview is often necessary to match the right technology to the patron's needs. In addition, many if not most of the desk's checkout transactions are not as simple as the basic book checkout. Usually there are one or more accessories that need to accompany the device, such as a power cable or an SD card.

With technology checkout there is also a need for additional awareness of privacy concerns. Traditional checkout is typically concerned with keeping confidential the content the material checked out. Information about what is checked out by a patron is kept confidential at the Technology Checkout Desk as well, but there is also a need to be aware of the presence of the patron's own personally created content. Patrons rarely leave photos or files in the books they return, but frequently will leave them in the digital cameras or laptops they return to the Technology Checkout Desk. The laptops use the same method of account management that the campus uses for its desktop computers and individuals are unable to see any files left on the laptop by a previous user. However, the files are still on the device and could be accessed by a determined individual. There is a low risk of this occurring, but the devices are purged of user profiles periodically in order to reduce the threat. This also serves to conserve space on the device which would otherwise eventually slow its operation. Non-laptop devices can bring additional challenges and students often return devices, such as digital cameras, with content still on their SD cards. Student employees are trained to remove used SD cards during check-in of digital cameras and provide a blank SD card prior to checkout. Used SD cards are put in a separate pile for students to re-format the card when there is a slowdown at the desk.

One not so surprising aspect of digital equipment checkout is that items do not age well. The equipment bought for the desk is mostly consumer-grade items made to be used on an occasional basis. After several hundred checkouts, equipment begins to fail from excessive use. Unlike books, the shelf life for most equipment is 3–4 years at maximum. Therefore, planning for replacements is a key factor in maintaining digital equipment checkout. It is necessary to plan for an approximately 30% attrition in equipment each year.

Besides replacements, there is a certain amount of loss due to patrons losing items. Print materials are sometimes kept by patrons, but in technology checkout this attrition can vary widely for different devices. Calculators have a high rate of loss, as they have a lower price and their functions are not typically replaceable. A student can use a calculator on their math exam, but not their phone or laptop. This rate of loss can be high enough to require replenishing most of the collection each year. The patron, usually a student, decides that they need the item on a more long-term basis and weighs the cost of simply paying the replacement fee versus finding and getting the item themselves. For these reasons, as well as the general usefulness of most technology equipment and the size of the collection, the loss ratio is much higher than it would be for a typical book collection. However, the upside is that there are usually more of each type of device

to still be checked out, whereas in a general collection the loss of a book means no one will have access to that content.

Another difference between a regular circulating collection and a technology collection is the certainty of obsolescence. Most books have a life expectancy in terms of their content being relevant ranging from a few years for software books to decades or never with classic works in the humanities. With technology collections, even the most durable and useful of items have an extremely limited shelf life. As technology changes over the lifespan of a device in the collection, the plan is to upgrade items to newer technology when appropriate. For example, mini-DV tapes became obsolete because cameras could save directly to a digital format. This advance eliminated the need for tapes, tape decks, and real-time importing of files.

The actual circulation of devices is typically a more complicated process than the average book checkout. A Technology Checkout Desk student, once they have identified the actual device a patron needs, must then ensure that all the accessories are there, provide a reformatted, empty SD card, and power cables if necessary. Other equipment will require additional steps. For example, if a laptop is checked out, staff inform the patron they will need to log into the device on campus so that the first login will download the appropriate permissions and access for the user; this will ensure access to the device when the student is off campus. Check-in is similarly not a simple process because there is not a mass check-in workflow like many circulation departments do for a traditional collection. Check-in involves making sure all the pieces and parts are there, and that nothing is obviously broken. If an SD card is in the device, it needs to be removed and added to the pile of cards to be reformatted and wiped for the next patron's use.

Students who staff the Technology Checkout Desk are also trained to provide support for the Digital Media Studio, and the Audio and Video Recording Rooms. Because of this setup, the students can provide a better service to potential borrowers and make a more accurate match of need to equipment. However, this also means that there are additional time and service demands on the staff of the desk. The result is that the Technology Checkout Desk is a very high-volume service and quite a hive of activity during peak times, which has implications for the amount and type of devices provided for checkout.

Selection criteria

Many of the principles of managing a technology collection are similar to the curation of a traditional collection of print volumes. Selection criteria

for titles include fitting into the curriculum, affordable pricing, the number of volumes already collected in that subject area, and seminal works. Translated to a technology collection, seminal works are those pieces of equipment that a reasonable patron would expect to be provided, such as laptops or digital cameras.

The manner of selection is also similar. Learning about new items requires talking with vendors, attending conferences, practicing environmental scanning, and receiving recommendations from students and faculty. Narrowing down the range of items of a specific type, such as selecting one brand of digital camera out of many, would typically rely on word of mouth, user reviews, and depending on the item, the purchase of evaluation devices. Getting one or two devices for testing is a common strategy that the desk uses to assess the fitness of a particular item for addition to the collection.

One helpful aspect of technology collection development is that there are often reviews in places like YouTube, where you can see a video in which someone handles the device, points out its features, and often will show you the results of its use, such as footage shot with the camera. This often obviates the need for actually possessing the item to assess its suitability. Technology devices can still surprise you, however. More than one item was not selected for circulation because after it was purchased and a couple trial runs were completed, it was determined there were proprietary cables, accessories or software which would restrict its use. The test of one 360-degree digital camera revealed that the software, while free, could be used only after downloading special software and receiving a code key to unlock its use. This led to the purchase of one of its competitor products after learning its software could be easily downloaded and installed anywhere, as it was not a necessary component to use the device.

Many aspects of traditional collection development selection criteria have their own special twist when applied to technology collections. The current list of criteria in use when evaluating any new products for addition to the collection include suitability with the curriculum and user requests, price, ease of use, software/file formats, accessories, batteries, support/training needs, and durability/manageability of the device. This is not an exhaustive list because of the ever-evolving nature of technology. Often each new type of device will pose some additional challenge or consideration that previous technology did not, and the team will have to work out how best to fit it into the collection and service environment.

Suitability to curriculum

The addition of new equipment is driven by university patrons (students, staff, and faculty).

The main consideration with any new piece of equipment is how it will be used, either for coursework, to support students in doing coursework, or its fit with faculty research needs.

Students will make requests at the Technology Checkout Desk for a full range of devices, from useful accessories to the newest virtual reality headset. Faculty will often require specific equipment for classes that students may not be able to afford or may not want to purchase for a single class. An example of this would be scientific calculators. Since many students have smartphones with calculators on them, they are less willing to purchase an extra device, especially if this device is only needed for one course. Faculty and student requests are tracked by Technology Checkout Desk assistants who advise on purchases for the next budget cycle.

Student input was valuable and led to the addition of accessories, such as devices like power cables for laptops, HDMI adapters, and USB-C cables. These are generally small, somewhat inexpensive items that fit into the convenience item category and have proven to be popular with students.

User requests

User requests, whether student or faculty, are typically the start of the process. Depending on the typical price of an item, a trial number of devices might be purchased after only a couple of requests have been made. An expensive item might require a larger number of requests before consideration. Student employees also provide valuable feedback on the usefulness of an item, as they represent a variety of backgrounds and majors. No hard and fast rules govern the process but the team has adopted a predisposition to inclusion of a device where possible. Once the decision to add new equipment or replace EOL (end of life) equipment has been made, the next step is to find the best fit for checkout. Several factors come into play when choosing new equipment.

Price

Price is a large consideration for public checkout not only for library budgetary reasons, but also because students are responsible for the equipment fines if it is lost or severely damaged. When new items are purchased, it is typical to order an average of ten at a time to provide enough for actual circulation. The costs of these items can create a limitation on the choices that can be made in a specific category. An example would be digital camcorders. There are many options above the five-hundred-dollar range that would meet all other selection criteria but the cost is prohibitive. Therefore, the decision is made to purchase a device for less than five

hundred dollars that may not meet all selection criteria. Where possible, the team attempts to select items that impose a smaller financial burden on students who may lose or damage the items. But there is also a need to hit a price range that provides a suitable number of features and durability.

The selection of the necessary features in the purchased device is more often art than science. This is simply because one cannot typically anticipate all the ways in which students or faculty may want to use the equipment, and often they come up with surprising uses. The team tries to incorporate this information into the next round of buying equipment of its type. The team tries to select items with a balance between number of features and price, while attempting to cover all the necessary options for the equipment.

Ease of use

Related to these considerations about features is the ease of use. The majority of patrons who check out cameras and camcorders are novices. Many have never created a video or created a photograph for multimedia editing, beyond what simple applications are available on their smartphones. This is a major consideration when choosing equipment. How many buttons does it have? Does it offer too many confusing options? Could an average user pick it up and shoot a video without instruction? This can often mean not selecting an item that is not intuitively obvious for the average user. Ease of use not only impacts the users but the student employees tasked to support the device as well. Students are trained to staff the desk with a certain level of capability with the devices, but whether they can pass that information on is typically up to the end user. Many students do not consider whether they can actually use the device they have just checked out until they have gotten it home and are trying to figure it out. By this point, it is too late to show them how to do so, because students (and faculty) rarely come back to learn about the device.

Software/file formats

For some equipment like camcorders, file format is a consideration. Producing a high-quality file and a compressed file format is a desirable feature in a digital camera. Most users only want a compressed MP4 format for programs like iMovie. A few prefer the AVCHD for editing in Adobe Premiere without losing image quality. If the equipment does not offer standard formats or it requires proprietary software to run, then it is not considered for purchase. The goal is to meet the needs of thousands of patrons so flexibility in file formats is crucial to checkout. When

considering equipment with cutting edge capabilities such as 360-degree cameras, it becomes important to determine if proprietary software is necessary to make use of the device. If there is proprietary software, is it freely available?

Accessories

An often-overlooked item for equipment checkout is accessories. Accessories can include items such as the student requested accessories mentioned above but can also consist of any extra items a manufacturer includes with the device, such as a case, cleaning cloth, or additional lenses. Some questions to ask about these accessories are: does it require a proprietary cable to connect? Will it function if pieces are lost? Are they easily replaced if damaged/lost? Are the accessories even needed when checking out the device? Over the years the observation has been that if an accessory or cable can be lost, it will be lost. The fewer items that are essential to the device operation the better. An item with multiple accessories will not last as long as an all-in-one item. Years ago, the Flip camera had a built-in USB connection and all pieces were included on the device. These cameras lasted much longer than GoPro cameras which require multiple attachments to operate. As a result, the GoPro cameras were often out of commission as the team waited for shipment of replacement parts.

The situation is compounded with items like electronics kits, which generally have several dozen pieces to keep up with. Most electronics kits have small circulation numbers, so they are generally avoided. In order to have successful circulations of such kits, it is recommended to have a fairly large stockpile of auxiliary parts. A list of the complete contents of each kit should also be circulated with each one. Another possibility would be to modify check-in procedures to require an inventory of pieces before the patron is credited with the return.

Batteries

A related consideration is the battery type. The Technology Checkout Desk does not provide batteries for devices upon checkout unless they are proprietary rechargeable batteries, a decision reached through extensive experience. The team's experience with batteries has been that students are typically wasteful of batteries that they do not provide themselves. In addition, the numerous types of batteries required for various devices would be an extra organizational challenge to operating the service. Asking students to provide their own batteries has generally led to the use of fewer batteries overall. The team has experimented with generic rechargeable batteries

before and has found that the number of batteries and chargers needed to be kept on hand in order to ensure that there are always freshly recharged batteries is usually prohibitive, both in terms of cost and space. The challenge with rechargeable batteries is that items are often returned to the desk with no charge and are not usable until they have had time to recharge. For this reason, if given the choice, items with replaceable batteries are the first choice. Items with rechargeable batteries are considered if there is not a battery replacement option.

Support/training needs

Another consideration when deciding between multiple versions of one type of device or introducing a new type of device, is the amount and type of training necessary for Technology Checkout Desk personnel to support the device properly. In most cases where a certain level of support in using the device cannot be provided, the device is not added to the collection. To lessen patron frustration, an attempt is made to provide a basic level of support and instruction in using the device. Devices that are simpler to operate will typically be preferred unless there is some tradeoff to be made with extra features or capabilities that are necessary for the patron.

Durability/manageability

The durability or manageability of a device may also dictate that the device type should be discontinued. Some devices may go through months of checkouts without needing any intervention by staff. Other devices may require intervention regularly. If the desk cannot keep a type of item in consistent circulation because it is always requiring updates or fixes, then the item is typically phased out of the collection. This is usually something that cannot be assessed on the front end when deciding whether or not to select a device for checkout. Use of trial devices can alert the team to problems of this nature, but usually not unless they are particularly egregious. Otherwise, a few months of constant checkout and use at the Technology Checkout Desk is usually required to see how durable a device is.

Deselection criteria

Individual items are not generally removed from the technology collection unless they are lost or inoperable. Deselection typically occurs among types of items, or more often, brands and models of items. For example, the team is most likely to deselect a certain model of Samsung digital camera, rather than all digital cameras. Deselection of an entire category does

happen occasionally, as when light-field digital cameras were deselected due to low use.

Poor circulation statistics are generally the number one reason a class of item is removed from the collection. Because the collection has high-use, high-turnover, and high-maintenance items, a device that is gathering dust is generally taking up space that can be better used for some other class of device. There is an attempt made to ascertain first what the reason for the low circulation is before deselection, but this is not always easy to determine. Students rarely let you know that they were not sure how to use an electronics kit. Other factors may also be responsible for low circulation, such as ease of use, a lack of needed software, or poor marketing. The use of the first-generation Oculus Rift, a virtual reality device, was discontinued as soon as was feasible due to the difficulty of getting the device to work properly, in addition to a lack of content on the device itself.

The most critical reason a device type may be deselected is that it no longer supports curricular needs. Given the nature of the collection, the mainstay of which are items that have a certain durability of need, this rarely happens. Digital cameras have been in demand for a long time and will probably be so into the foreseeable future. One might suppose that the improvement of digital cameras in personal phones would have dampened circulation of the items, but this has not proven to be the case. A purpose-built digital camera can still do a lot more than what is currently available in the average smartphone.

A similar principle applies to laptops. A recent EDUCAUSE survey found that 91% of undergraduate students had access to laptops (Galanek, Gierdowski, and Brooks 2018). Libraries are often part of that access. However, there is still a ‘digital divide’ between those who can afford such devices and those who cannot. In addition, students also like to check out laptops because the campus software is available on them, which is generally unaffordable for the average student. Also, students enjoy the convenience of using a laptop while in the library, even though they may have one back in their dorm room. They need not carry their laptop across campus and are more mobile throughout the library, rather than having to station themselves at a desktop.

Another common reason for deselecting individual models of devices can be characterized as a change in the IT environment. This can include such considerations as the device not working with new software, a new model of the device being introduced, or the device not working well with other new hardware on campus. This generally involves any mismatch between the device and the other systems—both hardware and software—that the device must work with, but also includes general depreciation. In the technology realm, new devices are introduced constantly, with the concomitant

abandonment of the older items. That introduces the necessity to keep pace with new hardware models so that the devices continue to work for the students who need them.

The remaining consideration in deselection can be reduced to “how difficult is it to keep usable devices in circulation?” Under this heading, those devices that require a lot of time in maintenance and troubleshooting can be discontinued, as can devices that disappear a lot, whether through loss or damage. However, this must be balanced against the importance of the device to the patrons. Laptops present considerable challenges in maintenance and upkeep but are a necessity to the students. If a certain model of laptop were particularly problematic, it might lead to the purchase of a different model. Price is also a consideration. For example, the desk circulated a small number of GoPro digital cameras for a time. It was necessary to discontinue their circulation relatively quickly because of the cost of replacing them compared to the numerous ways in which they could be rendered unusable, from missing essential parts to loss or damage. The first GoPro circulated by the desk met its end at the bottom of a lake.

The guidelines for selection and deselection of items must be flexible in order to accommodate the changing nature of technology. Few of these principles are so rigid as to admit of no exceptions. Further, an item in circulation may be kept much longer than its price or durability warrants if a faculty member’s research or instruction requires it. Besides the usual forms of assessment such as circulation statistics, the team relies a great deal on forming good relationships with students and faculty to assist the team in making good decisions for the campus community.

Challenges

Though the Technology Checkout Desk has come a long way over its six years in service, there remain several ongoing challenges. One of these comes from the success of the service. Before the beginning of the Technology Checkout Desk, and into its early years, the amount of equipment was generally enough to satisfy student’s needs until approximately the last month of each semester. Around that time, due to procrastination and projects coming due, equipment would become scarce to non-existent on the shelves. It was not uncommon to have nothing to check out for the last two weeks of a semester. As the Technology Checkout Desk became more popular and more people learned of its existence, this period of sparse equipment expanded closer and closer to the beginning of the semester. In Fall 2019, it was not uncommon to have fewer than ten MacBooks, PC laptops, and Chromebooks available for checkout, starting from the first week.

With 550 devices already available for checkout, expansion of the service becomes trickier. More devices mean more troubleshooting. It also puts a greater strain on infrastructure, as the desk is currently near the maximum sustainable load on the current electrical system for that area of the building. Since many devices are on chargers when not in use, adding additional devices would mean rewiring the area or finding some way to store devices at a distance sufficient to put them on another circuit but also near enough not to impose unnecessary difficulties for either patrons or library employees.

A challenge that is consistently problematic for libraries with constrained budgets wishing to start up technology collections is the necessity of maintaining a pool of funds to replenish lost or damaged items. As a mid-sized academic library, this is often a challenge, especially with an attrition rate of approximately 30% per year. Part of the problem is that losses and late fines do not come back to the team to cover the costs of replacements. If these charges could be reclaimed from the bureaucracy, then that might go far in protecting the ability to maintain the collection at optimal numbers of items. Those libraries wishing to begin or expand a technology collection would be well served by ensuring that the money from fines is placed in a fund dedicated to replenishing their missing devices.

Optimal levels for the collection is an issue that is still to be determined. It appears from experience that each new level of inventory has done little to blunt demand. Statistics fluctuate, but the team suspects that checkout numbers vary as a function of how many actual devices are in service at any one time. The amount of time when there are no circulating devices does not seem to shrink with the addition of more devices but continues to grow. The team is currently collecting statistics to determine if that is a reasonable assumption. If so, it still does not answer the question of the right number of items. An attempt to collect data on “turnaways” runs into the problem that availability data is posted at the desk and the website. A student can see that there are no available devices and does not even visit the desk. Even a simple glance at the shelves can sometimes answer the question for students as to the availability of the item.

An additional challenge is the often-fluctuating attitudes and support that technology receives in the library. Not all librarians are convinced that technology checkout should be a substantial role of the library. Few librarians would challenge the obvious fact that technology will continue to be an expanding part of the library’s mission, and many also recognize the existence of the digital divide and the role the library should play in ameliorating this problem. However, this attitude can often meet resistance when resources are scarce, and funds allocated for technology may be seen as reducing funds for other library needs. Some question the amount of

space that technology services take up, which could be used for study space, or more collections. Some librarians experience discomfort with the prevalence of technology in the library because of insecurity about their own facility with technology. This varies from library to library but can present an ongoing challenge to developing successful technology spaces and services.

Another ongoing challenge with maintaining the collection is the necessity of fitting into the campus IT environment. Currently, this means that laptops and MacBooks must be part of the managed IT environment of the University. At most institutions, the library typically has to work with the broader campus IT units in order to negotiate such things as licensing of software, permissions to modify devices, and IT policies. At Appalachian State, a common issue that arises is that campus IT will change aspects of the managed device ecosystem without always giving sufficient warning to distributed IT groups such as the library. This can cause a great deal of confusion and result in a scramble to get a large number of devices updated or repaired in a short period of time, depending on when these changes get made. There has been more than one start to the academic year which has involved a quick reprogramming of more than 150 devices in order to make them usable to newly arriving students.

Marketing has also been a challenge that has affected the collection. Anecdotally, there are too many cases of students or faculty exclaiming that they did not know about the full range of devices available to them, a particularly sad experience when uttered by a senior in their last semester. This is also sometimes reflected in low checkout numbers. Although it is hard to say whether low numbers in checkout for a particular device is due to an indifference to the device itself or a function of patrons simply not knowing such an item is available for them to use. This concern is mitigated by putting an inventory on the website and having a most popular items sign at the desk itself; however, there are still devices in the collection that would enjoy much wider use if students knew about them, based upon the frequency patrons request them. This is an ongoing challenge to which the team continues to try to find a good solution.

Future directions

One goal for the near future is to create a formal collection statement. This will allow the team to create a set of policies that can be referred to when answering inquiries from faculty, students, and other campus units. The team regularly receives requests from other departments and campus units to add their circulating technology collection to the collection and to manage these items with little or no support.

While the Technology Checkout Desk is amenable to such requests, this rarely works for two reasons. First, items selected by the outside department rarely meet the criteria used by the Technology Checkout Desk to select new devices. They may be too expensive, too easy to break, too difficult to support, or simply not of a high enough quality to withstand a semester's worth of high-volume checkout. The second reason is that most of these departments are resistant to allowing their devices be available to anyone to use. They typically want to restrict their checkout to "their" students, whether that is construed as students who have that major or are taking a certain class. As a rule, the technology services and resources of the library are available to all.

Even though there are concerns about the size of the collection, there is still room for growth and for diversification of the types of items provided. The team is planning for further outreach to other curricular areas not previously engaged, as well as areas important to the university. Appalachian State continues to make sustainability a priority for the university, so the authors plan to see how they can support that direction with technology checkout. There are also academic departments that could benefit from outreach of this nature and working with them can benefit the library in multiple ways.

The authors have also been considering the addition of "experimental" items. The service philosophy that informs collection decisions has been that the library needs to support the items that it provides. The team tries to provide basic operating instruction to those who ask and it maintains the devices in-house. However, sometimes that limits the devices available to offer. An example of this is a request that was received from the Health Sciences department. They have asked for devices such as thermometers, stethoscopes, and otoscopes to be a part of the collection. Users will in most cases not have difficulty using these devices, but the team can offer little support if there is a malfunction of some kind. So, an experimental tier of items is a sort of "checkout at your own risk" option. The items will be provided but with minimal support from staff. The idea is that if these caveats are stated up front to the patron and the team is clear in its communications, then patron frustration with technology can be avoided. This will allow the team to be responsive to requests for devices from various departments and faculty.

Conclusion

The development of the Technology Checkout Desk and circulating technology collection at Belk Library has faced numerous challenges on its way to becoming a successful service. Soon a decision will need to be made whether to expand the service further, keep the status quo, or let the service decline in favor of other initiatives. Expanding the service seems to be

dictated by user experience and statistics, but may require an investment in personnel, infrastructure, and devices that the library may consider prohibitive. Keeping the service at its current size and scope may make budgeting easier and ease resource worries but runs the risk of escalating user frustration. Letting the service decline is an unlikely choice to be made at the current time, but several factors may lead to this decision. A laptop mandate from the university could make a considerable portion of the collection superfluous. Advances in technology and the continuing trend of students already owning devices loaned by the desk could make it a less essential service. The continually climbing usage statistics and the anecdotal reported satisfaction with the service are reasons to keep expanding, but that must be balanced with an understanding of the library's role in the campus ecosystem. No matter which way that balance is struck, the team feels that it has put together a cohesive, useful technology collection and married it with a successful service point and that a significant part of that strength resides in the care with which the collection is managed and developed.

References

- Anderson, Sean, and Sue Weatherbee. 2012. "Growing a Technology Equipment Service in an Academic Library." *Computers in Libraries* 32 (6):6–8.
- Atlas, Michel, Felix Garza, and Ren Hinshaw. 2007. "Use of Laptop Computers in an Academic Medical Library." *Medical Reference Services Quarterly* 26 (2):27–36. doi: [10.1300/J115v26n02_03](https://doi.org/10.1300/J115v26n02_03).
- Cross, Emma, and Ryan Tucci. 2017. "The Emerging Technology Collection at Carleton University Library: Supporting Experiential Learning in the University Curriculum." *Partnership: The Canadian Journal of Library and Information Practice and Research* 12 (1):1–19. doi: [10.21083/partnershipv12i1.3917](https://doi.org/10.21083/partnershipv12i1.3917).
- Dodd, Lorna, and Samantha Drennan. 2007. "Laptop Loans in UCD Library." *SCONUL Focus* 42:53–6.
- Feldmann, Louise, Lindsey Wess, and Tom Moothart. 2008. "An Assessment of Student Satisfaction with a Circulating Laptop Service." *Information Technology and Libraries* 27 (2):20–5. doi: [10.6017/ital.v27i2.3254](https://doi.org/10.6017/ital.v27i2.3254).
- Galanek, Joseph D., Dana C. Gierdowski, and D. Christopher Brooks. 2018. *ECAR Study of Undergraduate Students and Information Technology, 2018*. Louisville, CO: ECAR.
- Hahn, Jim, Lori Mestre, David Ward, and Susan Avery. 2011. "Technology on Demand: Implementing Loanable Technology Services at the University of Illinois at Urbana–Champaign." *Library Hi Tech* 29 (1):34–50. doi: [10.1108/07378831111116886](https://doi.org/10.1108/07378831111116886).
- Holden, Hugh, and Margaret Deng. 2005. "Taking Pro–Action: A Survey of Potential Users before the Availability of Wireless Access and the Implementation of a Wireless Notebook Computer Lending Program in an Academic Library." *Library Hi Tech* 23 (4): 561–75. doi: [10.1108/07378830510636346](https://doi.org/10.1108/07378830510636346).
- Jensen, Karen. 2008. "Beyond 'Classroom' Technology: The Equipment Circulation Program at Rasmuson Library, University of Alaska Fairbanks." *Journal of Access Services* 5 (1-2):221–31. doi: [10.1080/15367960802198754](https://doi.org/10.1080/15367960802198754).

- Munson, Doris, and Elizabeth Malia. 2008. "Laptop Circulation at Eastern Washington University." *Journal of Access Services* 5 (1-2):211–9. doi: [10.1080/15367960802198713](https://doi.org/10.1080/15367960802198713).
- Power, June. 2008. "Circulation on the Go: Implementing Wireless Laptop Circulation in a State University Academic Library." *Journal of Access Services* 5 (1-2):197–209. doi: [10.1080/15367960802198705](https://doi.org/10.1080/15367960802198705).
- Sharpe, Paul. 2009. "Circulating Laptops: Lessons Learned in an Academic Library." *Journal of Access Services* 6 (3):337–45. doi: [10.1080/15367960902894195](https://doi.org/10.1080/15367960902894195).
- Thompson, Sara. 2011. "Setting up a Library iPad Program: Guidelines for Success." *College & Research Libraries News* 72 (4):212–6. doi: [10.5860/crln.72.4.8543](https://doi.org/10.5860/crln.72.4.8543).
- Vaughn, Jason, and Brett Burnes. 2002. "Bringing Them in and Checking Them out: Laptop Use in the Modern Academic Library." *Information Technology and Libraries* 21 (2):52–62.
- Wood, Gail, Lorraine Melita, and Marc Wildman. 2004. "Lights! Cameras! Action!: Digital Media Equipment and the Academic Library." *The Journal of Academic Librarianship* 30 (5):410–5. doi: [10.1016/j.acalib.2004.09.001](https://doi.org/10.1016/j.acalib.2004.09.001).

Appendix

Current list of technology equipment

Category, Type and Model Number currently in collection

Audio Equipment

- Apogee Jam6
- Snowball Microphone6
- Sony HDR-MV15
- Yeti Microphone4
- Zoom Audio Recorder15

Calculators

- Calculator20

Camcorders

- Canon Vixia24
- Zoom Q3HD7

Laptops

- Chromebook57
- Mac Laptop39
- Windows Laptop59

Miscellaneous

- DVD Drive3
- Lacie Hard Drive22
- Oculus Go6
- Projector Screen2
- Ricoh Projector8

Faculty/Staff Equipment

- Nikon DSLR5
- Projector6
- Projector Screen3
- Windows Laptop6
- Zoom Audio Recorder4

Accessories

- HDMI Cable4
- HDMI to Thunderbolt Adapter4
- MacBook L Connector Charger9
- MacBook Pro Charger8
- MacBook USB-C Charger 77
- PC Charger8
- Skull Candy Headphones29
- USB-C Hub11
- VGA to Thunderbolt Adapter7
- Wired Mouse11

Cameras

- Nikon DSLR28
- Nikon Point and Shoot Camera5
- Ricoh Theta V 360 Camera8

Tripods

- Sony Tripod24

Tablets

- Surface Pro 411
- Wacom Drawing Tablet10