



# UT ARLINGTON LIBRARIES LAPTOP SERVICES

A review of the past and a glimpse of the future

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## Abstract

The UT Arlington Libraries have been loaning laptops to patrons to take outside the libraries since 2003. This paper provides a review of past policy and practice, a discussion of a program evaluation conducted in the Libraries and also an exploration of the current and future environment related to technology on the UT Arlington campus more broadly and the Libraries in particular. Ethnographic work to discover more about our users in general, combined with additional work to understand distinct personas related to technology needs adds additional context to the final recommendation that the Libraries consider purchasing more laptops and Chrome books and establishing kiosks on each floor near printing stations to meet the technology needs of our user population.

## Mission, Values and Decision Making

The UT Arlington Libraries' mission is to provide transformational learning experiences through Creation, eXploration and Innovation (CXI). Our services are designed to empower knowledge Creation, idea eXploration, and learning Innovation through: transformative virtual and physical spaces, collaborations, collections, outreach, service, partnerships, and experiences. The expressed values of the libraries are Community, Learning, Discovery and Knowledge Creation, Excellence, Risk-taking and Innovation, Transparency of Communication and Integrity of Action, Service, Collaboration and Flexibility. The Libraries strives to manage competing interests and ensure that all values are equally supported. In order to make a data driven decision about changes to our laptops lending service, it will be necessary to balance our priorities of community and service with innovation, so that we continue to provide the support that our students need.

## Program history

The laptop loan program began at the UT Arlington Libraries in the Fall semester of 2003. The Student Government Organization (SGO) had donated funds to the libraries for the purpose of purchasing laptops that would be able to be loaned to the student population. The initial purchase was 45 laptops, which were equipped with wireless and Ethernet network connection capability, as well as browser software and the Microsoft Office suite of products.

The laptop lending program had some significant impact on library practices and usage. The circulation desk was much busier, and lines became longer at the service points, when the program started, not only because of increased traffic, but because it takes longer to check out a laptop. Changing the laptop loan period from four hours to 24 hours at the Science and Engineering Library (SEL) and the Central Library and dedicating one service point for laptop checkout subsequently reduced the slowdown at Central circulation. Maintenance issues with loanable laptops are not insignificant. With an inventory of 45 laptops and over 400 desktop computers in the many facilities, just over half (209 out of 410) of the service requests submitted to Library Systems (LS) staff in 2006 pertained to the loanable laptops. In terms of staffing, this means that one LS staff member spent more than half their time maintaining or repairing loanable laptops, particularly as they reached the end of their lifecycle and were no longer covered by the manufacturer's warranty.

While the initial gift to the libraries by student governance was extremely generous, there was no provision made for any future purchases or upgrades. By 2006, the initial set of laptops were beginning to show significant wear and tear and the operating systems and software required upgrades beyond the capability of the hardware, so another set of 68 laptops was purchased by the libraries and the original set was surplus. This cycle has repeated itself twice in the years since and is due to happen again in the next 18 months. Along the way, software options have continued to be added and upgraded so that the devices continue to be useful and relevant to the needs of our student population. As technology continues to improve and to become less expensive, it is less of a financial commitment, but it is not an insubstantial obligation for the Libraries in terms of purchase and maintenance. A one-time gift has become a service expectation and addresses a real need by providing technology to our students. Demonstrating the value of meeting that need in a fiscally responsible way is an ongoing challenge.

## Program Evaluation

In the fall of 2006, the Libraries undertook a strategic evaluation of the laptop lending program. Our purpose was two-fold; the first was to determine what our peer group was doing with respect to technology lending, and the second was to get user feedback on our current offerings of software to determine if we were meeting their needs. The team conducted a literature review and created and sent an email survey to the library public services lead of the University's identified peers. We also created and implemented a point of service survey to be completed by the users who were borrowing laptops.

### LITERATURE REVIEW

Our review of the literature at the time revealed that many university libraries across the country had started lending laptops, and most of those did so to fill a need not addressed elsewhere on their campus. In spite of the growing popularity of these programs, laptop policies and services varied widely. There is a growing trend at universities to require students to have laptops for certain degree programs, equipped with software relevant to the discipline. Many universities that require students to have laptops either have contracts with computer companies to provide laptops at a discount for students, purchase a large number of laptops (using student fee money) which they provide for each student to use, or rent laptops to students for a year or semester interval. Because of this trend, it is probable that at some point in the future UT Arlington may adopt some sort of mandatory computer requirement. (The School of Architecture has announced a laptop requirement for juniors and seniors.) If UT Arlington were to adopt a computer requirement in the future, the Library's laptop lending program could eventually migrate to another department on campus.

### QUALITATIVE EVALUATION

Responses to the peer survey revealed that we were on the cutting edge of technology services compared to the libraries at our peer institutions. We received information from each of the fifteen libraries that we contacted, and discovered that only seven of them loaned laptops and only one other library loaned them for at least 24 hours, thus allowing them to leave the library. Our practices in regards to lending laptops were definitely innovative, given that we had assumed great risk of financial loss and chose to be so liberal in the usage policies. Even though we had experienced a few losses and some damage due to the fact that we allowed the laptops to leave the building, we also knew that the expectations of our customers were such that there was no chance that we would be able to discontinue the service or to reduce our level of service.

Our user feedback revealed to us that the laptops that we made available at the time were actually more powerful and rich in features than was needed by the typical uses described to us. Of the 198 unique surveys completed, which were administered over a three week period, 95% percent (Figure 1.) said that the primary usage was browser based, closely followed by the usage of the Microsoft Office suite of

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products. There was usage of some of the more sophisticated software products, but the users primary requirements were based upon the processing speed and Random Access Memory (RAM), while we had been purchasing machines with more storage capacity and high speed Compact Disc/Digital Video Disc (CD/DVD) drives, even though users were prevented from installing software on the devices themselves.

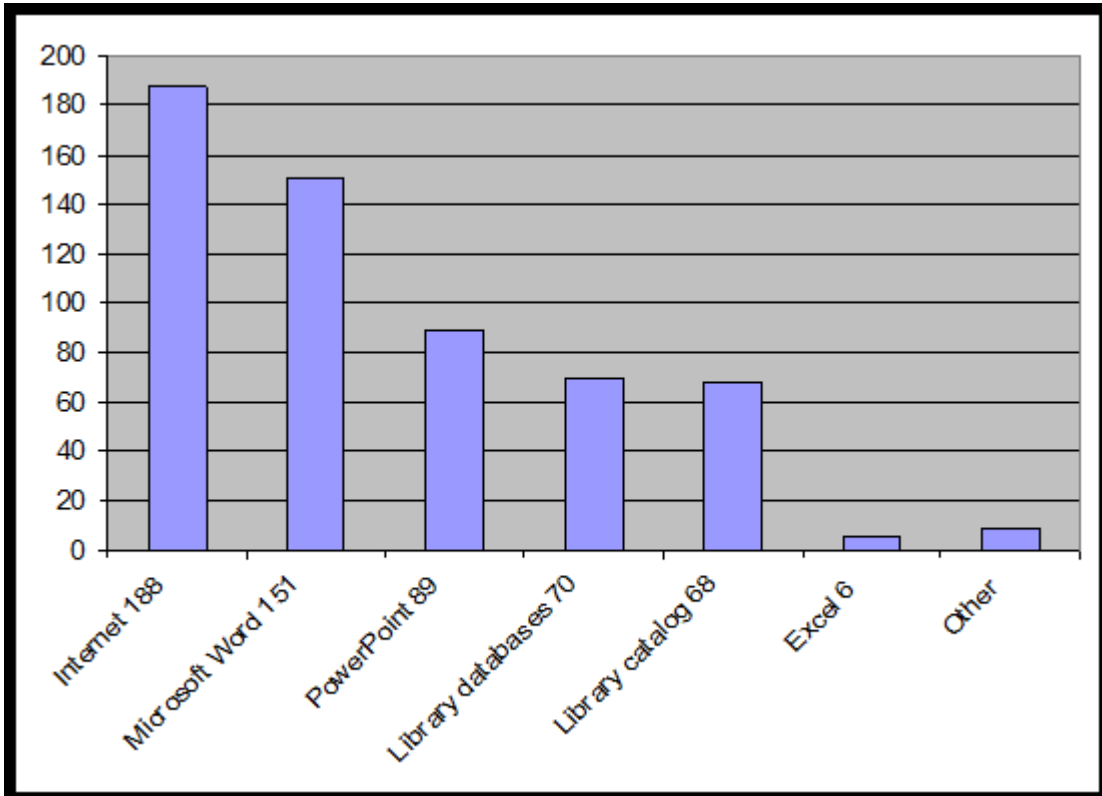


Figure 1.

## USAGE

A review of the usage of our loanable laptops revealed that in the long semesters of 2005-06 (September through April) the 64 laptops that circulated for 24 hours were used an average of 1855 times per month. (Figure 2.) The four laptops at the Architecture and Fine Arts (AFA) library only circulated for four hours at that time, and were not allowed to leave the building. Looking at the same period in 2012-13, there were only 52 24 hour laptops in service, at all three locations, and the average usage was just over 1100 per month. Laptop usage accounted for about 15% of all circulation activity during the given months. In spite of the increasing ubiquity of technology, and the reductions in the cost of technology to consumers, the lending service is still very heavily used by our students.

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Location	Year	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	Total	Average
<b>AFA(4 HRS)</b>	<b>2005-06</b>	19	17	53	10	13	35	28	77		
<b>Central</b>		1842	1604	1453	886	1941	1395	1295	1486	11902	
<b>SEL</b>		487	523	452	185	249	496	85	461	2938	
										14840	1855
<b>AFA(24 HRS)</b>	<b>2013-14</b>	7	44	8	5	10	8	5	17	104	
<b>Central</b>		894	1259	1048	480	429	1027	942	1154	7233	
<b>SEL</b>		186	294	249	99	107	203	152	225	1515	
										8852	1106.5

Figure 2.

## RECOMMENDATIONS AND CHANGES

After reviewing all of the data in 2006, the team made several recommendations regarding continuation of the service. The first was that the Library should purchase less expensive laptops and increase the number. This information drove our decision to purchase less expensive devices in the next cycle, paying special attention to processing speeds and ease of connectivity but not getting devices with expensive CD/DVD drives and lots of storage capacity. The second was that a new full-time position be created in Library Systems that is devoted to maintaining laptops. We were able to add a position the next year to meet that need. A third recommendation was realized when the first floor of the Central library was renovated in the summer of 2014 and a completely separate service desk for technology lending was established. Two other recommendations were made that remain yet to be considered. The first of these was to centralize laptop check out at a single location, at the Central Library, to reduce the need for students to go to different libraries to see if there were any devices available. The second was to make a proposal to the University of Texas System Regents to increase the overdue fines for late laptops as a means of encouraging students to return the laptops in a timely manner. Given that the percentage of laptops returned late was less than 5% for each of the two intervals described in Figure 2, this is probably not a critical change.



## Current Conditions

### CAMPUS CHANGES

The University has provided computer labs for student use across campus for many years. There are labs managed and controlled by the Office of Information Technology (OIT), and by the various schools and colleges. In November 2009, OIT closed the computer lab that it maintained in Ransom Hall. Students immediately lost access to the 90 desktop PCs that were available in that lab. The Libraries saw an immediate spike in occupancy and usage of the nearly 400 PCs that we provided, along with the additional 70 provided by OIT in the first floor commons area. We also experienced an increase in the number of loans of our laptops, with a more than 30% increase over the previous year's November laptop circulation at the Central Library and a 45% increase in the year to year December laptop circulation.

OIT staff conducted a user survey in during the Fall semester of 2013 to evaluate strategic alignment of the department. After their analysis they made the determination that most students came to campus with their own laptops and therefore the labs were no longer necessary or relevant. In spite of this assumption, consistent usage of our lending laptops indicates differently.

## Usage, Users and Usability

In September of 2013, the loan period for loanable laptops was changed from 24 hours to 72 hours. While total circulation counts were reduced because of the longer loan period, a comparison of laptop usage during the same three months in two consecutive years revealed that the average user still kept the laptops out very close to the maximum amount of hours available. (Figure 3.) When the maximum loan period was 24 hours, the mean time in use was more than 20 hours. With a maximum of 72 hours available for each checkout, the average time in use was over 63 hours for the selected 3 months. This is in contrast to the perception that students have their own technology available and simply use the Libraries' laptops as an on campus convenience. A further analysis of the uses in that interval indicates that the most common user group is also changing. (Figure 4.) In 2013, the highest percentage of uses of laptops was undergraduate students, followed by graduate students, with the usage remaining steady for each group over the period. In contrast, the first three months of the 2014 academic year saw increasing percentages of graduate students using our loanable laptops. While undergraduate students still use the laptops more based upon percentage of total use, graduate students are increasingly making use of the service.

Year	Month	Charges	Mean time in use (hrs.)	Median time in use (hrs.)
2013	September	1024	20.16	19.93
2014	September	352	62.09	71.34
2013	October	1507	20.2	21.26
2014	October	397	61.55	70.62
2013	November	1266	21.82	22.09
2014	November	317	70.34	72.64

Figure 3.

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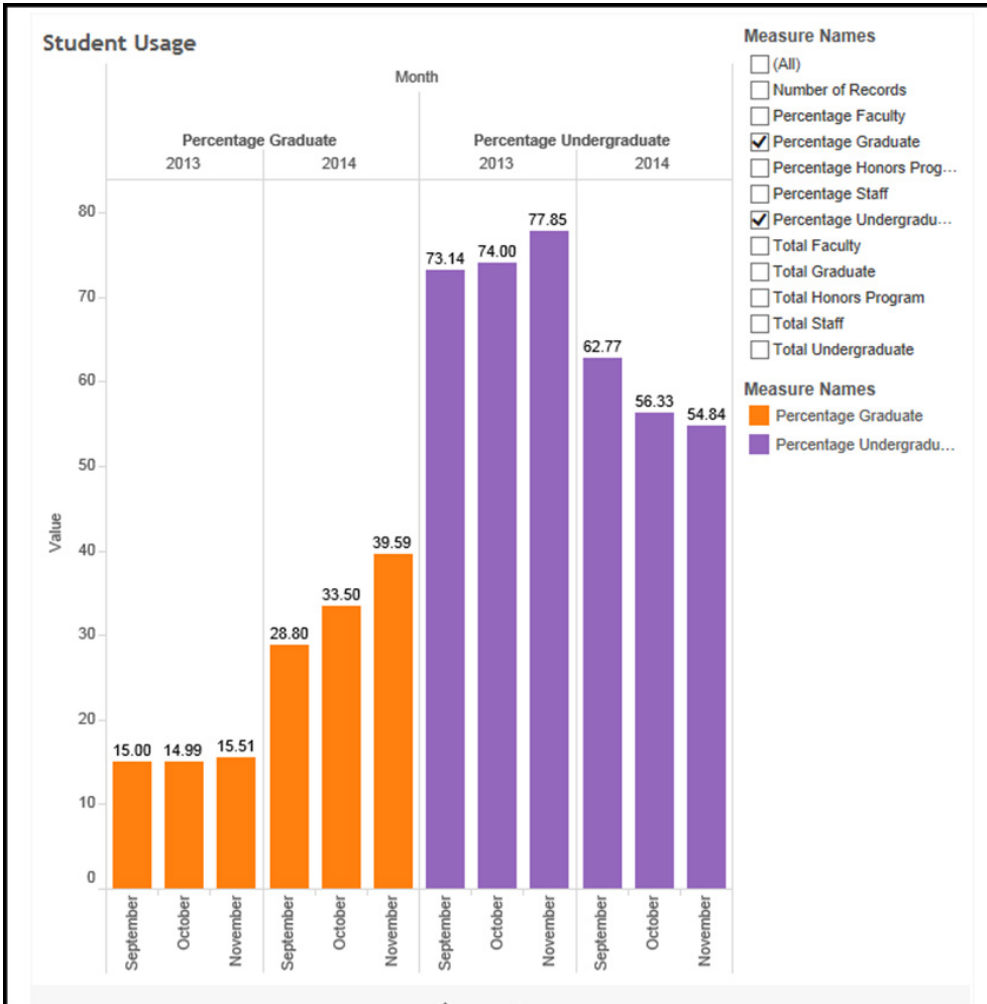


Figure 4.

An additional analysis of uses for the month of April 2015 shows that there were a total of 312 uses of laptops for that interval, but only 137 unique users. Of the available hours for the period, a total of 30,240, the laptops were checked out for 62% of that time. This is an increase from the Fall 2013 usage of 39% of the available time. The mean time of use was 58.09 hours and the median time of use was 69.59 hours.

## ETHNOGRAPHIC OBSERVATIONS

In 2012, the Libraries undertook a large scale ethnographic study of our student population, with both on campus and remote students. Libraries’ staff gathered data using a variety of techniques, including interviews, photo surveys and environmental observations, or what we called “Where’s Waldo.” As a result

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of this work, we made some deductions about students and their research and study habits, both in the libraries and elsewhere. Chief among these observations were students use of physical space, where we noted that they preferred open, flexible space that they could use for a variety of purposes, and the omnipresence of technology in various forms. Observing students in locations across campus, we noted that they would often rearrange furniture to accommodate their personal or group needs at the moment. We observed them using mobile whiteboards as temporary walls to create a more private space, and even when working independently they often choose to be in an area where they are not “alone.” Technology was observed in many forms, including laptops and mobile computing devices.

Subsequent work using this data, as well as other observations, allowed us to identify three distinct types of personas of library users with regards to technology. Kevin O’Connor in his article in UX Magazine entitled "Personas: The Foundation of a Great User Experience," defines a persona as a representation of "a cluster of users who exhibit similar behavioral patterns in their purchasing decisions, use of technology or products, customer service preferences, lifestyle choices, and the like. Behaviors, attitudes, and motivations are common to a "type" regardless of age, gender, education, and other typical demographics. In fact, personas vastly span demographics." Our work with personas is loosely represented by three types: the drive by user, the drive in user and the camper.

The drive by persona has technology needs that are brief and very output driven. Students will come into the library for fifteen to thirty minutes for the express purpose of printing something, like a paper or schedule, or to pay a bill online. They want quick access to computing devices, preferably without a slow boot up time, so that they can be in and out of the library quickly. The drive in persona spends more than 15 minutes but less than four hours, and technology use is often based around short term project work or recreational activity like viewing videos or checking social media. These users are content with available desktops, as long as there are some available, but will also check out a laptop for this purpose, as they have time to allow the device to boot up and configure itself for work. Both of these personas are more visible during the weekdays, between 9am and 6pm. The third persona is the camper and is most evident in the libraries after 7pm weekday evenings and on weekends. This is user who will come to the library with the intention of staying more than four hours, whether in a group study environment or alone, and will have the greatest variety of technology available for use. They have the greatest need for access to large surfaces to spread out and for electric power to continue to charge/recharge their devices. Because they want flexible space depending upon the particular task at hand, they want the option to have a large space unencumbered by a desktop unit, where they can use a laptop or tablet as needed.

## PILOT PROJECT

In the Spring semester of 2015, the assessment team at the UT Arlington Libraries was able to use a Microsoft surface Pro 3 for several weeks to do some rough usability testing to determine whether or not this would be a useful option to replace the loanable laptops that we currently have, which are largely out of warranty and of which only 42 remain serviceable.

The graduate research student in assessment had the following feedback to share about his experience.

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1. The laptop rests at an awkward angle which is inconvenient for table top use.
2. Shifting from Windows 7 operating system—currently on the desktops on library computers—may be problematic for older students and those who prefer Windows 7 over 8.
3. The programs installed on the laptop are useful and cover the basic requirements of several majors, but some applications such as ArcGIS have servers that need to be patched across the firewall, which is problematic.
4. Mapping additional network drives is not possible and needs to be looked into, as students cannot save their work to the device since DeepFreeze is installed.
5. The equipment is fragile because of lighter keyboard and can flip or drop if carelessly handled, since the keyboard is not actually attached.

Overall, his evaluation was that he preferred desktop computers or laptops with Windows 7 like those issued from the tech center on first floor.

## LOOKING TO THE FUTURE

OIT will be closing the computer lab on the first floor of the Central Library in the Fall semester of 2015 and students will no longer have access to the 75 desktop PCs and 10 iMacs currently available. The Libraries will be renovating the remaining space on the first floor to allow for the FabLab expansion. The collections currently available on the Central Library's 2nd Floor will be moving to other locations in the building and the floor will be renovated for more student seating and study space. The qualitative work that we completed in 2012 showed us that students like flexible spaces, and this will be a major consideration during the remodel. The majority of our desktop PCs will continue to be housed on the floor, but we will be providing more open table and areas so that portable devices can be used as well.

## Options

There are a number of ways that the Libraries can continue to support the students' needs for technology support. The first would be to add additional PCs to the upper floors of the Central Library, replacing the units that will be lost in the expansion of the FabLab on the first floor. While desktop PCs have a higher reliability than laptops, adding them would reduce the amount of flexible and usable space within the Libraries that students have indicated that they prefer. A second option would be to purchase another allotment of loanable laptops, and increase the quantity so that a greater number of students will have access to them. Reliability issues would necessitate the development of a regular replacement plan, so that we always have a sufficient quantity on hand. A third option would be to provide loanable tablets, such as the Microsoft Surface, which allows for the installation of the software most commonly used by students on a device that is even more portable than a laptop computer. This would meet the needs of the drive-by users, as the devices can be configured so that there is virtually no boot up time, as they are designed to be used within the buildings. Reliability of these units is even more problematic than a laptop, however, as they are not especially durable and would require manufacturer maintenance support and possibly an even longer and more expensive warranty. We could also meet this need by creating some kiosk style PC arrangements for the express purpose of quick internet use or printing. Another possibility would be to purchase a small fleet of Chrome books for the drive-by users to complete their tasks. Chrome books have a higher reliability than

A final option that provides the needed support in a more indirect fashion would be for the Libraries to advocate on behalf of the students for participation in the campus bulk purchase program that allows the University to receive a 25% price reduction when purchasing particular pieces of technology as a bulk purchase.

## Recommendation

Based upon continuing usage of our loanable laptops and the growing popularity and usage of technologies in higher education, accessible and available technologies are still needed by our student population. Our most feasible option is to purchase new laptops and a larger quantity of them so that more students can utilize them. Simultaneously, we should enable internet/printing kiosks on multiple floors, but especially the first floor, so that those users who need to something quickly are in and out with little delay.