

## UX Study: Library's Desktop Computers

### Purpose

- The study investigated desktop usage in the Library. The questions that framed our investigation are as follows:
  - **Why do users choose the desktops?** If users own a personal laptop, why do they use the desktops? If they don't use the desktops, why not? What combinations of mobile/laptop/tablet/desktop technologies do they use?
  - **What are the desktops used for?** Are the desktops used for study and research, or recreation?
  - **What are users personal devices used for?** How does the use of personal devices differ from desktop use?
  - **What time of day are desktops used, and which floor is the busiest?**
  - **Do users prefer one floor of desktops over others?**

### The Study

- The Library's desktop computers on the ground, 1<sup>st</sup> and 2<sup>nd</sup> floors were observed at 10 different times between the hours of 9:00 and 4:30 from February 2<sup>nd</sup> to February 26<sup>th</sup> (excluding Reading Week).
- The main purpose of the observation was to log desktop usage in terms of occupancy and purpose of use.
- During each observation period, one user from each floor was interviewed (See Appendix A: Interview Guide).
- Over 10 days, a total of 669 computers were observed and 30 interviews were conducted.
- Along with the observations and interviews, a "Lobby Survey" was conducted in the Library's lobby to gain a better understanding of those users that may not be using the desktops. On February 12<sup>th</sup> a total of 27 users were surveyed (See Appendix B: Lobby Survey Guide).
- Limitations:
  - The study was conducted during normal business hours therefore evening and early morning desktop usage was not observed.
  - The study was limited to desktop usage. The option of borrowing a laptop from the Library was not explored.
  - Demographic information was not collected.
  - Potential variations in desktop usage caused by seasonal or semester events was outside the scope of this study.

### Findings: Why do users choose the desktops?

- Three primary user groups were identified.

(1) Users who **do not use** the Library's desktops.

- The main reason that users did not use the desktops is because they have their own laptops.

- The Lobby Survey found that 26 of 27 users owned a computer and 69% of those users brought their laptop to campus every day.
- A. There was a group of users who sat at the desktops but never actually used them. Instead they used their own devices or read a book. The main reasons for this were:
  - Unhygienic: Several users thought the desktops were dirty. One user said *"I find the keys sticky and it's especially gross during the winter when everyone is sick"*.
  - Outlets: There were more outlets available at the desktops than at tables. One user said, *"If I want to study at a table, it is really hard to find one in the first place, and one with an outlet is almost impossible. So I find it easier to plug my laptop in here."*
  - Less Distracting: The space at a desktop was more conducive to studying than at a cubicle or table.

(2) Users who **occasionally use** the Library's desktops.

- A. In several instances, users made use of the desktops because their laptops' batteries were dead. One user explained, *"My laptop battery died and there aren't any outlets close to where I was studying so I'm using a desktop."*
- B. Another common group was users who owned laptops but did not bring them to campus every day.
  - Based on the Lobby Survey results:
    - 4% of users never bring their laptop to campus;
    - 12% of users bring their laptop to campus 3 – 4 times/week; and
    - 15% of users bring their laptop to campus 1 – 2 times/week.

The main reasons that these users utilized the desktops were:

- Encourages positive study habits: Some users chose not to bring their laptop to campus because it helped them focus on their studies and "forced" them into the Library. One user said, *"I like using the Library's computers, it forces me to come to the Library and actually do work."* Another user said *"I'm able to focus better here. If I'm at the Library and on Facebook the whole time I feel like I'm unfairly using the computers and the resources that someone else could be using"*.
- Convenience: Several users thought it unnecessary to bring their laptop when the Library had suitable computers available for them to use. The Library is in a central location and the desktops are easy to access and operate which makes it okay for users to leave their laptops at home.
- Laptops are heavy: Users preferred to leave their laptops at home if they were too heavy to carry around all day.
- Unnecessary that Day: Several factors contributed to the decision to leave or bring a laptop and these factors varied from user to user. For example, some users knew that a certain class gave handouts or that they preferred handwriting notes for a particular class and therefore their laptops were unnecessary that day. Other users considered their plans after school and would rather use the desktops than cart their laptop around with them if they were not going directly home.
- Availability of Library's Desktops: These users did not bring their laptops because they knew that desktops were available for their use.

- Security: Some users were concerned with the security of their laptop, so they opted not to bring it to campus every day.

Users in this group **brought their laptops** to campus when:

- Extra Time: If they knew they would be on campus for an extended period of time like a large break between classes.
- Distance from the Library: If users perceived they would be too far away from the Library for the majority of their day.

C. Users who bring laptops/tablets to campus, but still use the desktops. These users made use of the desktops for the following reasons:

- Printing: *"I write the document on my laptop and then use to the Library's desktops to edit and then print it."*
- Desktops are Faster: Users said the desktops downloaded articles faster than their personal devices.
- Convenience: They found it more cumbersome and less convenient to use their laptop (i.e. finding a spot with an outlet, setting them up, connecting to wifi, etc.). *"I pretty much always have my laptop with me but usually use the desktops because they are more convenient." "It takes so long to open my laptop and get it connected and everything. It is just easier to use these computers. All of my stuff is on Google Drive."*
- Required a Specific Program/Software: The desktops had programs that users required, specifically Windows, R and eSHA.
- Ease of use: Users with tablets preferred the desktops because the touchscreen, small screen and lack of keyboard and mouse were too difficult to do anything other than "reading or quick searches".

D. Users who use their laptops/tablets and the desktop simultaneously. The major reasons for parallel usage were:

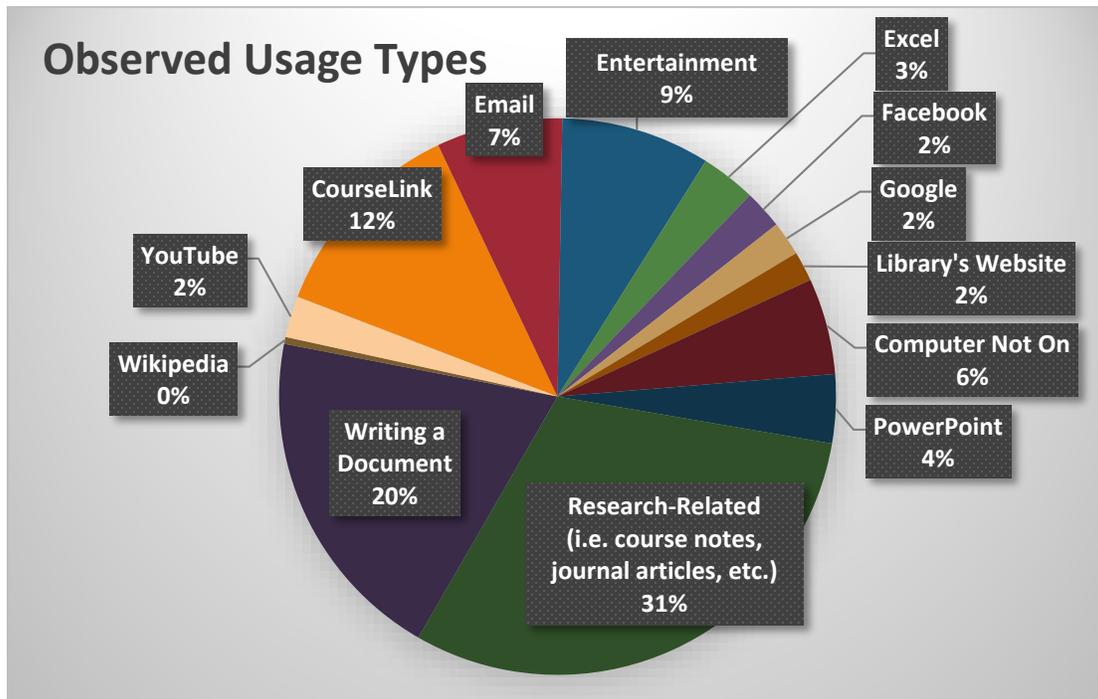
- Writing/Printing: Composing on laptops and printing from desktops.
- Multiple Documents Open: Some users preferred using two screens when multiple documents were in use. For instance, one screen was used for reading and the other was for taking notes.
- Group Work: Users preferred using multiple computers (desktops and laptops) when working in groups at the desktops.

(3) Users who **regularly use** the Library's desktops.

A. For users who do not own a laptop or have a broken laptop, the Library's desktops are their primary computers.

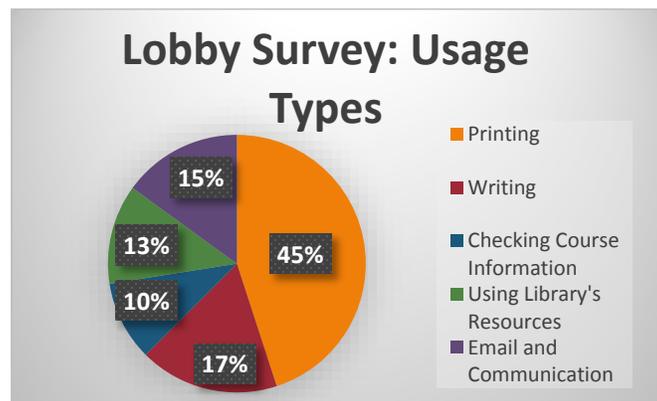
## Findings: What are the desktops used for?

*Results from observations:*



- The above chart shows the results from the observations of 669 computers collected from the 10 observation periods.
- Often there were several tabs open on a given computer. Only the window(s) that were visible during the observations were recorded.
- A notable absence from the above pie chart is printing. In general, printing is difficult to observe because the only evidence of printing, while observing a computer screen, is the print screen. During the observations, this did not occur.
  - The importance of desktops for printing was captured in the Lobby Survey (see below).

*Lobby Survey: What are the desktops used for?*



## Findings: What are personal devices used for?

1. Mobile: Phones were used for tasks required short periods of time like checking email, quick searches or communication. Users indicated that mobiles' screens are too small and that typing is too difficult to perform any other academic tasks.
2. Tablet: Users that had both a laptop and a tablet, tended to bring the tablet rather than the laptop to campus because it was more portable. Often tablets were used for class preparation (course readings) and in class to follow along with course notes.
3. Laptop: Academic tasks that required typing or more in-depth searching would be done on their laptop or the Library's desktops. If users did not bring their laptop and they needed to do tasks that were too advanced for their mobile or tablet, they would use the Library's desktops. Some users used their laptops simultaneously with the desktops (See Findings: 2D). Other users used the desktops when they had their laptops with them (See Findings: 2C).

### *Which device did users think was more critical on campus: laptop or mobile?*

- Laptop: 52% of respondents
  - Users thought laptops were more critical because they (1) have more processing power and (2) mobiles are too small to perform academic tasks.
- Mobile: 48% of respondents
  - Users indicated that mobiles were more critical because (1) communicating with friends is easier, (2) they are faster and (3) they are more portable than laptops.

## Findings: What time are desktops used?

### *When were the desktops the busiest?*

- The observed times with the greatest number of computers in use on all three floors were:
  1. 2:45 – 3:00 → 86 computers (Wednesday)
  2. 2:00 – 2:15 → 85 computers (Friday)
  3. 3:00 – 3:15 → 78 computers (Wednesday)

### *When were the desktops the least busy?*

1. 9:15 – 9:30 → 27 computers (Tuesday)
2. 10:05 – 10:20 → 51 computers (Wednesday)
3. 11:05 – 11:20 → 56 computers (Tuesday)

### *Which floor was the busiest?*

- The 1<sup>st</sup> floor has 31 computers, the 2<sup>nd</sup> floor has 55 computers and the ground floor has 63 computers. Over the 10 observation periods, the average number of desktops occupied per floor were:
  1. 1<sup>st</sup> Floor →  $24 / 31 = 77\%$  occupancy
  2. 2<sup>nd</sup> Floor →  $21 / 55 = 38\%$  occupancy
  3. Ground Floor →  $22 / 63 = 35\%$  occupancy

### *How many hours per week did users use the desktops?*

- The average number of hours per week that users used the desktops is **9**.
- The responses ranged from less than 1 hour to a maximum of 30 hours per week.

### **Findings: Do users prefer one floor of desktops over others?**

- In all cases users preferred to work on the floor they were observed on. In choosing a floor, users considered the following factors:
  - Presence of Natural Light
  - Noise Levels
  - Nature of Work: If users knew they were going to spend a long time on the desktops, they generally went to the 2<sup>nd</sup> or ground floors. The 1<sup>st</sup> floor tended to have more users doing tasks that could be completed quickly.
  - Availability of Printers
  - Space/Availability of Desktops: Often users would bypass the 1<sup>st</sup> floor because they knew the ground or 2<sup>nd</sup> floors would be less busy.

### **Researcher's Comments**

- Desktops are used for a variety of reasons. Even those users that used their laptops to write assignments, they often edited their documents on the desktops before printing at the Library. The following are recommendations based on the range of uses observed:
  - Investigate wireless printing to make this process easier for those using the desktops solely for printing.
  - Consider purchasing laptop power cords for users to borrow.
  - More outlets are required in high-use locations.
  - The questionable hygiene of the desktops was a barrier for some users. Regular cleaning of the desktops should be considered.
- The Library's environment is important to users. Often the same user would be seen on multiple days at the exact same desktop. However, preference is personal and for every user that told me they liked to work on the quiet floors the same number said they needed the noise and traffic of the 1<sup>st</sup> floor to concentrate.
- Ergonomics and privacy were not an issue for users. The convenience in terms of location and accessibility were consistently stated as the main reasons users used the desktops. Any changes that would affect the convenience and accessibility of the desktops, like requiring a login before usage, will be barriers for users.
- Users rely on the Library's desktops. Most users own a laptop and the majority of users bring their laptops every day. However, some users still use the desktops even if they have their laptops with them and other users don't bring their laptops because they know there are desktops. If there weren't desktops available most users would still have means of completing academic work. It would just be inconvenient. They would simply have to take out their laptops or bring their laptops which they would do, but grudgingly. The Library provides a convenient alternative with a favourable environment.

## Appendix A: Interview Guide

1. Why are you using the Library's computer?
2. What devices do you own?
  - a. Do you bring them to campus every day?
  - b. Why/why not?
3. What devices do you currently have on you?
  - a. What do you use these devices for?
  - b. Why are you using the Library's computer if you have these devices with you?
4. What tabs/computer programs do you have open?
5. How often do you use the Library's desktops per week in hours?
6. Do you always use the desktops on THIS floor?
  - a. Why/Why not?

## Appendix B: Lobby Survey Guide

1. Do you own a laptop?
  - a. Do you bring your laptop to campus?
    - i. Why/Why not?
  - b. How often do you bring your laptop to campus?
    - i. Why/why not?
2. What kinds of activities do you use your laptop for on campus?
3. Do you own a mobile device?
4. Which item do you think is a more critical requirement on campus: laptop or mobile phone?
  - a. Why?
5. Do you use the Library's desktop computers?
  - a. Why/why not?
  - b. What do you use the Library's desktops for?
  - c. Why do you use the Library's desktops AND bring your laptop to campus?