

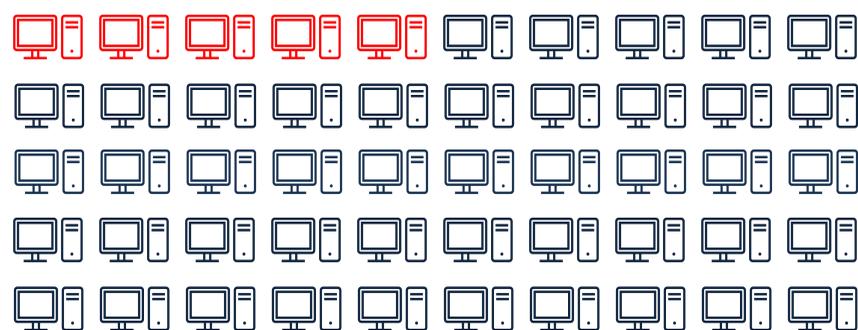
How many computers are enough? An approach to informing decisions on the number of public workstations in an academic library

Steve Borrelli, Head of Library Assessment
Leigh Tinik, Analysis and Planning Consultant

Background

The Penn State Libraries are continually evaluating library spaces, reconfiguring and renovating to accommodate the current and anticipated future needs of users. In planning for future renovations which consider removing one of the busiest computer labs on campus, Sidewater Commons, the question was raised as to how many public computers are needed in its main facility, the Pattee and Paterno Library.

Currently, Pattee & Paterno Library provides nearly 500 public computer workstations. Removing Sidewater Commons would eliminate 50 workstations.

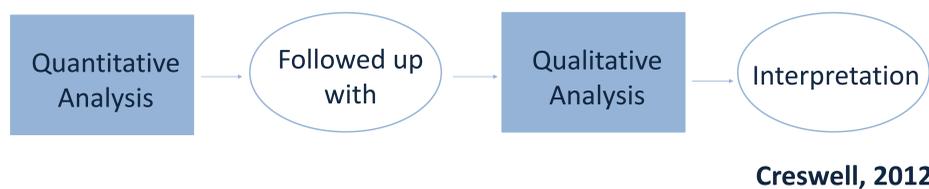


Research Questions

This investigation aims to inform future space planning by considering evidence including both historical usage data and user experience surveys in an attempt to inform the number of workstations needed to accommodate current and future demand. Specifically, will the removal of 50 workstations negatively impact capacity and user experience?

Methods

This investigation uses a **mixed method approach** pulling together quantitative historical usage data and qualitative survey data from multiple sources to confirm the results.



Data Sources

Quantitative:

- Quantitative historical usage data from the 2012-2013 and 2018-2019 academic years. This usage data was incomplete, containing usage information on 352 out of 491 computers. Total usage was extrapolated from the partial use data.

Qualitative:

- User experience survey inquiring about the awareness of computer availability throughout the facility conducted in 2020 (n=57);
- Local survey of laptop ownership and practices relative to bringing laptops to the library conducted in 2018 (n=536); and
- Ithaca S & R survey data on computer availability collected in 2016 (n=2204).

Data Analysis

The 2018-2019 usage data developed a picture of current usage and demand from which conservative estimates of the number of computers needed to accommodate demand were calculated using capacity utilization rates.

Capacity utilization rates =
actual computer use/
possible computer use

Assumptions to consider when estimating possible use:
Number of Days: 365 vs. 295
Number of Hours: 24 vs. 12

With limited exceptions, Pattee & Paterno Library is open 24 hours a day, 7 days a week. However, for a more conservative estimate, possible use was calculated using only 12 hours a day.

Capacity utilization rates:

	24 Hrs	12 Hrs
All Workstations (n=491)	20%	39%
Removing 50 Workstations (n=441)	22%	44%



Sidewater Commons

Results

Quantitative:

- Historical computer usage data showed a 35% decrease in the number of logins between 2013 and 2019.
- Estimates removing 50 computer workstations had relatively no impact on capacity utilization rates, increasing from 39% to 44%.

Qualitative:

- The awareness of computer availability survey showed that 93% of respondents knew where computers were located in other parts of the library building; and 90% of respondents at least sometimes used computers in other parts of the library.
- Similarly to Educause findings from 2016, a local survey of laptop ownership resulted in over 90% of respondents owning a laptop, 78% of which reported always bringing their laptop with them when coming to work in the library.
- Results of the 2016 Ithaca S+R survey showed that 72% of University Park students were satisfied with the availability of computers.

Conclusions

Findings from the quantitative analysis revealed that removing 50 computer workstations would not meaningfully impact capacity utilization rates, indicating that there are enough remaining computers in the Pattee and Paterno Library to absorb the demand. The qualitative analysis revealed similar results, that removing Sidewater Commons would not negatively impact user experience because users have a high likelihood of locating other computers within the library.

Implications

This investigation provides a path for informing decision-making with imperfect data by utilizing a mixed methods approach. Total usage was extrapolated using partial use data and capacity utilization rates were calculated using realistic rather than maximum estimates of possible use. Qualitative survey data was then used to confirm the quantitative results.