ABSTRACT
Traditionally, computer labs have a number of logical policies, one of which is to ban or highly restrict food and drink consumption. Evolving usage patterns of computer labs point to the desire by users to make computer labs more “lounge-like” and less “cave-like”. Managers of these spaces are accommodating this desire, and some managers have begun to relax these restrictions and allow some food or drink consumption under limited circumstances. Most are still uncomfortable with the idea of unlimited food and drink.

Two years ago, the College of Engineering at Colorado State University removed a 30-year ban on food and drink in its computer labs. The results are far from the increase in filthiness and equipment damage that are generally feared from consumables near computing equipment. In fact, the insignificant cost increases are far outweighed by the savings in staff time spent enforcing this unenforceable policy, and by the dividends of goodwill that our organization receives from its users. We explain why computer lab managers should reconsider their policies toward food and drink, and the potential benefits they can derive from relaxing or removing these policies.

Categories and Subject Descriptors
K.4.1 [Computers and Society]: Public Policy Issues – Computer-related health issues
K.4.3. [Computers and Society]: Organizational Impacts – Computer-supported collaborative work
K.6.2. [Management of Computing and Information Systems]: Installation Management – Computing equipment management, pricing and resource allocation

General Terms
Management, Human Factors.

Keywords
Computer Labs, Food, Drinks, Policies, Management

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Other concerns are confrontations with users, germ and sickness spreading, and preventing rodent/insect activity. Some seem concerned that students already do not take care of their work area or clean up after themselves, even with restrictions on food and drink in place.

Some organizations do allow food and/or drink in their computer labs to some extent. A majority (58%) allow water and other drinks in a closed container in any computer lab. 53% allow open drink containers only in certain areas, 56% allow food to be consumed in certain areas, while 44% allow it anywhere.

3. RATIONALE
The CoE had banned food and drink from its computer labs since its first lab of mainframe terminals was brought online 30 years ago. The reasons for the original ban are not recorded, but it can be assumed that the common wisdom of computer lab management prevailed. When computer terminals cost several thousand dollars, it made sense to keep hazards like drinks and food away from them to avoid potential mishaps.

In more recent years, however, the cost of common computer components such as keyboards and mice has gone down dramatically. These are now commodity items and often tracked in a separate maintenance budget rather than tracked as capital equipment.

At the same time, computer lab usage has risen significantly in the CoE. Higher enrollment and a changing culture have led to more students spending more and longer blocks of time in the computer labs. The CoE IT staff found that most staff contact with users in the labs was a result of enforcing the ban on food and drink, which resulted in a more negative perception of IT staff.

4. ENFORCEMENT
According to those surveyed, most (58%) enforcement of food/drink policies is done by lab managers or assistants, while instructors do 20%. It is generally agreed that instructors can make better use of their instruction time than enforcing lab policies. 33% of respondents don’t enforce policies at all.

In most cases, the worst users get is a verbal warning or lecture (45%). Other common consequences include the user leaving the lab and returning without the offending food/drink item (30%), and IT removing or throwing away the item (18%). Respondents report that 39% of the time, there are no consequences to a violation of this policy.

The CoE’s enforcement consisted of a verbal warning on the first offense, followed by closing the user’s network account until the user spoke in person to a manager. Subsequent violations resulted in closing the user’s account for a progressively higher amount of time (24 hours to start), and a mandatory meeting with a higher level manager or Associate Dean. When a user’s network account was closed, they could not log in to lab computers, or access computing resources, potentially causing grade penalties if they could not complete electronic homework assignments. Only twice in ten years did a user’s account reach the fourth level, which consisted of closing the user’s account for a week and a meeting with the Associate Dean of Academic Affairs.

One of the problems we faced is that although most of our computer labs were open 24/7 with swipe card access, we only staffed the labs during business hours. Thus, the policies were not enforced during evening and nighttime. With budget reductions, we only had enough staff to populate three of 15 lab areas even during business hours. Thus, it was impossible to enforce this policy consistently and fairly, which became a noted complaint.

5. CHANGE IN POLICY

5.1 Rationale
22% of computer lab managers surveyed have designed, built or remodeled a computer lab space specifically to address food or drink issues. We are no exception. In 2001, a new CoE computer lab called the Internet Cafe was created and populated with thin clients. The cost of an individual thin client unit was less than $300, which dramatically lessened the impact of equipment damage to the replacement budget. As part of the room’s theme, and responding to student requests, food and drink were specifically allowed in that one lab.

In three general IT and computer lab surveys between 2001 and 2008, students consistently rated a policy of allowing food and drink in the computer labs as one of their top priorities. One more lab of thin clients was exempted from the food/drink ban in 2008. Around that time, we provided a “food allowed” zone on one of the study tables in the most popular computer lab. Although students appreciated the extra food-consumption spaces, lab users had difficulty keeping track of which lab spaces allowed food (despite appropriate signage). Disallowed food consumption went up because of the inconsistency of the policy.

In March 2010, the Computer Lab Manager asked the ESTC to reconsider the ban and the ESTC agreed. Any food and drink was then allowed in any CoE computer lab and computer classroom space. This follows the larger trend: 33% of respondents to the survey have changed their policies from disallowing to allowing in the last two years.

Before the ban was lifted, other interested parties were consulted, including the other IT staff, college administration staff and the college student council. All agreed that the model of the labs that did allow food and drink could be consistently applied to the other labs and classrooms.

The Computer Lab Manager presented a plan that involved a minimal increase in cost for the change in policy. He anticipated a slight increase in equipment replacement, recommended additional cleaning tools and supplies including a commercial vacuum cleaner, and asked to add another student position to help clean the labs. Total estimated cost would be $750 one-time and $3,760 annually.

5.2 The Switch
After the policy was changed, the many signs in the labs were changed from forbidding food and drink to notices that these activities were allowed. The signs read: “Food and Drink Allowed Here: Please be respectful of your lab environment and clean up after yourself.”

Along with signage change, the website was updated, and the lab computer background images reflected the change in policy. The annual “what’s changed” email sent to students and faculty noted this change.

We provide sanitizing materials (disinfectant wipes and hand sanitizer) and cleaning materials (paper towels and disinfectant spray) for student use in the computer labs.
5.3 Repercussions
We did not see an immediate rise in cleanliness problems, broken equipment, or any other issues surrounding food and drink. In fact, the change in policy passed by quietly. Our lab assistants already incorporated keyboard, mouse, and surface cleaning into their everyday tasks, and adding another student position (for a total of four lab assistants) helped distribute the work. Our lab assistants report spending about 5-10 minutes per hour dealing with food- and drink-related spills and cleanup, both before and after our change in policy.

Over time, we saw a much reduced cost impact than we originally estimated. Keyboard, mouse, and mouse pad replacements amounted to only about $200 per year for approximately 400 computers, or an extra cost of $0.50 per computer. This was less than half of the estimated cost. The additional cost of student labor and cleaning supplies went toward making the labs cleaner and more efficiently operated as a whole, so the exact cost impact was difficult to measure. However, there have been no complaints surrounding cleanliness.

6. BENEFITS

6.1 Cost
25 survey respondents answered the question about cost recovery. The average annual amount per year to recover from food/drink mishaps or damages (from those who responded) is $428, or $1.52 per computer seat.

Assuming a computer station (PC plus monitor) costs $1000 and is on a 4-year replacement cycle, the annual cost for PC equipment is $250. That $1.52 results in a 0.6 percent added cost.

According to the survey, staff spends about 3 hours per week, on average, enforcing food/drink policies. Assuming a $10/hour wage, that is about $1,560 per year of staff time. The average number of computer seats from the survey is about 450, so that is about $3.47 per computer seat annually.

This shows that it is over 200% more cost efficient to allow food and drink, and purchase replacement equipment, than to enforce a ban on food and drink.

6.2 Public Relations
This goes beyond mere cost impact, however. The goodwill from our policy toward allowing food and drink has benefited our IT organization intangibly. Complaints against the IT organization and its policies, in general, have been significantly reduced. (Sometimes the only measure we can use, lacking adequate tracking or reporting features, is the number of complaints.)

In the past, our staff reported at least one verbal or physical confrontation with a computer lab user over the food and drink policy each week. These confrontations have entirely disappeared, creating a healthier workplace environment for our staff and a better rapport with our users.

6.3 Staff Impact
The impact on staff productivity needs to be considered. Without another difficult-to-enforce policy, staff is allowed to focus their limited resources on other things. Confrontations surrounding this policy create personal stress for the staff, and policies of this nature may create a hostile environment and intentional abuse.

(We once witnessed a faculty meeting in the computer lab space that involved a full dining experience. When asked why, the faculty responded that they thought the policy a bad one.)

6.4 Other Intangibles
As part of a welcoming lab environment with modern, comfortable spaces, allowing food and drink consumption helps keep the students happier and more productive. It encourages student camaraderie and collaboration.

Because we place a stress on our new signs (“YOUR lab environment”), and encourage responsible activity (“please clean up after yourself”), it drives the point home that the students need to be responsible for their actions and their environment, and helps teach a stewardship model to students. Indeed, it is far more the norm to see students cleaning up their area of food-related trash than leaving it. They seem happy to do so. Students even aid in identifying spills when they happen, because a student knows they will not be punished.

7. SOLUTIONS
If an organization is still considering a change in policy toward allowing food or drink consumption in the computer labs, consider the following.

Equipment is more respected if the environment is a social one, such as with comfortable seating, tabletops, cup holders, and more frequent trash containers. The CoE’s Internet Cafe was designed this way. After our policy change, we partnered with custodial services to provide larger and more frequent trash containers, and to allow our student employees to access custodial resources (trash bags and cleaning materials) as necessary. This allowed us to provide a more rapid response to problems, and custodial services appreciated a reduced workload.

Remove the computer or monitor from the “danger zone”. Install small form factor PCs that mount behind the monitor. In some cases, lab managers have installed both computer and monitor above the table. In the CoE’s Internet Cafe, we have glass tabletops with fully recessed monitors, and the thin clients are mounted underneath the table, so the only equipment students physically encounter is the keyboard and mouse.

Consider a compromise. Allow students to eat and drink in designated spaces, such as tables that are three feet behind each computer station. This may require more diligent supervision, however.

Whatever the policy, consider having a higher authority, such as a Dean’s council, set the policy. This can make a big difference in the success of the policy. For the CoE, our Computer Lab Manager specifically asked the ESTC (the student computing funding body) to form a partnership for the new policy.

8. REFERENCES