University of Minnesota

Twin Cities Campus

Instructional Space Utilization and Optimization

Full Report

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Challenge: In light of higher tuition rates and declining state support, the University now more than ever needs to place the highest priority on fiscal resourcefulness, institutional efficiency, and quality student services to remain competitive in the changing market. There is a perception that existing space can be utilized more efficiently, thereby reducing the need to build additional facilities to meet growth demands.

Charge: Improve the time utilization of classroom instructional space (both Central and Departmental space) on the Twin Cities campus to 71% for Fall 2006 semester (schedule production starts in November 2005).

Make recommendations regarding the development and implementation of utilization standards and criteria in other categories of instructional space by May 2005.

Note: Project team will provide recommendations to improve utilization by May 2005 but the actual implementation will be completed by another team or project phase.

Our Approach: Individual Interviews
- Craig Swan, Vice Provost for Undergraduate Education
- Peter Hudleston, Associate Dean, Institute of Technology
- Arlene Carney, Associate Dean, College of Liberal Arts
- Chuck Campbell, Faculty, Senate Finance and Planning Committee
- Peg Brown, Scheduler, Academic Health Center
- Alice Ross, Scheduler, General College
- Martin Sampson, Faculty, Senate Committee on Educational Policy
- Bob Crabb, Director, University Bookstores
- Jane Phillips, Lab Scheduler, College of Biological Sciences
- Sue Bartolutti, Former Scheduler, College of Human Ecology
- Joyce Clarkin, Scheduler, Physics
- Agnes Malika, Scheduler, African American Studies
- Joyce Wascoe, Coordinator, University Events

Focus Group Interviews
- 10 associate deans, administrators, and schedulers *(East Bank Campus)*
- 8 associate deans, administrators, and schedulers *(St. Paul Campus)*
- 10 members of the Classroom Advisory Subcommittee (CAS)
- 10 students *(East Bank Campus)*

Survey of Departmental Classrooms
Sent to 11 departments; 8 respondents include:
- English
- General College
- Journalism and Mass Communications
- Nursing
- Public Health
- Social Work
- Speech, Language and Hearing
- Theatre Arts and Dance

Survey and Review of Peer Institutional Practices
- Penn State
- Purdue University
- Northwestern University
- Indiana University
- Indiana University-Purdue University Indianapolis
- University of Wisconsin
- University of Illinois, Chicago
- California State Universities
- State Council of Higher Education for Virginia

Recommendation 1: Mandate use of Resource 25 by all departments.

> **Require departments to use Resource 25, the University's enterprise-level automated scheduling software, to schedule departmental instructional space by Fall 2006 scheduling process (begins November 2005). This practice will leverage the central scheduling system to give departments increased functionality, improve service and efficiency, and provide the University with comprehensive utilization data, which will assist in optimizing the use of valuable instructional space resources.**

Challenge

As of May 2005, there are 552 classrooms on the Twin Cities campus. Of the 552 classrooms, 291 (53%) are general-purpose classrooms; 261 (47%) are departmental classrooms. General-purpose classrooms are designed to meet the teaching and learning needs of a broad range of academic programs and to support the entire University. These classrooms may also be referred to as "central classrooms" because they are centrally scheduled, managed and funded. Departmental classrooms are designed to meet more specific and specialized needs of departments and are scheduled, managed, and funded by the assigned unit. In addition to classrooms, there are also 428 class laboratories, which are rooms primarily used by regularly scheduled classes requiring special-purpose equipment for student participation, experimentation, observation or practice in a discipline (Space Management, 2005).

As stated in our project's charter, "There is no specified measure or U of M standard for instructional space utilization in other than central (general purpose) classrooms. There is no systematic compilation of data in rooms other than central classrooms. By logical extension, the measures and standards for central classrooms could be extended to departmental classrooms. Anecdotal analysis of departmental classroom utilization for academic courses under these criteria indicates that utilization is very low compared to central classroom use."

According to a study conducted by the Office of Classroom Management (OCM), time utilization of general-purpose classroom for Spring 2002 (8 a.m.–5 p.m., 45 hour week) was 57%; while the utilization rate of departmental classrooms was 18% (Internal memo to Executive Vice-President and Provost's Office, July 2003).

Discovery

In our research, we found great variation in how various departments schedule and track usage of their departmental classroom space. Some departments use Resource 25; others use GroupWise, MicroPro, FileMaker Pro, Excel, Meeting Maker, paper calendars, note cards, paper charts, etc.

Excerpts from focus group participants reflect the variety of methods used to schedule and track departmental classroom space:

> *"We have 30 departments so it's hard to keep track. Some are using paper to schedule, some use UM Cal, meeting maker, etc."*
>
> -- Administrator

> *"We have a manual calendar that you can check to see if [a classroom is] open. It's a paper calendar."*
>
> -- Faculty Member

> *"We track but not sure with what? Each department tracks their own, not sure with what tool."*
>
> -- Assistant Dean

In our survey of eleven departments, eight departments responded about their management of 59 departmental classrooms, three science labs, and a gym used as departmental classroom space. Through this survey, we learned that four of the eight departments did not know their utilization rate; each department used a different system to schedule/track their classrooms; only one department had a concrete target utilization rate; and no department had sufficient utilization data from which to conduct trend analysis (*see Appendix A*).

The lack of a coordinated scheduling system for departmental classrooms creates inefficiencies. Discussions with schedulers illustrated that a primary frustration of scheduling departmental classrooms is that the scheduler must at times go to many sources to find available rooms, which can be challenging and time-consuming. Sometimes, schedulers do not know who to go to for information because there is no consolidation of data and no central system for scheduling departmental rooms.

> *"It takes a lot of effort to schedule space, and there are a number of people involved in the process. There is a need for protocols to be implemented (i.e. to assist in coordinating cohort groups, classroom technology, to develop a better understanding of available space and available technology)."*
>
> -- Scheduler

> *"I am currently using Meeting Maker to schedule space, which isn't integrated with OCM scheduling systems (R25), so OCM doesn't know what space I have, or likewise, I do not know what space OCM has available. So scheduling becomes more complex in using two systems."*
>
> -- Scheduler

Solution

In order to eliminate the variety of systems currently used to schedule departmental classrooms, it is essential to provide one, user-friendly software program that is free to all departments. It is also important that this software interface with the current system used by OCM to manage and schedule general-purpose classrooms. OCM has successfully piloted Resource 25, and is already observing success with departments voluntarily signing on to use the software, especially by departments with labs and studios because of its feature to detail unique assets in each room. Our PEL team recommends that the University require all departments to use Resource 25 by Fall 2006 scheduling process, which begins November 2005. In accordance with the University strategic positioning statement, we recommend that there be minimal opt-out for specific reasons agreed upon in advance. Our team believes this action will give departments the tools they need to better schedule, track, and manage their departmental instructional space, thereby improving individual departmental instructional space scheduling efficiency and utilization, and increasing the utilization rate for the University as a whole by giving visibility to vacant rooms so OCM can schedule unplaced courses.

Considerations

There is concern that departments will not respond favorably to the University requiring departments to use a particular software to manage departmental classrooms. Our PEL team anticipated resistance to the notion of a "mandate" to schedule and track classrooms that departments view as "theirs". Much to our group's surprise, focus group participants overwhelmingly supported a recommendation to mandate departmental use of Resource 25.

The following is a sampling of quotes from focus group participants in response to the suggestion of mandating Resource 25 (*see Appendix B for a full summary*):

> *"It would be wonderful. I think our current process is a bit weak."*

> *"I think it would be fine but would like an approval process to be included, that a gatekeeper would approve or have signoff. I see how it can help. Some space should be exempt (i.e. department conference space)."*

> *"We would be all for it! Since we wouldn't be giving up much."*

> *"Some wouldn't have a problem with it, but some would."*

> *"No problem. We have no problem with sharing our rooms either."*

As demonstrated by the selected quotes, most of the people we spoke with regarding a mandate of Resource 25 were in support of it. That is not to say, however, that they did not have concerns. The following is a summary of the primary concerns and responses addressing those concerns:

Departmental Concern 1: Departments Want to Retain Status as Gatekeeper and Select Rooms Entered into R25

Interviewees raised concerns over the role of gate keeping indicating that departments wanted to retain priority to "their" rooms and the ability to approve/refuse other requests. They also wanted to be assured that not all of the rooms had to be entered into Resource 25. Some rooms, like conference rooms, they felt were important to keep out of the system to ensure they were only available for their use.

Response: Resource 25 software accommodates both of these concerns. Departments preserve full control over use and scheduling of instructional space entered into Resource 25. Departments may choose to enter rooms other than instructional space (i.e. classrooms and labs) into Resource 25 but it is not required.

Departmental Concern 2: Central Administration Should Not Issue Unfunded Mandates

Many of the departmental administrators that we spoke to expressed frustration about the implementation process of ECAS and ECS. They noted that it required staff training time as well as additional ongoing staff time. People we spoke to said it increased their staff time anywhere from 20% to doubling it. In their estimation, duties that were once the role of central were pushed to departments giving departments "one more thing to keep track of" without providing any funding to do so.

> *"Automating is great but [Central has] to understand the impact on departments, the new scheduling process has created a lot more work for departments with no additional funding or staffing."*

> *"Before implementing something like R25, the University must know the impact of a mandate and evaluate how it affects departments and staffing. With ECS, it doubled the work but no extra staffing or funding were offered, and we still had to use our internal systems because of what we need generated."*

Response: Our team recommends that the University provide a training stipend to departments when they send staff to Resource 25 training. As Craig Swan recommended in his interview with our team, "Some [departments] would be leery, but we shouldn't reward the resistant folks. We should reward those who cooperate and work in the best interest of the University."

OCM acknowledges that departmental implementation of Resource 25 will require some initial training time and therefore require some investment in terms of staff resources, however, it is believed that Resource 25 will ultimately create efficiencies, which should result in a cost benefit. Resource 25 interfaces with PeopleSoft, which expedites the flow of course scheduling information to staff and students. Resource 25 also helps prevent double-booking of departmental space and its web viewer allows for a quick search of a room or lab's availability. Resource 25 can also generate reports that departmental schedulers and

administrators can use for future planning efforts. These benefits have the capacity to save departments time and money.

Summary

There are 428 class laboratories and 552 classrooms—291 general-purpose and 261 departmental classrooms—on the Twin Cities campus (Space Management, 2005). There is no specified measure or U of M standard for instructional space utilization in non-central classrooms and there is great variation in how various departments schedule and track their departmental instructional space. The lack of a coordinated scheduling system for departmental instructional space creates inefficiencies for departments and the University.

In order to eliminate the variety of systems currently used to schedule departmental instructional space, our PEL team recommends that the University require all departments to use Resource 25 by the Fall 2006 scheduling process, which begins November 2005. This practice will leverage the central scheduling system giving departments increased functionality, improving service and efficiency, and providing the University with comprehensive utilization data, which will assist in optimizing the use of valuable instructional space.

This recommendation is in alignment with future administrative actions outlined in the University's strategic plan. It recognizes the needs of individual departments while acknowledging the University as a single enterprise; it provides departments with opportunities to adopt best practices of other departments, and it promotes a culture that is committed to excellence throughout the University.

Recommendation 2: Continued enhancements of OCM reporting tools and data collection practices

> **Support Office of Classroom Management's (OCM) continued enhancements of existing reporting tools for central classrooms. Further extend utilization measurements and reporting to cover departmental classrooms as part of the broader implementation of central scheduling systems.**
>
> - **OCM needs to broaden usage of existing reporting tools by improving end-user training, education, and awareness of existing reporting tools and how they can be utilized to support their business process needs. If more users were *effectively* implementing available reports in their business processes and planning practices, there would be broader knowledge of space utilization, and in turn increased efficiency in the utilization of space.**
>
> - **OCM needs to continue enhancing existing reports and collaborate with stakeholders to identify additional reporting needs.**
>
> - **OCM should develop a user group and a supporting distribution list service to provide alternative communication channels for this user community. These forums would be a conduit for providing feedback, identifying and suggesting recommendations for improvements, and seeking resource support.**
>
> - **OCM should develop a process to identify units that should be implementing existing reporting tools in their business process. This process would include identifying such users, ensuring appropriate access and awareness of the tools, and directing them to the appropriate training mechanisms.**

<u>**Challenge**</u>

Our project charter indicates inefficiency in utilization of instructional space at the University of Minnesota. These inefficiencies have been measured and data is available to demonstrate this concern. Enterprise reporting tools are available but may not be as widely used across the University to provide decision-makers with the appropriate data to effectively and efficiently plan and project their instructional space needs. The underutilization of existing reporting tools may correspond to a lack of awareness and usability of these tools.

Discovery

OCM produces extensive utilization reporting on general-purpose (i.e. central classrooms), however, these reports cover *only* central classrooms. Departmental classrooms do not have any standard reporting criteria and there is no specified campus-wide methodology to track and report this data on a continuing semester-by-semester basis.

Some units have implemented effective strategies to incorporate reporting methodologies into their instructional space planning processes, while others are not using reports due to lack of knowledge of, or lack of past experience with the reporting tools. Departmental end-users, schedulers, and administrators perceive that OCM reporting tools need improvement to properly incorporate these tools into their business processes and planning.

The following excerpts from our research suggest an opportunity to expand use of current online OCM reports:

> *"I have used the reports, but they can be a bit misleading at times."*
> -- Scheduler
> (Note: This may demonstrate the participant's misunderstanding on how to appropriately use the reports).

> *"I like the reports and use them to view enrollment counts for courses. Very useful budgeting tool – projecting. The enrollment cube is great."*
> -- Administrator
> (Note: This is a user who employs reporting well into their planning processes).

> *"Standard reporting out of R25 is difficult. It adds higher loads on schedulers. I think that central should run curriculum utilization reports for requesting departments. […] R25 reports aren't always accurate specifically when looking for combined sections, these are sections scheduled by two schools and registered from either. So R25 works well for standard needs but any unusual situation requires manual handling."*
> -- Scheduler
> (Note: Again this may reflect a scheduler who may not know how to properly implement the reports in his/her planning process).

> *"I think that I'm in compliance with the OCM guidelines. […] I run IMS reports to find out how I'm doing and in most cases I'm around 61% for peak time use. […] I do use the Web view and IMS reports. I use IMS reports to get information about 60/40, credit hours, advising reports, etc."*
> -- Scheduler
> (Note: Again this demonstrates a scheduler using the reports to identify how well his/her department performing).

It is also recommended that OCM provide more information about the importance of "releasing" scheduled rooms, develop a report detailing "released rooms," and perhaps create

an incentive to release rooms. Focus group participants requested that OCM produce a report at checkpoints throughout the semester detailing rooms that have become available, so that these rooms could be used for other events (i.e. meetings, workshops, and other classes that may have an odd schedule).

> *"There seems to be a problem with rooms that get scheduled but never released. [...] They use the class 12 weeks out of 15 weeks and then don't release. Or someone might want to use it during the term and it appears as scheduled throughout the whole term, even though it's only used once [...] We often see classrooms that we wanted sitting empty even though it was scheduled."*
>
> -- Associate Dean

> *"If a space is continuously underutilized, is there a mechanism in place to cancel, move, or reschedule the space? There are lots of levels of people in the process...it can breakdown. Are we following up on cancelled courses? We have a room that says it's scheduled, but no one is in there."*
>
> -- Associate Director

> *"Produce a report for classrooms that are open at mid-semester for programs that offer workshops."*
>
> -- Scheduler

Currently OCM does not have a mechanism to identify if space is not being used after it has been scheduled, unless the requesting department advises that it is no longer required. It is the responsibility of the requesting department to release the unused space, and then it would display as being available. This would indicate another opportunity to improve the communication and awareness of this issue to appropriate stakeholders.

Solution

With an expected growth in central scheduling systems (ECAS, ECS, and R25), attention needs to be given to reporting and data analysis to support this growth, and to develop stronger buy-in and support in using these systems more broadly at the University. It is also critical that the reporting systems be user-friendly, well-marketed, and that appropriate training be provided to end-users to effectively and efficiently implement the use of the reporting tools in their business and planning processes.

Reporting has been one of OCM's key initiatives from the inception, but they have realized shortcomings during the implementation phases of the scheduling tools and continually revised the reporting tools.   Before implementation of Electronic Course Scheduling (ECS), the reporting dynamic was somewhat limited due to the age of the data in the reports. The data was typically two to three semesters old, which provided limited value. The data was also pushed to the department in hopes it would be implemented in the planning process, but this may not have been realized to its fullest potential. ECS, which went live a year ago, brought forward a much richer and robust reporting tool including an interface to the

PeopleSoft system that was incorporated with ECS Phase Two. The data is as near to real time as possible. The department can now pull the data as needed, which in the past could only be pushed to departments well after the fact. This is a progressive step forward in OCM's reporting tools.

OCM has had requests to strengthen their reporting paradigm. In consultation with OCM, the associate deans requested the ability to aggregate and trend data. OCM in partnership with IMS is currently enhancing existing reports to provide aggregation and trending capabilities. The objective is to a) provide the ability to trend or compare data of multiple terms; and b) provide the capacity to aggregate data at the college, institution, and campus level.

In collaboration with IMS, OCM plans for a July/August 2005 rollout of the enhanced reporting capabilities, using the campus-wide reporting methodology of UM Reports. They plan to develop a report breaking out total number of sections offered during a given term by campus location, meeting vs. no meeting time, meeting in a classroom vs. not meeting in a classroom, meeting in central vs. departmental space (replacing a current manual process). There are also plans to include multiple term trending capabilities. Online reports currently in production include: Projected vs. Actual Enrollment, Non-Standard Times, Cancelled Courses, 60/40 Rule, and Class Schedule Summary (*see Appendix D).*

Summary

The PEL team supports OCM's effort to enhance their reporting mechanisms because they will provide decision-makers with effective tools to assist in their business and planning processes. Expanding the overall use of the reporting tools will provide an improved method to track, monitor, and plan instructional space needs and improve overall utilization.

"The cost of space can be controlled only by managing its use and limiting the creation of new space" (University of Minnesota's Administrative Strategic Planning Task Force Report to the President, March 30, 2005). Managing use can be done by effectively employing reporting tools.

Recommendation 3: Create awareness of utilization issues through an educational-marketing campaign

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Ensure sufficient resources for OCM to:

- **Develop comprehensive marketing materials to expand existing educational materials and develop new content for further training of departmental schedulers.**

- **Establish a support entity to work closely with scheduling staff, departmental administrators, and faculty to provide timely helpdesk support.**

- **Require training (or re-training) for schedulers before the Fall 2006 scheduling process (November 2005).**

- **Follow up the training with a survey in January 2006 of schedulers who attended the training to examine the success of this project.**

Note: Since scheduling for Fall 2006 begins in November 2005, OCM must begin training and marketing as soon as possible to prepare schedulers for this implementation. Education and awareness must continue through the academic year 2005-2006 and beyond.

<u>Challenge</u>

Requiring the use of Resource 25 for scheduling departmental instructional space is an important step toward increasing the utilization of space but this alone will not achieve the University's desired utilization goals. There is a need for greater emphasis on educating the University community (administrators, faculty, and students) about classroom utilization issues. A better understanding of the issues, we believe, will lead to a higher level of cooperation and adherence to scheduling policies.

<u>Discovery</u>

OCM has developed and provides training as requested by departments and their schedulers. The problem is that many schedulers have elected not to attend these training sessions, which is why requiring basic level training for every scheduler is important to the greater utilization of space. Focus group comments indicate that although a great deal of documentation and policy guidelines are available through the Office of Classroom Management, there are still departments that are not familiar with what is available and where they can access this information. Although everyone we spoke with was grateful for OCM staff and the assistance

they provide, many felt that they did not receive enough training and that they were not familiar with all the details.

Focus group results also pointed to a greater need for better understanding and awareness of scheduling guidelines and utilization issues.

> *"People are starting to get the fact that there is a classroom shortage. You need to develop consensus and buy-in and provide education to Department Chairs and Department Administrators to start moving on to Resource 25."*

> **--**Associate Dean

Our review of peer institutional practices suggests that providing reasons for the implementation of scheduling policies and how compliance with these guidelines will improve utilization, not only saved millions of dollars for some universities, but also improved the quality of classroom space and graduation rates for their respective students.

A marketing and awareness campaign, along with enforcement from administration (Provost Office), plays a great role in acquiring support and achieving implementation goals. Information such as the following was used at other institutions to convince authorities of the need to implement utilization policies and standards.

> *California Higher education owns a total of 200 Million (GSF) of space for state colleges and universities. This represents an investment in excess of $60 billion in buildings. As enrollment demands increases, the state and local community college districts will be faced with the pressure to construct more buildings. But if new construction can be avoided through more efficient use of existing buildings, including application of utilization standards, there would be substantial savings. For example if construction of 1 percent of the amount of current investment in higher education buildings could be avoided, the savings to the state would be hundreds of millions of dollars.*
>
> > *Paul Guyer/Mac Taylor*
> > *Flexible Facility Utilization Standards*
> > *Higher Education*
> > *November 2003*

> *The average guideline for class usage is 40 hours per week; the average classroom station usage is 26 hours per week. SCHEV provides guidelines in hours per week and percent occupancy. Converting these numbers, the SCHEV format would result in a classroom guideline of 40 hours per week at 65% occupancy. The existing guideline for classroom is 40 hours per week and 60% occupancy. As an example, using the largest higher education system in the nation, California could accept an additional 54,000 students if they could raise their instructional space utilization by one hour per week.*

State Council of Higher Education for Virginia (SCHEV)
Space Utilization and Comparison Report
May 2004 (revised June 2004)

A common theme in all of our discussions with stakeholders was that the University provides many guidelines but no enforcement of policy. Some believe that lack of enforcement is due to department chairs' and college deans' lack of awareness and education of guidelines, which results in utilization problems. Schedulers believe that if there were better awareness of scheduling issues and the necessity of scheduling guidelines by faculty, there would be buy-in on their part and subsequently more cooperation with following guidelines (i.e. peak/non-peak, standard time, etc.). Schedulers also indicate that they need the backing of their departmental or college leadership on these issues to appropriately respond to faculty demands.

Solution

We recommend a top-down communications strategy where central administration provides clear information and recommendations to colleges, who in turn must inform their department heads, and they must communicate this information to their faculty and staff. A marketing and awareness campaign along with appropriate enforcement from administration (Provost Office) will play a great role in acquiring support and achieving implementation goals.

In addition to the top-down approach, another component of awareness must include an avenue to get feedback and input from departments to better understand issues related to non-compliance. OCM currently provides several vehicles and formats for gathering feedback but we believe they need to more actively pursue departments for their input.

Much of the information needed for a marketing campaign already exists in different formats and with some minor effort can be converted to new promotional materials. It may be beneficial to involve schedulers with best practices to work with OCM and tweak materials such as:

Documentation
- Scheduler's Manual
  Develop an electronic manual designed to serve as a permanent reference for schedulers. As changes occur, replacement pages are added to the web site.
- Departmental Space Agreement
  Provide an agreement form for departments transferring control to central for their departmental space with clear explanation of rights and responsibilities. Our understanding is that these forms already exist and that the only necessary step is awareness of the existence of these forms.

Training
  Training and education should be offered regularly using different methods to accommodate different learning methodologies and offering a variety of times and site options:

- Seminars
    Offer Pizza lunches for 1-hour seminars to attract more participants.
    After the initial offering, sessions can be offered as brown bag seminars.
    Offer special sessions for administrators and other decision-makers.
    Offer sessions at different times and locations on all campuses to simplify
    attendance.

- Online training
    Step by step guides introducing each tool should be created as PDF or Word
    formatted documents so they can easily be downloaded and printed.
    Using tools like Camtasia or Robodemo, full motion video tutorials can be
    created capturing screens and movement of the mouse or keystrokes to create
    online interactive training modules. This type of training allows the scheduler
    to use training on demand while using the applications. This type of training
    could also be used as follow up to hands-on classroom training.

- Hands-on training
    Hands-on classes should be offered regularly and on all campuses.

Supporting materials on OCM web site
- Searchable FAQs
- Regular updates on modifications, and resolutions to problems
- Recognition of best practices

Helpdesk Support
- Provide telephone and e-mail support for schedulers
- Use a call tracking system to track and escalate calls, gather information for FAQs, and develop areas of need for training and documentation

Scheduler's Discussion List
- Discussion lists similar to Net-People@umn.edu or Apple-l@umn.edu allow users with similar interests to have ongoing discussions and to share information and resolve problems. These lists have been very successful for many other areas of technology. Discussions on the list can provide topics for FAQs, the newsletter and for the Q&A column.

Electronic newsletter
- E-mailed to schedulers
- Use to introduce features
- Introduce solutions to problems
- Recognize best practices
- Accept submissions from departmental schedulers
- Offer a Question/Answer column

Summary

Greater emphasis on marketing and training is an essential component of a successful implementation of the PEL team's recommendations. Awareness of guidelines, policies, and the effects of non-compliance with these policies, coupled with the appropriate enforcement of such policies, will result in the efficient use of space, which should result in financial savings for the University and an improved educational experience for students.

Ultimately, it is important to provide information that clearly demonstrates how compliance with scheduling policies and use of available tools can streamline the scheduling process, increase the availability of rooms, and create better utilization to meet the University's goals for efficiency.

Recommendation 4: Enforce current policies related to utilization

> **Improve the utilization of valuable instructional space through a campaign of awareness, adherence, and accountability for following existing scheduling policies and guidelines. Articulate this goal as a provost-level institutional priority.**
>
> - **Improve awareness by creating a communication-educational campaign to increase awareness of the existing policies and issues related to the University's utilization rate, as well as a means to share best practices, resources, and tools available to promote effective and efficient scheduling.**
>
> - **Improve adherence by creating incentives to encourage departments that follow existing policies and/or disincentives for departments that do not follow existing policies.**
>
> - **Improve accountability by building a more effective means of enforcing existing policies using a top-down approach from central administration.**

Challenge

University scheduling and classroom use policies and guidelines were developed to "permit students to plan their classes rationally and that will permit maximal effective use of classroom facilities." (*Policy on Classes, Schedules, and Final Examinations*). Since the adherence and enforcement of these policies directly relate to the effective use of classrooms, the challenge the PEL group was faced with was to determine if the appropriate University staff were aware of the existing policies, as well as to determine how well these policies and guidelines were adhered to and enforced. According to the PEL group's charter "there are a number of ongoing inefficiencies that are directly related to classroom utilization, including: unplaced courses; excess cancelled courses; over-projected enrollments; excess non-standard courses and overuse of the peak time period by many departments."

Discoveries

Policy Awareness: University Senate and Provost approved policies and guidelines related to scheduling and the use of classrooms have existed for some time; however based on focus group and interview participant responses, there are various levels of awareness and understanding of the policies and guidelines.

During our focus group sessions, participants were asked to rate their familiarity with existing scheduling policies and guidelines. On a scale of 1-10 with 1 equal to "not familiar at all" and 10 equal to "very familiar", 16 of the participants rated themselves at a level of six or higher and only 1 participant rated himself at a level less than six. Even though almost all of the participants rated themselves knowledgeable with scheduling policies and guidelines, the

statements made later during the focus group sessions and in individual interviews suggest that they may not know as much as they think, particularly about the important details and exceptions related to the policies and guidelines, as well as helpful tools and resources available to help them manage their scheduling processes.

Excerpts from focus group participants below reflect the various levels of understanding of policies, guidelines, and resources/tools to assist with scheduling:

> "*I think projected vs. actual is a problem; faculty tend to over-project. There should be some guidelines or limits set on over projecting, say 10%.*"   -- Associate Dean

> (Note: This may show that the participant is unaware of the existing standard in place regarding the plus/minus 10% when comparing projected versus actual enrollment.)

> "*I had just recently stumbled upon the OCM ("Office of Classroom Management") website.*"
>   -- Administrator

> (Note: This shows that the participant was unfamiliar, until recently, that a website with helpful scheduling information and tools even existed.)

> "*Grad programs don't always fit well in standard time methodologies. We have different needs.*"
>   -- Scheduler

> (Note: This may reflect the scheduler's misunderstanding of the fact that the policy allows graduate and professional school exemption from standard class times if held during off-peak hours or if scheduled in a room controlled by the department).

> "*The 60/40 rule is a disadvantage for the St. Paul campus because we start at 8:30 a.m. It should be based on periods, not times.*"
>   -- Scheduler

> (Note: This is a misunderstanding of the policy; the policy is based on periods, not times.)

> "*Maybe provide a place to justify why there is a need for nonstandard time (i.e. exception process).*"
>   -- Administrator

> (Note: Again, a misunderstanding of the process. A justification process is in place where nonstandard courses can be approved by the Associate Dean).

Overall, focus group participants wanted to see an emphasis placed on educating the University community (administrators, faculty, and students) about the problems associated with utilizing classroom space. They felt that a better understanding of the issues would lead toward more cooperation with adhering to policy. They recommended this include a communication plan developed by central administration and handed down to departments with a clear recommendation to communicate the information to faculty and staff of the colleges' various departments. It is important to note that a number of department schedulers often feel they do not have the involvement with and support of their department chairs and/or deans when dealing with scheduling issues.

<u>Policy Adherence and Enforcement:</u> When asked which policies are the hardest to follow, participants were split between: actual/projected enrollment; the 60/40 rule; and the standard/nonstandard course time requirements. Participants agree that over-projecting enrollment and non-compliance with policies creates scheduling utilization problems and therefore compliance is critical for creating effective utilization.

Excerpts from focus group participants below reflect their thoughts about the over-projection of student enrollment. Many participants agreed that departments predict more students will enroll than how many actually end up enrolling. Some expressed that they are putting more controls toward this issue.

> *"I think projected versus actual is a problem. Faculty tend to over-project."*
>
> --Associate Dean

> *"I feel over-projecting leads to the overall problem at OCM."*
>
> -- Administrator

> *"Overestimating students is a big issue."*
>
> – Associate Dean

> *"Try to limit abuse. Faculty are clever and try to project higher."*
>
> -- Associate Dean

Several participants voiced concerns regarding the standard/nonstandard course time policy. Participants requested that penalties be removed so that departments are not punished for scheduling issues that are grounded in their pedagogy. Although there is a process by which exceptions can be approved, there remains a penalty in that these classes are not scheduled during the first round of the scheduling process and room assignment is not guaranteed.

> *"The nonstandard time classes are an issue because we get penalized for having nonstandard time classes. Our pedagogy is such that there is no choice. We are not avoiding the rules; this is very deliberate. We need to make some changes so there are not penalties to deliberate actions. OCM guidelines don't fit every program [and we] need to make room for exceptions. How we schedule should not affect how we teach."*
>
> -- Administrator

> *"Central scheduling system works really well, but where it falls down is when it penalized nonstandard courses without considering why there are nonstandard courses."*
>
> -- Administrator

> *"I want an acknowledgment that one size does not fit all."*
>
> -- Administrator

> *"I want the penalties removed for non-standard times."*
>
> – Administrator

Another department mentioned their particular issues with the 60/40 rule related to online web courses:

> *"We have all of these online courses, and as we convert our courses to the Web, we no longer need a room however, we get no credit for that (towards the non-peak time) Those minutes don't count for anything – as we do more and more online, our percentages get worse and worse. We need to give departments some credit for limiting face-to-face classrooms."*
>
> -- Scheduler

Some participants understood the importance of upfront planning, strategic enrollment management practices, and complying with existing policy:

> *"I perform enrollment management duties and believe if you provide OCM more information up front, you'll receive the space you need. If you do more upfront planning (knowing your faculty and how they teach), you'll get what you need."*
>
> -- Scheduler

> *"It has helped put some controls back on the departments to meet deadlines and has forced them to plan better, which I think is very positive."*
>
> -- Administrator

Administrative strategic planning when scheduling is critical as evidenced by some of our student focus group participant responses below:

> *"Because of scheduling conflicts, I couldn't take a required class I needed, so I had to make a decision in taking this course eventually and keeping this major or changing my major."*
>
> -- Freshman, CLA

> *"There is problem that the university assumes that everyone graduates in the spring. I'm in the Supply Chain major in CSOM and some classes are*

only offered in the spring, so this could be an issue (if you don't plan out
appropriately)."

-- Junior, CSOM

"When I was scheduling for fall term, there were 3 classes I wanted that
were all scheduled at the same time. I had to choose something I needed
over something I really wanted. Some classes are only offered in spring
or fall (once a year). I have to map it all out to make sure it works out."

--Junior, CLA

"I'm graduating this spring. I had to look at the schedule (and historical
schedules) way in advance because of so many course conflicts. Then I
tried to register, but it was full."

-- Senior, CLA

Participants provided their feedback on policy enforcement. Most believe that central
administration needs to enforce the existing policies more strongly so that all departments are
complying. Participants that commented on policy enforcement believe there needs to be
more of a "push" from central administration and more "teeth" in the policy. They also added
that policy enforcement should take a "top down" approach. A need for consistency among
departments was also mentioned. The comments from participants suggest that with increased
enforcement comes increased compliance, which ultimately results in better space utilization:

"I believe administration needs to enforce policy."

-- Administrator

"Deans of colleges need to be involved and support policy (others too,
department heads, chairs, etc.)"

-- Scheduler

"You need to have department administration enforce, but have Central
do it first."

-- Scheduler

"OCM should just look at the average over the past and pop in 10%
increase and that's it, instead of us having to strong-arm the faculty."

-- Associate Dean

"I get about 200 different requests to offer courses outside of standard
times. There has been no push from Central back to the departments to
enforce the 60/40 rule."

--Administrator

One of the issues discussed with the participants was the lack of interest from both students
and faculty to attend and teach early morning and late afternoon classes, which leads many
departments to schedule more during peak time resulting in non-compliance to the 60/40 rule.
Many times the participants mentioned that students do not want to take classes at 8 or 9 a.m.

The added complexity with this issue is that student enrollment drives revenue for colleges, which results in the desire for the college to offer classes when students are most likely to enroll:

> "*My departments are under pressure to keep enrollments high and because of the 60/40 we find that students are voting with their feet. They will not take eight o'clock classes.*"
>
> <div align="right">--Administrator</div>

> "*There's resistance by faculty and students to teach and take classes at the front and end of the day.*"
>
> <div align="right">-- Associate Dean</div>

Solutions

Policy Awareness: Based on the focus group and individual interview responses, as well as data from the IMS reports, there is a lack of policy awareness and compliance with these policies. Therefore, it is recommended that a communication/educational campaign be created to:

- build an increased awareness of the existing scheduling policies and guidelines and why compliance to these policies is critical
- build an increased awareness of the current utilization rate, the goal utilization rate, the issues related to the University's utilization rate and why this issue is of importance

By increasing awareness and building the case that this is a University-wide issue for which all participants need to address, we can work together towards solving the problem.

It is also recommended that a listserv and/or other communication forum or tool be established to:

- share best practices between schedulers
- find out who the schedulers' peers are, which can help when in need of scheduling in other department's space
- allow Office of Classroom Management (OCM) to share information about utilization and build a better understanding of the policies
- allow OCM to highlight upcoming training events, IMS reporting tools, and other resources and tools available to promote effective and efficient scheduling
- allow OCM to build further awareness of the benefits of R25
- allow OCM to highlight departments that are scheduling well

This communication/educational campaign will need to continually educate staff on the existing policies, reinforce the critical needs for these policies, and highlight the importance for all schedulers, faculty, administrators, and deans to adhere to these polices. Schedulers would be required to be members of the above listserv.

Some of the statements from participants below show the need for such a communication campaign:

> *"When we develop relationships with other departments, we can call upon favors to utilize each others' classrooms."*

> *"Consider communication about policy to colleges or the lack of. If I get a general email, I'm not sure if it applies to me; communication and email needs to be very specific."*

> *"Increase communication. Better communication of policy, process, etc."*

Policy Adherence: Based on the focus group data and other supporting justification data, it is recommended that incentives be created to encourage adherence to existing policies and/or disincentives for not adhering to existing policies. The resistance to comply with policies could be reduced if incentives or disincentives were established. Below are some of the comments from focus group participants related to incentives:

> *"Build incentives. Provide support, accolades to those doing a good job of scheduling."*

> *"Highlight departments that are doing well."*

> *"Reward best performing schedulers."*

- **Incentive/Accolades Program**: Develop a system by which departments who are scheduling well and complying with policies are rewarded or recognized. Departments should be highlighted in University publications, recognized on the Office of Classroom Managements (OCM) website, and/or acknowledged through various other meetings and venues. Awards or certificates should be given on a monthly basis for those complying with policy.

- **Disincentive and Penalty Program:** A "three strikes, you're out" program needs to be implemented beginning with the fall 2006 scheduling season to provide a strong disincentive for non-compliance with policy.   The program involves the following:

  1) Develop a process by which departments that are not complying with polices are notified with a warning from OCM. This warning would be accompanied by a strong recommendation that additional training for schedulers and/or meetings with OCM for assistance on improving scheduling practices occur immediately.

  2) The second subsequent semester of non-compliance would result in a warning directly from the Provost Office. This warning would be accompanied with a requirement that a meeting between the department and OCM occur to identify exactly what policies are not being adhered to, as well as assistance in identifying improvements to compliance and scheduling practices.

3) The third subsequent semester of non-compliance would result in the inability for that department to schedule classrooms in centrally-scheduled classroom space for at least one semester. Departments would be required to schedule in their departmental classrooms or other departments' classrooms. It would be a requirement of that department to complete and submit a written plan to OCM detailing how compliance will be attained for the next semester of scheduling. Exceptions to this penalty would need to be submitted for review and approval by the Provost Office.

Note: Another option to item number 3 above could be that a third subsequent semester of non-compliance would result in all centrally-scheduled classrooms for that department would be scheduled after the first scheduling production run (i.e. that department's courses would be scheduled in a lower priority order).

For the disincentive/penalty plan above, non-compliance with policy would be defined as: 1) Scheduling over-projected enrollment by more than 10%, 2) Excess use of peak time (i.e. the "60/40 Rule"), 3) Excess non-standard courses, and 4) Excess late changes and course cancellations.

In addition to the incentives and disincentives programs listed above, it is imperative to address the excess canceling of classes. The cause of the excess cancellation problem is related to two things: 1) Administrators and faculty being overly optimistic in their anticipated enrollment and therefore over-projecting the number of students expected to enroll or over-projecting the number of sections needed for a class, and 2) Students having the ability to "shop and drop" courses without any penalty. Currently, students can still get a full refund of tuition and fees through the first week of the semester. In addition, the dropped course is not listed on the student's transcript if the course is dropped during the first week of the semester giving further incentive to "shop and drop". Grades of "W" (withdrawal) are posted to the student's transcript if the course is cancelled after the second week of the semester.

Add and drop activity is quite heavy several weeks prior to the semester start date and into the first week of classes. Statistics for fall 2004 from the Office of the Registrar show that 19,000 Twin Cities courses for undergraduate students were dropped over a three week period (from August 24, 2004 to September 14, 2004). This high volume of adding/dropping courses creates problematic issues for the scheduling of courses.

Statistics from the Office of Classroom Management also show that 180 courses were cancelled by departments (mostly due to low or no enrollment) during this same three week time period for fall 2004.

The over-projecting of enrollment (as well as over-projection of course sections) combined with the student's ability to shop and drop without penalty or disincentive often results in courses with very low (or no) enrollment that need to be cancelled by faculty. This is not only bad customer service for our students (e.g. canceling a course with some, albeit low, student enrollment), but ultimately causes problems for the faculty themselves as they will not be able to teach the course and many times have a contract to teach a certain number of hours or

courses per semester/year. Overall, this causes problems with scheduling and lowered utilization rates since the room was originally booked for the entire semester and it is now too late in the semester to place another course there and of course, the room goes empty for this time period for the remainder of the semester.

Disincentives for both faculty and students should be considered for practices that lead to courses that need to be cancelled. Some focus group participants recommended a fee (e.g. $10) for dropping a course to deter students from the shop and drop practice. However, further review and research is necessary to determine if this is appropriate. Another possible solution may be to allow students to have only a certain number of cancelled courses or withdrawal requests per semester.

Although it was mentioned by several focus group participants that the penalty for nonstandard course times should be eliminated so departments are not punished for scheduling issues that are grounded in their pedagogy, it is not being recommended by the PEL group that this penalty be removed. There is currently a liberal exception process for departments to get approval from the associate dean's office for nonstandard course times and then schedule in a departmental classroom or resubmit for assignment in a central classroom on a lower priority/space available basis. There is also a mechanism for nonstandard courses to be grouped together to form a standard time block unit, which OCM then processes as a standard course unit, which results in no scheduling penalty. This nonstandard course time policy is very common among most of the peer institutions we surveyed. "Deviation from the standard teaching time scheme is a major contributing factor in reducing classroom utilization" (*Classroom Utilization Report*, March 18, 2003).

Policy Enforcement: Based on the focus group data and other supporting justification data, it is recommended that a more effective means of enforcing existing policies be developed using a top-down approach from central administration. For this recommendation, "Central Administration" is defined as the Senior Vice President of Academic Affairs and Provost Office ("Provost Office").

Many of the focus group participants and individuals interviewed voiced the need for stronger enforcement of the existing scheduling guidelines and policies. As several administrators stated:

> *"The policies that exist and the systems that are in place are good, but the problem is with enforcement. We need to convince the decision-makers of this and that we need to place a higher value on the responsible use of resources versus trying to always appease the deans and department heads."*

> *"We currently have no mechanism for enforcement. It's all carrot, no stick."*

It is critical that the Provost Office support the existing policies by enforcing them. There needs to be zero-tolerance for non-compliance with policy. A communication effort needs to happen so that all affected parties including faculty, deans, administrators, directors, and

scheduling staff are aware that adherence to policy is a requirement and that beginning immediately all scheduling activity will be reviewed closely and all policies will be enforced. It is critical to highlight the scheduling issues the University is faced with and how everyone's participation can result in increased utilization and possibly large amounts of monetary savings for the University.

Adherence and enforcement is a two-way street, which requires both parties doing their part to bring about the most efficient use of space through effective scheduling. The Provost Office needs to strictly enforce the policy; however departments (including schedulers, administrations, faculty, associate deans, and deans) all need to do their part. Departments need to have a teamwork philosophy involving their faculty, department heads, and schedulers when planning their scheduling needs. They need to actively manage their enrollments and clearly identify their requirements. Department heads and deans need to be actively involved and be accountable for their scheduling processes. Departments have been empowered by being provided information and tools that facilitate their compliance with the University approved policy. Reports are designed to help departments better manage their instructional space and to empower departments to follow policy.

In addition to this, "OCM provides a role in being the primary point of contact and single point of responsibility and accountability for all Twin Cities general purpose classroom issues" (Office of Classroom Management mission). The quote below demonstrates that the scheduling customer's expectations do not match what OCM is actually providing. Better alignment of these two things is necessary in order for the scheduling process to work for both parties.

> "*OCM is willing to work with me, but they are getting more and more like they want me to find the rooms myself (for unplaced courses), which was a great surprise to me. I didn't realize that was supposed to be a part of my job. When they called me to ask where I would be putting my 50 unplaced courses, I was astounded.*"

It is recommended that OCM continue to be the single point of responsibility and accountability for the Twin Cities general purpose classrooms, which means they are responsible for doing whatever it takes to find appropriate classrooms for the necessary courses.

Other recommendations:
One specific recommendation that needs to be implemented for the fall 2006 scheduling period is to roll forward the previous actual enrollment attained when determining the projected enrollment for the next corresponding semester. Currently, the mechanical handling of projected enrollment involves the rolling forward of the previous corresponding semester "Requested Room Capacity" field. Departments will need to justify any exceptions to this new guideline to their appropriate dean. This new guideline will limit the overestimating of enrolled students.

Another specific recommendation is to require (as part of the compact process), that each college needs to demonstrate with data from the IMS reports how well they are complying the existing scheduling/space utilization policies.

Best Practices from other institutions that could be implemented at the University of Minnesota:

1) Penn State: Departments that schedule best and utilize space best get a higher priority in the scheduling process.
2) Penn State: One problem they had was that classes were less heavily used after 2:30 p.m. To improve utilization, they came up with other ideas including: Upper level courses (for juniors and seniors) can be offered for 75 minute on Monday/Wednesday if the start time is 2:30 p.m.
3) Indiana University: In classes enrolling 30 or more students and where the estimated enrollment exceeds the actual enrollment during the previous corresponding semester by more than 15%, the department must attach a written explanation for the estimated enrollment. Without a written explanation, assignment will be based on the actual enrollment during the previous corresponding semester, allowing for an increase of not more than 15%.
4) University of Wisconsin: Departments who schedule their own classroom space are eligible to request general assignment classroom space. However, their space requests will receive low priority until their departmentally scheduled classrooms (in similar seating capacity ranges) achieve at least 20 hours of formal credit instruction per room, per week.
5) Purdue: All general-purpose classroom facilities are scheduled and centrally managed by their Office of Space Management and Academic Scheduling. Because of this, utilization data for all space (classrooms, departmental labs, gymnasiums, offices, etc.) is available centrally. This office also does all the projected enrollments centrally. Regarding the issue of "excess course cancellations": Their utilization data takes course cancellations into account. If there were to be a large number of cancellations, a department would receive less classroom time the next corresponding semester.

Summary

It is critical that the lack of awareness about scheduling policies and the lack of understanding the issues facing the University regarding space utilization be addressed through a strong communication plan, as well as an educational/training campaign. The issues surrounding policy adherence and enforcement need to be addressed immediately in order to solve the short and long term problems relating to space utilization. The Provost needs to make compliance with existing scheduling policies an institutional priority and there needs to be more involvement and accountability by Department Chairs and Deans. Our team believes the implementation of these above recommendations will improve the time utilization rate and the station occupancy rate.

If departments manage the scheduling process well through thoughtful planning and the use of IMS reports, comply with the existing policy, and OCM schedules the classes in appropriately

sized classrooms, then we anticipate that this will result in an increased station occupancy rate, in addition to improved time utilization. Strategic enrollment management practices (planning and accuracy) along with adhering to policy equals increased space utilization and success for all (students, schedulers, faculty, OCM, and the Provost Office).

The above recommendations are in alignment with the recommendations outlined in the University of Minnesota's Administrative Strategic Planning Task Force Report to the President (March 30, 2005) under the action to "optimize the use of the University's physical, financial, and technological resources". As stated in the report, "The cost of space can be controlled only by managing its use and limiting the creation of new space. Integrate accountability for effective space usage into University planning at all levels. Provide incentives for units to focus on effective uses of appropriate, well-equipped, and well-supported space (quality) rather than amount of space (quantity)."