# Executive Summary

The University of Illinois at Urbana-Champaign campus has centrally provided email services for years. Perceived deficiencies in these services have led many units to run and use their own local email services. Campus has never provided a free central, common calendaring system. The calendaring options available from CITES have always been provided as fee-based services. Similar to email, this has led to many units running their own local calendaring services. This fragmentation has led to increased costs (due to duplication of services) and missed opportunities for enhanced productivity, in particular with calendaring. The true value to be gained from any new service would be in unifying calendaring across campus, UA, and even the other campuses. The Campus Email and Calendaring Refresh Committee was charged with making specific recommendations on what email and calendaring services should be provided to all faculty, staff, and students on campus.

The usage of email and the options for providing email services have changed dramatically in recent years. Texting, instant messaging and social networking services such as Facebook have replaced email as the dominant communications mechanisms for younger generations. Free email services, in particular Google’s Gmail, have become main stream with feature sets often exceeding what commercial services provide. Privacy and legal issues, as well as some technical issues, limit the extent to which these services can be used. Despite these issues, there are strong reasons for taking advantage of these services for some portions of the campus user population.
There are three primary groupings of campus users: undergraduate students; graduate/professional students; faculty/staff. Virtually all undergraduate students arrive on campus having used email for years and already having established email accounts on services such as Gmail. Even though campus provides them with an email account, survey results show that a significant number are choosing not to use their campus email and instead forward their email to their existing off-campus accounts. Faculty/staff, however, do still primarily use their provided campus accounts. There is evidence that for a number of faculty/staff who are forwarding their email off-campus, that this is being done primarily because the campus service no longer meets their needs, most notably with the size of the provided quota. Legal and privacy issues, in particular related to FERPA, created difficulties with recommending the use of off-campus email services by faculty/staff. Graduate and professional students are difficult to address because they frequently act as both student and staff simultaneously.

Faculty/staff have significant scheduling needs beyond what undergraduate students have. As with email, the calendaring needs of graduate students varies depending on their current role. All major email options that now exist include integrated calendaring. From a technical perspective, there are relatively few differences between the available solutions for email services. The same is not true for calendaring functionality. Because of this, the calendaring abilities of the various solutions were of greater importance to the final recommendation.

Among the units providing their own email and calendaring services on campus, Microsoft Exchange is the dominant deployed solution. Units independently chose Exchange because it met their needs, in particular for calendaring. Exchange will be an easier migration path for many units because it is already the environment that they are running.

The committee’s final recommendation is based on taking into account the expressed needs and interests of the three defined user communities. The needs of these groups are not identical and the proposed solutions reflect this. Technical, legal, and privacy needs mandate that faculty/staff email/calendaring services continue to be provided on-campus at this time. Similar issues do not exist for the majority of undergraduate students. A large percentage of graduate students are functioning as staff at any given time. Further, graduate students frequently cycle between having and not having appointments. This makes it desirable, and even necessary, to always treat graduate students as staff as far as their email and calendaring needs are considered.

CITES Express licensing will expire on December 31, 2010. Users of the Express service must be fully transitioned to the new services by this time. The transition schedule for other user groups can be handled independently.

The committee understands that the recommendations must be cost neutral when looked at on a campus-wide basis. The committee does not have comprehensive cost figures that include all campus-related email and calendaring expenses, but a study is currently being completed by CITES that should be used in conjunction with this report to guide final adoption decisions. The committee does believe that the recommendations in this report have been sensitive to the charge to be cost neutral.
Microsoft Exchange is recommended as the email and calendaring solution for faculty/staff and graduate/professional students as the best fit for our campus. Google Gmail and Microsoft Live@edu are recommended for undergraduate students with those students being allowed to choose which they actually use, which matches students’ strongly stated preferences. Support must be provided for using these services from mobile devices, a major growth area. Training must be provided to facilitate the transition to these new services and to ensure that all new functionality is able to be fully utilized. A governance structure must be put into place to both ensure the proper functioning of the new services as well to provide the guidance required to keep them up-to-date as campus needs evolve.

Guiding Principles
1. Email and calendaring solutions are essential productivity tools that "enable and support our educational, research, and engagement programs."
2. Users seek solutions that provide them with features they value. There are often generational, social, and other personal contexts to their preferences.
3. It is highly desirable that there be a) interoperability among calendaring solutions used by constituent groups and b) interoperability between these tools and other applications that can utilize them.
4. The University needs an efficient method of scheduling meetings and resources.
5. Accessibility and usability are critical.
6. The solution must support mobile devices.
7. The solution must be cost-effective, reflecting institutional values of "sound stewardship and maximum impact".

Primary Recommendations

Summary
1. Email and Calendaring Solutions
   a. Replace the existing CITES Oracle Calendar, CITES Express, and CITES Exchange services with a new, subsidized service built on Microsoft Exchange 2010.
      i. Provide accounts on this service to faculty, staff, graduate students, professional students, and retirees.
      ii. Provide a default quota of at least 5GB for faculty/staff and 2GB for all others.
      iii. Design the service to facilitate merging it with University Administration and the other campuses at some point in the future.
   b. Negotiate contracts with both Google and Microsoft for their existing free email services. Migrate undergraduate students to these services, allowing them to choose to activate one, both, or neither service (in which case students must still register a valid email account to send their @illinois.edu addressed email to).
      i. Both services should be configured such that students’ email addresses continue to be @illinois.edu.
ii. The small number of undergraduate students who work with sensitive data must be provided with accounts on the subsidized Microsoft Exchange service.

2. Mobile Support
   a. The CITES Helpdesk should officially support mobile devices that can sync with the Exchange service either via the ActiveSync protocol or the BlackBerry Enterprise Server. This includes BlackBerry, iPhone 2.0+, and Windows Mobile devices.
   b. For BlackBerry users, fully subsidize the one-time client license cost for faculty/staff but require students to pay the ~$60 cost.

3. Training
   a. For the first year of the transition, provide free CITES FAST3 training on using Outlook, Entourage, OWA (the Exchange web interface), and Apple Mail and Apple iCal (when integrated with Exchange). Free online training courses on these same subjects should be provided on an on-going basis.

4. Governance
   a. A campus-wide Email/Calendaring Governance Committee must be created to monitor the performance and effectiveness of campus email and calendaring services, address policy issues related to these services, and to oversee future changes in the provided services to ensure that the evolving email and calendaring needs of campus continue to be adequately addressed. The governance committee should report to the campus CIO with a dotted line report to the Council of Academic CIOs.
   b. The Email/Calendaring Governance Committee should be charged with establishing technical advisory boards to oversee the operational details of each campus email and calendaring service. These technical advisory boards would report to the governance committee.
   c. The governance committee and the technical advisory boards must both have representation that includes relevant stakeholders from campus units (both academic and non-academic). The governance committee should be composed primarily of unit and business area leaders, not technical staff.

Who – Audience Scope
The committee was charged with evaluating the needs of three primary groups: faculty/staff, graduate students, undergraduate students. The committee identified two additional groups that required consideration: professional students and retirees. A number of observations about all of these groups impact the committee’s recommendations:

- Faculty/staff have email and, in particular, calendaring needs beyond what students typically do.
- Administrative responsibilities are a major driver of faculty and staff calendaring needs.
- A significant percentage of graduate students have email and calendaring needs that align more with those of faculty/staff than of students.
- The particular discipline of professional students impacts whether their needs align more with faculty/staff or regular students.
• Retirees are currently provided with CITES Express accounts that must be renewed each year. The committee believes that retirees must continue to be provided with accounts on the new service based on section IX-F-4 of the CAM\textsuperscript{1}.

It was also determined that a number of campus units do a substantial amount of scheduling with UA units (in particular OBFS and AITS). This is the source of the recommendation that the campus service eventually be merged with the UA service.

There are additional off-campus people who need to be covered by the new service, most notably University of Illinois Extension staff. Some affiliates of the University may also occasionally require accounts. In order to address the needs of these users, it will be necessary to modify the current campus AD identity management environment of the campus, and a separate campus initiative has already begun work to address those needs.

**What – Email and Calendaring Uses**

Surveys of email and calendaring usage provided an interesting glimpse into campus adoption and trending patterns. The results show a clear difference in the way students, faculty and staff use email and calendaring, so they will be addressed in separate sections.

**Faculty and Staff Email Usage**

Email is a key communications mechanism for faculty and staff. They expect it to be highly reliable, easy to search, and accessible from wherever they are. For many it is also an information repository, a file storage system and even a task list. Because of these additional uses, they want sufficient storage space to store all of the email that they believe they need to access. The committee identified the combination of small email quotas coupled with use of email detailed above as the primary causes of faculty and staff switching to using off-campus services. These same conditions also caused some units to archive email to local systems that may not be backed up or secure.

Faculty and staff were concerned about the privacy of sensitive data and policies for managing email communications. They recognized that sensitive data may occasionally be sent through email or that some departmental people might be using commercial products, and they found few campus-level policies that would help them determine how to proceed. This has led some units to create their own policies on email usage, storage, and how it should be used by their members.

**Faculty, Staff and Graduate Student Email Usage Patterns**

Some faculty, staff and a large number of graduate students forward at least some of their email from their campus email account to an off-campus email account. Of those who forwarded their email, Google’s Gmail was a clear winner in all cases except that of Civil Service staff, who split between Google and Yahoo. Many graduate students followed the undergraduate trend of forwarding some or all of their email to an off-campus account, primarily to Google.

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\textsuperscript{1} [http://www.fs.uiuc.edu/cam/CAM/ix/ix-e\%26f/ix-f-4.html](http://www.fs.uiuc.edu/cam/CAM/ix/ix-e%26f/ix-f-4.html)
Most staff use Microsoft Outlook as their on-campus email client, reflecting the nature of software choices made by departments or the enterprise. However, faculty and graduate students clearly have broader freedom of choice, reflected in increased percentages of web browser and third-party (i.e., non-Outlook) email client use. Eudora, a legacy email client, remains in use by a relatively significant portion of faculty and staff, though its use with students is nearly non-existent.

The majority of faculty, staff and graduate students owned mobile devices, reflecting the highly mobile lifestyle readily apparent today. However, a much smaller percentage of mobile owners actually used them for email.

Graduate students’ usage patterns more closely mirrored undergraduates than faculty or staff, with more graduates forwarding their email off-campus and using web browsers for email clients. These usage patterns have possible implications for transitioning graduates to a faculty/staff email solution.

**Student Email Usage**

While there is a general belief that students no longer use email as a primary communications mechanism, they do appear to still use it at least for “business” communications. The university effectively requires this of them due to the amount of official communications sent via email and also because email is the primary means that most faculty and staff use to communicate with them. It is noted that no single policy states campus expectations about students reading their email. Some colleges and departments have filled this void by creating their own communication policies.

<table>
<thead>
<tr>
<th>Actions or environment</th>
<th>Acad. Prof.</th>
<th>Civil Svc.</th>
<th>Faculty</th>
<th>Graduate</th>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To Google</td>
<td>41.8</td>
<td>21.6</td>
<td>60.3</td>
<td>80.4</td>
</tr>
<tr>
<td>• To Hotmail</td>
<td>3.6</td>
<td>7.8</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>• To Yahoo</td>
<td>14.5</td>
<td>21.6</td>
<td>7.7</td>
<td>7.0</td>
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<tr>
<td>Email client used on campus</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• A web browser</td>
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<td>5.0</td>
<td>25.2</td>
<td>65.5</td>
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<tr>
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<td>6.3</td>
<td>12.3</td>
<td>12.4</td>
</tr>
<tr>
<td>• Outlook</td>
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<td>75.8</td>
<td>32.6</td>
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</tr>
<tr>
<td>• Eudora</td>
<td>9.8</td>
<td>11.3</td>
<td>13.6</td>
<td>.5</td>
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<td>Ownership of mobile devices</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>• Do not own a mobile device</td>
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<td>46.0</td>
<td>35.7</td>
<td>45.4</td>
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Table 1: Faculty, Staff, and Graduate Student Email Usage
Student Email Usage Patterns

There were few usage differences between graduate students and undergraduates, but there were identifiable differences between student and faculty/staff usage patterns. Students’ use of email forwarding and their heavy reliance on web browser or non-Outlook clients for reading email were chief amongst those trends.

Students appear to learn how to forward email as they spend more time on campus, with an increase from Freshmen forwarding email to Seniors of nearly 172%. Once students learn how to forward their email, the majority settle on Google’s Gmail as their preferred hosted service. Students’ overwhelming selection of hosted email services is reflected in the choice of client they use to read their email, with the majority choosing a web browser as their preferred method. Outlook, the email client most preferred by the majority of staff and some faculty, is barely used by students.

The data suggest mobile devices are popular amongst students, but a relatively low percentage of students use their mobile devices for email. Students may find more use for their mobile devices for email as they grow older.

<table>
<thead>
<tr>
<th>Actions or environment</th>
<th>Freshmen</th>
<th>Sophomores</th>
<th>Juniors</th>
<th>Seniors</th>
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<td>54.0</td>
<td>64.3</td>
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<td>• To Google</td>
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<td>81.4</td>
<td>91.9</td>
<td>94.6</td>
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<tr>
<td>• To Hotmail</td>
<td>12.4</td>
<td>4.1</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>• To Yahoo</td>
<td>10.8</td>
<td>7.4</td>
<td>3.0</td>
<td>2.6</td>
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<tr>
<td>Email client used on campus</td>
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<tr>
<td>• A web browser</td>
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<td>66.8</td>
<td>65.2</td>
<td>69.2</td>
</tr>
<tr>
<td>• Thunderbird</td>
<td>11.3</td>
<td>16.0</td>
<td>20.5</td>
<td>18.1</td>
</tr>
<tr>
<td>• Outlook</td>
<td>9.2</td>
<td>8.2</td>
<td>6.4</td>
<td>6.0</td>
</tr>
<tr>
<td>• Eudora</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Ownership of mobile devices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Use for email</td>
<td>16.3</td>
<td>18.4</td>
<td>26.0</td>
<td>27.0</td>
</tr>
<tr>
<td>• Do not use for email</td>
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<td>32.2</td>
<td>30.5</td>
</tr>
<tr>
<td>• Do not own a mobile device</td>
<td>38.8</td>
<td>40.4</td>
<td>41.7</td>
<td>42.6</td>
</tr>
</tbody>
</table>

Table 2: Undergraduate Student Email Usage

Calendaring

Faculty and staff view calendaring and scheduling as vital processes enabling them to organize meetings and keep track of events. Many people and departments identified scheduling as one of their largest obstacles to productivity since it requires multiple people to schedule interdepartmental meetings. The committee identified two main causes for this requirement: 1) there are a number of separate calendaring tools used by departments that do not necessarily interlink with one another, and 2) some
schedules, especially those of senior administrators and groups, are managed by proxies who must be consulted before a meeting can be scheduled.

The lack of a single coordinated, shared calendar was the most common complaint by campus units and individuals. While opinions on specific solutions varied, the desired outcome was the same: people want to schedule meetings and events across department boundaries without difficulty; they want to manage the use of meeting resources effectively (meeting rooms, projectors, etc.); they want to push some calendar events to specific groups or individuals; and they want to synchronize calendar data across workstations and mobile devices. The committee realizes that regardless of any proposed campus calendaring solution, some amount of human interaction will continue to play a significant role in scheduling, especially with senior administrators’ schedules.

Students appeared to view calendars with some ambivalence depending on their time on campus. Freshmen reported much lower use of calendars than Seniors and Graduate students. However, many students seemed to recognize the value of using a calendar to organize meetings with advisors or track interesting upcoming events.

**Calendar Usage, All Groups**

Survey results indicated calendars were frequently used by people working for or on behalf of the campus. Students reported overwhelmingly that they used calendar tools not designed or provided by the campus; instead, they turned to Google or Apple for their calendar needs. Staff primarily used campus-provided tools, while faculty reported a mixed variety of campus-provided and off-campus calendaring tools. Microsoft Outlook was clearly heavily used amongst staff, while Google and Apple accounted for the bulk of student calendaring.

Large percentages of survey responders (students, faculty and staff) reported the following needs as moderately, very or extremely useful:

- Select events listed in an email and have them appear in a calendar: 84%
- Schedule meetings with people in other units: 87%
- Schedule meetings with people on other campuses: 64%
- Define interests and have events corresponding to those interests appear on calendar: 83%

<table>
<thead>
<tr>
<th>Calendar Type</th>
<th>Fresh.</th>
<th>Soph.</th>
<th>Jr.</th>
<th>Sr.</th>
<th>Grad.</th>
<th>Faculty</th>
<th>Ac Pro</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
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<td>29.0</td>
<td>34.4</td>
<td>39.3</td>
<td>49.0</td>
<td>60.4</td>
<td>77.0</td>
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<td>Microsoft Outlook</td>
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<td>8.5</td>
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<td>20.2</td>
<td>35.9</td>
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<td>Google Calendar</td>
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<td>15.2</td>
<td>5.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Apple iCal</td>
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<td>20.7</td>
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<td>1.0</td>
</tr>
<tr>
<td>Oracle/Corp. Time</td>
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<td>0.0</td>
<td>0.2</td>
<td>8.2</td>
<td>7.5</td>
<td>11.6</td>
</tr>
</tbody>
</table>

*Table 3: Electronic Calendar Usage*
Where – Insourcing vs. Outsourcing

Google and Microsoft both provide free email services for educational institutions. A large number of institutions have now outsourced their student email to one of or both of these companies. As previously noted, Google is the overwhelming off-campus email choice by those already using such a service. This is especially true for students. There are almost no email features that a campus-based service could offer that Google does not already provide. The single issue that could potentially drive a decision to continue to provide campus email accounts to undergrad students is privacy. Google (and Microsoft) have added language to their standard contracts, based on feedback from other higher education institutions, to address most privacy issues. In particular, they do no data mining while students are active as students. Given that most undergrad students do not typically work with data that the university would classify as sensitive, that there are no compelling features that campus can offer that the outsourced services cannot, and that students are already choosing to use off-campus services, the committee recommends that the funds that would be needed to create an on-campus solution for undergrads are better spent elsewhere.

Both the Google and Microsoft solutions provide email and calendaring. For email, the best service for students will be primarily one of personal choice. For calendaring, there are some potentially significant functionality differences that may make it beneficial for students to choose the Microsoft service over Google. Microsoft Live@edu is run on Exchange 2010, the same technology that the on-campus solution for faculty/staff will use. Microsoft does provide the ability to do some integration between Live@edu calendars and an on-campus Exchange service, something that is not currently possible with Google.

The committee recommends that contracts be executed with both Google and Microsoft in order to provide students with options that both meet their current demonstrated preferences as well as provide additional functionality that they may desire. Indiana² and Virginia³ are example universities who have already partnered with both companies and allow students to choose.

There are several key differences between graduate students and undergraduate students that affect the viable service options for them. First, they are much more likely to deal with FERPA data (as TAs) or sensitive research data (as RAs), or other legally protected information (e.g. by HIPAA). While Google and Microsoft have contract terms to help protect this data while students are enrolled, once they leave the university these protections are removed but students’ accounts may stay active. Second, graduate students schedule meetings with faculty and staff on a more regular basis than undergraduate students (e.g. their advisors, research groups, faculty they are TA’ing for). This will be facilitated by being on the same calendaring system as faculty. Finally, our University does consider graduate students with appointments to be staff. According to campus legal counsel, the Google and Microsoft contracts prohibit use of their free services by employees. It is possible that both companies are now providing options that would allow faculty and staff to also be moved to their free services but the committee did not actively investigate this.

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² [http://uits.indiana.edu/page/avtf](http://uits.indiana.edu/page/avtf)
³ [http://itc.virginia.edu/email/student/](http://itc.virginia.edu/email/student/)
The reasons for keeping graduate students in-house are essentially the reasons for also continuing to locally provide email and calendaring services for faculty and staff. There are also some features that Google and Microsoft do not currently provide that faculty/staff desire and that can be provided with an on-campus solution (e.g. larger message sizes, full BlackBerry support).

There will be some exception cases of undergrads who do actually work with sensitive data where it will be necessary to provide them with accounts on the on-campus solution.

**How – Email and Calendaring**

**Quotas**

As noted previously, small quotas are one of the primary causes of faculty and staff switching to use off-campus email services. They have also been a contributor to units creating their own email systems. Providing large quotas is absolutely critical to promoting large scale adoption of any new, central email service.

There is a strong belief that most users do not use anywhere near their quota limit. This allows high quota levels to be provided to encourage use of the service by those who do need more space while containing costs since a lower amount of physical storage needs to actually be provisioned. The College of Engineering has had a contract with the CITES Exchange Service since September 2005 with the agreement allowing the College to give users 200MB, 500MB, 1GB, 2GB, 5GB, 10GB, or 20GB quotas. As of July 2009 over 1000 accounts were provisioned under this agreement. An analysis of these accounts showed that just over half had a 1GB or larger quota and for these, the average space utilization at each quota level was less than 50% of maximum.

The committee makes the following specific recommendations regarding quotas:

1. The default quota for faculty/staff should be at least 5GB. The default quota for all others should be at least 2GB.
2. The governance committee and technical advisory boards should review the default quotas annually and recommend increases as necessary to ensure that most users do not hit their limit.
3. A mechanism must be created to allow all users of the service to purchase additional quota. This mechanism should take into account potential annual increases in the base quotas.
4. The governance committee should define groups of special users who may need larger default quotas than the common standards (e.g. deans, department heads).

**Maximum Message Size**

The current campus limit of 65MB is acceptable for the new Exchange service. The Google and Microsoft services have lower limits which should be documented. At the time this report was issued, Google’s limit was 25MB\(^4\) and Microsoft’s was either 20MB\(^5\) or 25MB\(^6\) (depending on the source). Note that the campus limit was 30MB until July 1, 2008 when it was increased to 65MB to accommodate

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\(^4\) [http://mail.google.com/support/bin/answer.py?hl=en&answer=8770](http://mail.google.com/support/bin/answer.py?hl=en&answer=8770)


some specific user needs. Any future evaluation of potentially moving faculty, staff, or graduate students to Google or Microsoft services (free or otherwise) will need to carefully evaluate their limits at that time and determine if they are adequate to accommodate all campus needs.

The committee makes the following specific recommendation regarding maximum message size:

1. The current campus maximum message size limit of 65MB is sufficient and should be kept.

Non-User Mailboxes

Multiple needs for shared mailboxes were identified, typically for offices or other activities handled by multiple people. Examples include department head email (e.g. head@unit.illinois.edu), academic inquiries (e.g. advising@college.illinois.edu), and office functions (e.g. purchasing@unit.illinois.edu).

The committee makes the following specific recommendations regarding non-user mailboxes:

1. Units should be provided with shared mailboxes at no charge for any business function that is handled by multiple people or that is strongly associated with a particular office (e.g. business@unit.illinois.edu). “Unit” may include student groups who should be provisioned with shared mailboxes on the Google Apps or Microsoft Live services rather than the campus Exchange service.

2. The governance committee should create a specific policy on allowed shared mailboxes and be the final arbiter of the validity of any shared mailbox request. All shared mailboxes allowed by policy should be provided at no charge to units. A charge should be determined for shared mailboxes that fall outside of the created policy.

Non-User Calendars

A very common request from units was to have calendars for rooms and equipment (e.g. conference rooms, projectors, parking spaces). Exchange refers to these as resource calendars and has features for tagging calendars by type and for doing some automatic management of the scheduling of these resources.

Another calendar use is for events publishing. This could range from university holidays, Assembly Hall events, to sports team schedules, to class schedules. The committee did not actively investigate where it may be preferable to provide event calendars in Exchange, Google Apps, and/or Microsoft Live rather than using the campus Webtools calendars that are now commonly in use. Additional exploration of this issue is recommended for the governance committee.

Besides actual calendars for events, it is possible to provide event listings that can be imported into an individual’s calendar. This could be particularly useful for items such as university holidays.

The committee makes the following specific recommendations regarding non-user calendars:

1. Resource calendars should be provided at no charge to units for rooms and equipment.
2. The governance committee, in conjunction with the technical advisory boards, should determine a standard set of types that these calendars will be organized by. Types recommended for consideration include “conference room”, “projector”, “conference room”, and “parking space”.

3. The governance committee should actively explore creating a standard naming scheme for conference rooms. This is intended to facilitate campus users locating the calendar for the specific rooms they are interested in. F&S has a implemented a scheme and is a suggested starting point.

4. Documentation should be developed to educate campus users on how to use resource calendars and, in particular, the automatic scheduling management functionality that Exchange has for these types of calendars.

5. The governance committee should determine what events should be provided as calendars in a format that individuals can import into their personal calendars (Exchange, Google Apps, and/or Microsoft Live). The technical advisory boards should oversee the implementation of these calendars.

6. The governance committee should investigate whether some event calendars should be implemented as Exchange, Google Apps, and/or Microsoft Live calendars either as a replacement for, or in addition to, a campus Webtools calendar.

Platform Support

The survey results show that Windows and Mac OS X are the dominant platforms people are sending and receiving email from, with over 90% of all respondents using one of these two platforms. Staff (AP and Civil Service) were the largest Windows users. Faculty had the second largest share of OS X users at 27.4%. Freshmen were the largest OS X users at 27.8%. Among all students, there is a definite trend that the younger the student, the more likely they are to use OS X.

With regards to mobile devices, a very small percentage of users reported using a mobile device as their primary email device (0.4% on average for faculty/staff and 1.7% on average for students). However, the survey also showed that almost 60% of all faculty, staff, and students own a mobile device that is at least capable of sending and receiving email. Among APs and faculty, 30% said that they do use their mobile devices to send and receive email. Just over 20% of all students said that they use their mobile devices for email with a clear trend that the older a student is, the more likely they are to use their mobile device to send and receive email.

The committee makes the following specific recommendations regarding platform support:

1. The new service must be based on Exchange 2010. The Exchange 2010 release, due out in late 2009, is the first Exchange release to have a web interface that fully supports browsers other than IE (and, by extension, OS’s other than Windows). This is critical given the significant usage of OS X on campus. It will also provide support for platforms other than Windows and OS X (most notably Linux).

2. The BlackBerry Enterprise Server should be a part of the subsidized service. In addition, the necessary client license (currently ~$60 per copy) should be provided to faculty and staff at no charge. All other users of the service should be required to pay for the client license.
3. Full documentation and support should be provided for mobile users using BlackBerry, iPhone, and Windows Mobile devices.

Transition – Undergraduate Students
Only email is a migration issue for undergraduate students as most have never had an electronic calendar provided to them by any campus unit. The committee’s recommendation that undergraduates be allowed to choose which of the two outsourced services to use, as well as to choose both, makes it difficult to do a mass migration of email to these new services. The committee recommends that a technical evaluation still be done on the feasibility of doing mass migrations for students. However, experiences from other institutions indicate that mass migrations are likely not necessary. The tools provided by the vendors, combined with good local documentation on the necessary steps, should be sufficient for students to be able to migrate themselves to the new services.

It will be necessary for a local account management system to be created that students use to activate one or both of the services, including accepting both the vendor and campus terms of service. This tool should also allow them to set which of their activated accounts their @illinois.edu email is sent to. Unless a future policy change is made to prohibit it, students should also be allowed to activate their accounts but choose to forward their @illinois.edu to some other off-campus email account.

The committee makes the following specific recommendations regarding transitioning undergraduates email to the new services:

1. Conduct a technical evaluation as to the feasibility of mass migrating student email from CITES Express to the Google and Microsoft outsourced services.
2. Create a published transition plan that announces when all student accounts must be migrated off of CITES Express.
3. Provide documentation for students to migrate their own email to the new services from CITES Express as well as generic IMAP-enabled services.
4. Create an integrated account management tool for students to activate their Google and/or Microsoft accounts and to set their @illinois.edu address.
5. CITES Helpdesk should develop new procedures and documentation as necessary to support these outsourced services. Their support should be integrated with that provided by the vendors.

Transition – Faculty, Staff, and Graduate Students
Email and calendars can have separate transition processes for users but these steps often must be coordinated. Consideration must be given to differences that will exist in the transition processes from CITES services versus unit provided services. The quality of the transition will be a key factor in the initial success of the deployment and in achieving the goal of unifying most campus users on this service.

Email
To the largest extent possible, email should be migrated to the new campus Exchange service by administrators without requiring users to perform the work themselves. Because of the number of different email services in use there is no single place or single group of administrators who will be able
to perform this task. A variety of tools, documentation, and training will be required to complete the process for all campus users.

CITES must prepare to do mass migrations of users email from the current CITES Express and CITES Exchange services to the new campus Exchange service. CITES must also develop tools, processes, and procedures to facilitate administrators of major existing unit-level email services mass migrating their users to the new Exchange service. It is not expected that CITES be able to provide migration tools for every possible email service. However, they must still be prepared to provide consultation to the administrator of any campus email service seeking to fully migrate their service to the new campus solution.

As with the transition process for undergraduate students, documentation must be provided to facilitate users migrating their own email from CITES Express or any generic IMAP-enabled email service. In addition, documentation must be provided for how to configure and use major email clients with the new Exchange service as well as on how to migrate locally stored email in those clients to the service. Additional tools may need to be provided to unit administrators to handle locally stored email as some mail clients use non-standard formats that require conversion before messages are copied to the new service. These tools may also need to be made available to individuals running their own email service.

Address books and filtering rules should also be automatically migrated to the largest extent possible. A technical evaluation needs to be done early in the project to identify tools that may be used to do these migrations. It is recommended that the cost of these tools be picked up centrally if at all possible, but it is acceptable for units to potentially have to bear some of this one-time cost. Documentation on how to recreate these items in the new service will be required regardless of what tools are identified.

Mobile devices will have to be individually reconfigured to use the new service. Documentation will need to be produced on how to do this. It is also recommended that the CITES Helpdesk explore providing extra support for this process during the transition period. There should be support tailored to both end users and unit IT administrators who are providing this support to their users.

The committee makes the following specific recommendations regarding transitioning faculty, staff, and graduate student email to the new service:

1. Mass migrations of users email from the current CITES Express and CITES Exchange services to the new campus Exchange service must be done.
2. Tools, processes, and procedures must be developed to facilitate administrators of major existing unit-level email services mass migrating their users to the new Exchange service.
3. Documentation must be provided to facilitate users migrating their own email from CITES Express or any generic IMAP-enabled email service.
4. Documentation must be provided for how to configure and use major email clients with the new Exchange service.
5. Documentation must be provided on how to migrate locally stored email to the service. Tools may also need to be provided to convert email stored in non-standard formats.
6. Address books and filtering rules should be automatically migrated to the largest extent possible. Documentation on how to recreate these items in the new service will be required regardless of what tools are identified to do this migration.

7. Documentation and CITES Helpdesk assistance must be provided on how to reconfigure mobile devices to use the service.

**Calendars**

As with email, calendars should be migrated to the new campus Exchange service by administrators without requiring users to perform the work themselves. It is likely more difficult for individual users to migrate their calendars on their own than it is for email. Calendars are frequently used as a group resource for scheduling purposes so there is also a greater need to have all calendars within a group migrated at the same time.

CITES must be prepared to do mass migrations of user and resource calendars from the current CITES Oracle Calendar and CITES Exchange services to the new campus Exchange service. CITES must also develop or purchase tools\(^7\), processes, and procedures to facilitate administrators of major existing unit-level calendar services mass migrating their users to the new Exchange service. It is not expected that CITES be able to provide migration tools for every possible calendar service. However, they must still be prepared to provide consultation to the administrator of any campus calendar service seeking to fully migrate their service to the new campus solution.

Training on how to use calendaring in Exchange is critical for all users of the new service, even those that are already using Exchange. One issue identified by the committee is that even existing users of Exchange do not know how to fully utilize the functionality. For the transition process, however, training should be focused on users who are coming from other calendaring services (e.g. Oracle Calendar, Meeting Maker) to allow them to continue doing the scheduling functions they were performing in their previous environments.

The committee makes the following specific recommendations regarding transitioning faculty, staff, and graduate student calendars to the new service:

1. Mass migrations of user and resource calendars from the current CITES Oracle Calendar and CITES Exchange services to the new campus Exchange service must be done.
2. Tools, processes, and procedures must be developed to facilitate administrators of major existing unit-level calendar services mass migrating their users to the new Exchange service.
3. Training must be provided on how to use calendaring in Exchange with an initial focus on users who are coming from other calendaring services.

**Training**

As noted previously, training users on how to use the new Exchange service will be critical to its successful adoption. Extra training will be needed during the initial transition to the new service and

\(^7\) CITES has used a product from Sumatra, [http://www.sumatra.com/](http://www.sumatra.com/), to do some calendar migrations to the current CITES Exchange service.
incentives provide for faculty and staff to actually attend. For approximately the first year of the transition, the committee recommends that free CITES FAST3 training for end users be provided on using the most common email/calendaring clients including Outlook, Entourage, OWA (the Exchange web interface), and Apple Mail and Apple iCal (when integrated with Exchange). Campus administration should strongly encourage units to provide release time to unit staff to attend either campus or unit level provided training. Free end user online training courses should be provided both during and after the transition.

Special training courses should be provided for campus IT staff to train them how to support their end users including providing them with training materials that they could use to provide their own training sessions for their units.

The committee makes the following specific recommendations regarding training:

1. For approximately the first year of the transition, provide free CITES FAST3 training for end users on the use of the most email/calendaring clients.
2. Campus administration should strongly encourage units to allow staff to attend either campus or unit provided training.
3. Free end user online training should be provided on an on-going basis.
4. Training courses should be provided for campus IT staff on how to support their end users, including training them to provide training their end users.

Unit Level Support Needs
Support must be provided to allow units who so choose to use unit level addresses (e.g. @unit.illinois.edu). This is especially critical for allowing some units currently running their own email services to be able to transition to the new campus service.

The committee makes the following specific recommendation regarding unit level support needs:

1. Unit IT staff must be provided with a set of tools to allow them to perform basic account administration and troubleshooting. This includes providing the ability to unlock accounts, manage quotas, create resource mailboxes and calendars, and create distribution lists.

Account Retirement
There are five status changes that individuals may undergo that require consideration for how to handle what email and calendaring services they are receiving. The committee makes no special recommendations about how these status changes should be handled other than to note them and stress that the governance committee and/or technical advisory boards must determine how to address them. The five status changes are:

- undergraduate student -> alumni
- undergraduate student -> staff
- undergraduate student -> graduate student
- faculty, staff -> retire
- faculty, staff, graduate student -> leave university other than by retiring
Regarding alumni email, the preponderance of received feedback is that the primary concern with alumni is simply to have a valid email address for them, not that they have a university mailbox. In particular, the Alumni Association specifically stated this position.

The committee makes the following specific recommendation regarding account retirement:

1. The governance committee must determine how to address the provisioning of services to users who experience a change in their status with the university that changes what email/calendaring services would normally be provided to them.

Active Directory
Microsoft Exchange has several hard dependencies on Active Directory. Some design aspects of the current campus Active Directory have been a contributing factor to several units, in particular Extension, implementing their own Exchange service. The fact that UA, UIC, and UIS are all currently running their own Active Directory domains presents a complicating factor for the recommendation that the new Exchange service eventually be merged with the Exchange services of these other university entities.

The committee makes the following specific recommendation regarding Active Directory:

1. A campus effort to design a next generation Active Directory domain in conjunction with UA has already begun. The committee strongly recommends that this effort be given a high priority and the resources needed for it to be completed successfully with a design that supports an Exchange 2010 environment that accomplishes all of the recommendations in this report.

Delegation
Delegation is a useful function in Exchange that allows a user to give another user the ability to perform some functions as them. This is most commonly used to allow an administrator to have their assistants manage their calendar including scheduling and accepting meetings on their behalf. There is an issue with Exchange through at least version 2007 (with its status in 2010 unknown) that prevents UNIX/Linux users, and potentially Mac users, from being able to set delegates. The technical implementation team must come up with alternate means for users of these platforms to perform this function. One solution currently in use by a few units already running Exchange is to provide a Windows Terminal Server for these users to temporarily use the Windows environment. Other solutions may very well exist, however, and should be actively explored.

The committee makes the following specific recommendation regarding delegation:

1. An investigation must be done to determine alternate technical means for users of non-Windows systems to set delegates.
Service Characteristics

Interoperability
The service should primarily support the user’s ability to access and manage email and calendaring resources related to their primary roles with the University. Since email and calendaring (scheduling in particular) facilitates collaboration and since the current recommendation puts undergraduate students on different systems than faculty, staff, and graduate students, it is recommended we maximize the interoperability of the selected systems. Interoperability is also important for collaboration among individuals from other institutions. Interoperability can also help scholars and staff simplify the management of their academic and work lives where it intersects with their personal lives by allowing people to view or manage resources for both in a more integrated way. In practical terms, the clients used by our faculty and staff, for example Outlook, should be able to connect with and otherwise access the resources which facilitate collaboration among those who may be using Google or Microsoft Live and vice-versa.

Efficient scheduling is particularly dependent upon interoperability. Managing electronic calendars and free/busy data is time-intensive but critical to efficiency. Given the existence of many special-case scheduling solutions on campus, it is recommended that we continue to monitor technologies for opportunities to increase the value of these respective efforts by making them interoperable.

It is also recommended that the solution provide good interoperability with other related technologies that facilitate collaboration such as Instant Messaging and shared file storage. There are also existing unit-level applications that may need to be integrated or at least some assistance provided to units to make their applications work with the new service. Examples of these applications include one in Law for scheduling conference rooms and one in Math for handling conference registrations.

Accessibility
The committee did not do a detailed technical evaluation of any tools. CITES did conduct a basic accessibility and usability study of Exchange 2007, Gmail, and Zimbra during Fall 2008. All had basic accessibility support, though Exchange was on the lower end of their testing scale. The committee’s recommendation is for Exchange 2010 which has not yet been officially released. Additional testing should be conducted on it prior to final implementation as should updated testing of the Google and Microsoft outsourced solutions for students. There are clients that can be used with all three that may provide a higher degree of accessibility than that provided in any of these base products (despite the belief that all are minimally compliant). Some recommend evaluation parameters include:

- Evaluate email and calendaring components both independently and jointly.
- Evaluate web interfaces, thick clients, and mobile clients.

Security and Privacy
Security and, in particular, privacy concerns are a consideration in the overall recommendation. Google and Microsoft both have language in their contracts to address the privacy of data and the handling of

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8 [https://wiki.cites.uiuc.edu/wiki/download/attachments/26641972/EmailOutsourceEval.pdf](https://wiki.cites.uiuc.edu/wiki/download/attachments/26641972/EmailOutsourceEval.pdf)
Information protected by laws such as FERPA. However, a number of these protections go away once a student graduates. Google and Microsoft’s motivation for providing these services for free is to grow the user base of their services that is receiving ads. Once students graduate, the ads are enabled (assuming the students leave the accounts active) and Google, at least, does targeted advertising based on data mining of students data, and that data could include all email that a student received while still an undergrad. It is not clear what the risk is to individuals or the university if FERPA protected data or other confidential (e.g. NDA research data) or other sensitive information is mined by Google. This is an issue primarily of concern for faculty, staff, and many grad students who are more likely to have such data. Any future initiative to potentially move these user communities to any outsourced email service will need to do an in-depth analysis of the relevant issues and risks.

The following two observations about email security were discovered by the committee in the course of its work:

- Information that is protected by HIPAA and other more stringent legal regulations should not be sent unencrypted via email regardless of whether the email is sent to/from an on-campus email address or an off-campus email address. The College of Medicine has an official policy prohibiting the use of email for any kind of patient information.
- The outsourcing of undergraduate email will remove the ability to track and verify delivery of specific email messages to particular student's account. A few campus units did indicate a desire to be able to do this. However, based on the feedback from these units, the need arises very infrequently (on the order of once in multiple years). One unit also noted that being able to confirm delivery to an account did not prove delivery to the student it was sent to. They indicated awareness of cases where roommates and even parents had access to a student’s email and used it inappropriately. The committee believes that it is acceptable to formally lose the ability to do message delivery tracking to undergrads due to the infrequency of it being needed and the mixed success rate at being able to use the information even when obtained.

Reliability and Availability

For the undergraduate service options, the contracts with Google and Microsoft document the service levels that they intend to provide. As free services they do not guarantee these service levels. The committee has no significant concerns about the level of service that these companies are currently providing.

The campus Exchange service will be a major enterprise service with an obvious mandate to be highly reliable. The details on doing that are left to the implementation team. There are needs on campus for a higher level of availability than are currently provided. The extended full campus power outage on March 8, 2009 highlighted two examples. First, the F&S dispatch system for technical staff is tied into their existing Exchange server. It is protected by both a UPS and a generator and stayed up during the entire outage. This was critical as it is their primary means of getting staff to locations on campus they are needed to address issues. Second, as of Spring 2009 over 75% of faculty and staff had only their campus email account registered in the campus emergency notification system (ENS). Because most campus email services were offline during the power outage, this means that a large percentage of
faculty/staff never saw the ENS notices that were sent out during that outage until well after power had been restored.

The committee is aware of active work to create data center space that would provide the necessary level of availability. The committee strongly urges that these other efforts be given the resources needed to ensure their successful completion.

**Additional Recommendations**

**Campus Policy Discussion Recommendations**
The committee identified three policy issues that it believes need to be formally discussed for potential formalization as official campus policy. The first of these is especially noted as it is already often treated as a defacto campus policy.

1. Discuss formal establishment of @illinois.edu as the official campus email address and document users responsibilities for monitoring and responding to messages sent to this address.
2. Discuss the use of off-campus email services, other than those campus contracts with, and addresses for official university business or discussions by faculty, staff, and students
   a. One set of concerns involves FERPA, HIPAA, and other legal issues. Documents of a sensitive but not legally protected nature should also be considered.
   b. Another concern is the ability to adequately identify the sender of a message (e.g. an undergrad student emailing a faculty member about their grade from Imagreatstudent@yahoo.com).

**Governance Committee Recommended Action Items**
The following list includes items that were noted elsewhere in the report plus some additional recommendations that are only listed here.

**Email Service Parameters Issues**
- The governance committee and technical advisory boards should review the default quotas annually and recommend increases as necessary to ensure that most users do not hit their limit.
- The governance committee should define groups of special users who may need larger default quotas than the common standards (e.g. deans, department heads).
- The governance committee should create a specific policy on allowed shared mailboxes and be the final arbitrar of the validity of any shared mailbox request. All shared mailboxes allowed by policy should be provided at no charge to units. A charge should be determined for shared mailboxes that fall outside of the created policy.
• The governance committee should determine policy for dealing with users who change their affiliation status with the university where the change changes the type of email/calendaring service that would normally be provided to them. There are at least five such status change conditions that must be addressed:
  o undergraduate student -> alumni
  o undergraduate student -> staff
  o undergraduate student -> graduate student
  o faculty, staff -> retire
  o faculty, staff, graduate student -> leave university other than by retiring

• The governance committee should determine the conditions under which some users should be provided with a different service than is the default for their user class. For example, some groups of professional students, who typically never receive assistantships and thus never have a status similar to staff members, may make more sense to treat as undergraduate students in terms of the email/calendaring service they are provided with. There may also be some cases where undergraduates are frequently working with sensitive data and may need to default to being treated like staff. Overall this issue needs further investigation. Law is a suggested starting point for evaluating the professional student issue. Applied Health Sciences is a suggested starting point for evaluating the undergraduate student issue.

• This recommendation does not specifically address providing any user community with permanent email addresses (i.e. ones that function even once a person leaves the university). Feedback from the Alumni Association and others indicates that the primary concern for advancement staff is now simply having a valid email address available for alumni, not with them having an email addressed tied to the university. Nonetheless, no firm recommendation is provided as to whether permanent email addresses may or may not be needed or desired in some circumstances. As such, the governance committee should work to address a current major limiting factor in providing permanent addresses: the 8 character length limit on NetIDs. There are at least two ways for this issue to be addressed. First, increase the maximum length of NetIDs. Second, disconnect NetIDs from email addresses.

• The governance committee should do further evaluation of potential needs for providing archiving as a service option for email. The governance committee should also oversee an evaluation of technical means for implementing archiving services, whether for all users or selected users based on targeted use cases.

Note that the committee did discuss email archiving with Joanne Kaczmarek, the University Archivist for Electronic Records, and also Steve Anderson, the University Counsel who typically handles IT issues. It was clear from those discussions that archiving needs to have more attention paid to it. However, it was also clear that there are many policy and legal issues involved beyond just technical issues. The complexity of the issues, combined with no urgent need to implement a solution, led to the recommendation to simply charge the governance committee with exploring archiving further.
Calendar Service Parameters Issues

- The governance committee, in conjunction with the technical advisory boards, should determine a standard set of types that these calendars will be organized by. Types recommended for consideration include “conference room”, “projector”, “conference room”, and “parking space”.
- The governance committee should actively explore creating a standard naming scheme for conference rooms. This is intended to facilitate campus users locating the calendar for the specific rooms they are interested in. F&S has a implemented a scheme and is a suggested starting point.
- The governance committee should determine what events should be provided as calendars in a format that individuals can import into their personal calendars (Exchange, Google Apps, and/or Microsoft Live). The technical advisory boards should oversee the implementation of these calendars.
- The governance committee should investigate whether some event calendars should be implemented as Exchange, Google Apps, and/or Microsoft Live calendars either as a replacement for, or in addition to, a campus Webtools calendar.

Overall Service Monitoring Issues

- There is some concern over the long term viability of the Google and Microsoft free services. The governance committee should regularly monitor these services and other activity in this space and what other options may become available. Adjustments should be recommended as necessary to what services students are provided with.
- The governance committee should evaluate the overall email and calendaring services each year in context of what other service offerings are now available to campus. A question to regularly ask is if email (in particular) has finally gotten to the point where it can be treated like phone numbers and postal addresses: just assume that everyone has them and you can use what they provide without worrying about whether it will work or not. A regular evaluation should be made as to whether the time has come to stop providing any email/calendaring services to campus users or to at least move all email/calendaring services (i.e. those provided to faculty/staff) to an outsourced provider.
- The governance committee will need to address a desire that some grad students, faculty, and staff are going to have to also use Google and/or Microsoft Live@edu. Given the number of applications these services have beyond email and calendaring there will almost certainly end up being legitimate reasons for them wanting/needings these accounts.

Other Tools and Functionality Enhancements to Evaluate

This section documents a number of additional good ideas for service enhancements that came up during the committee’s work. All are at least peripherally related to the committee’s charge but did not fit into its primary recommendations. Most are noted as items to be evaluated by follow-on committees or working groups.

1. Conduct a thorough evaluation of collaboration tools beyond email and calendaring. What is available? What is projected to be available? What are the campus needs that these can
potentially address? What are the audiences that may benefit from various tools? The additional tools that are part of the Google Apps for Education suite are one driver for conducting such an evaluation. Tools and services such as Skype, Facebook, and Second Life also fall into the broad category of “collaboration tools”. Two suggested starting points for this effort are a July 2007 report from Berkeley and an August 2008 EDUCAUSE Learning Initiative report.

2. Evaluate the potential value of creating a system that facilitates undergraduate students scheduling meetings with advisors (whether at the department, college, or campus level).

Potential features of such a system include:

a. Allowing advisors to specify blocks of time that are managed by the system with the system auto-updating their personal calendars with scheduled appointments.

b. Allowing offices with multiple advisors to have multiple slots available for any given time slot and allowing the system to distribute meetings between advisors.

c. Allowing students to make appointments at any time of the day or week.

d. Providing students with the means of downloading appointments to their calendars.

3. Evaluate places to enable the ability for events and activities to be pushed automatically to student calendars or easily pulled into students calendars by the students themselves. Examples include class schedules, campus sporting events, and student organization events.

4. Explore officially supporting Doodle, a free online scheduling tool. Doodle is already being used quite extensively on campus. The primary current disadvantage of Doodle is that all availability information must be manually entered. It does, however, offer two advantages over any integrated system. First, it has no dependencies on what individual users use to manage their calendars. Those still using paper calendars can use Doodle. Second, it can also be used to include individuals who are not part of the campus community.

5. Explore providing additional support for event planning, in particular registration. Exchange and other email/calendaring systems can handle small events but additional functionality becomes useful as the size of an event grows and in cases where off-campus people are involved. Campus did have an arrangement at one point with a commercial solution, CVENT. However, a search of campus and university websites revealed no information about any current agreement with this company. If an arrangement does exist, it should be better documented.

6. The Provost Resource Use Advisory Board has been exploring possibilities for creating a campus (or university) wide academic vacation / sick leave reporting system. If such a system were ever to be deployed, some level of integration with individual’s electronic calendars may be useful.

7. Many units still have unit level mail aliases, basic distribution lists, and mailing list servers. A project should be initiated to determine the feasibility of enhancing the current campus level services (mail relays, listserv.illinois.edu) to allow units to transition this functionality to a central service.

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Microsoft Campus Agreement
There is an active campus discussion about purchasing a Microsoft Campus Agreement (CA) to cover all of campus for at least faculty, staff, and graduate assistants. There is an option to have it cover all graduate students, not just those with assistantships. A CA is a site license that would provide Windows, Office, and a number of application licenses for everyone that is included in the agreement. It would be extremely useful if all faculty, staff, and graduate students who are on the Exchange service had guaranteed access to the Microsoft Outlook and Microsoft Entourage client applications. A CA would also cover part of the end-user licenses required for the Exchange service (specifically an Exchange Standard CAL).

Appendices

Committee Charge
Chuck Thompson, Assistant Dean, College of Engineering (chair)
Bill Goodman, Assistant Dean for Administration and Technology, College of Applied Heath Sciences
Paul Hixson, Assistant Dean, College of Agricultural, Consumer, and Environmental Sciences
Craig Jackson, Director of ATLAS, College of Liberal Arts and Sciences
Ryan Thomas, Director of Information Technology, College of Education
Alex Breen, Acting Director, CITES Departmental Services
Kelly Bridgewater, Customer Relations Coordinator, Office of the CIO
Randy Cetin, Executive Program Officer for IT Resource Coordination, Office of the CIO

The current CITES Oracle Calendar service will be retired before the start of the Fall 2009 semester and will be replaced, at least initially, by the CITES Exchange Service. The current CITES Express Email service will be retired before the start of the Fall 2010 semester. The primary charge of this committee is to recommend what the replacements for each of these services should be. These recommendations should include what the base entitlements for email and calendaring should be for faculty, staff and students of the University of Illinois at Urbana-Champaign.

The committee will explore all available options including expansion of the existing CITES Exchange Service, implementation of some other on-campus services (e.g. Zimbra), and outsourcing to providers such as Google, Microsoft, or Yahoo. The committee must keep strongly in mind that whatever is proposed must be, at worst, essentially cost neutral compared to the current services. Additionally, whatever is recommended must be able to be implemented, and users migrated over, before the existing services are retired.

A final set of recommendations should be made no later than March 27, 2009, with an interim report by February 13, 2009. Note that these dates were selected relative to the deadlines for putting items on the agenda for the March 11 and May 21 Board of Trustee meetings.

Due to the compressed timeframe for implementing replacement services, a number of technical committees will be convened concurrent with this committee. These technical committees will work on
details of the more likely implementation options. This committee should interact with these additional groups as necessary either for input or to refine their efforts.

Summary of Questions to be Answered
1) What email and calendaring service(s) (if any) should be provided to faculty and staff as of the start of the Fall 2010 semester?

2) What email and calendaring service(s) (if any) should be provided to undergraduate students as of the start of the Fall 2010 semester?

3) What email and calendaring service(s) (if any) should be provided to graduate students as of the start of the Fall 2010 semester?

Sally Jackson, CIO and Associate Provost

Committee Activities

Project Announcement
The project was announced to campus by a note in the faculty/staff eweek bulletin and by massmail messages to everyone on campus. A public website with information about the project was created at [http://illinois.edu/goto/emailcalendaring](http://illinois.edu/goto/emailcalendaring).

Committee Meetings
The committee met 13 times between January 27, 2009 and May 27, 2009. Four of the meeting had invited guests to provide briefings to the committee. These guests included:

- Joanne Kaczmarek, University Archivist for Electronic Records
- Mike Corn, Chief Privacy and Security Officer
- Steve Anderson, Associate University Counsel
- Helen Zhang, Associate Director for Administration and Planning (CITES)
- Doug Fein, Technical Program Manager (NCSA)

Feedback Mechanisms
An email address, [email-calendaring-feedback@listserv.illinois.edu](mailto:email-calendaring-feedback@listserv.illinois.edu), was created and advertised as a means for the campus community to provide input. A total of 25 messages were sent to this alias. A wiki page was created at [https://wiki.cites.uiuc.edu/wiki/display/emailcalendaring/Feedback](https://wiki.cites.uiuc.edu/wiki/display/emailcalendaring/Feedback) for users to post feedback. A total of 13 comments were posted to this page. A series of town hall meetings and meetings with individual units were also scheduled.
**Town Halls**
Four town hall meetings were held during February 2009 to provide in-person opportunities for faculty, staff, and students to provide feedback. These were announced by massmail messages to campus.

- February 16, 2009: Graduate Students
- February 18, 2009: Faculty / Staff
- February 23, 2009: Undergraduate Students
- February 25, 2009: Faculty / Staff

The attendance at the student town halls was extremely poor (three grad students, one undergrad). Each faculty/staff town hall had 20-30 people present with the overwhelming majority being IT staff. The only faculty in attendance were ones who are also IT staff on campus.

**Unit Meetings**
Invitations were sent to all major units on campus with an offer to meet in person and discuss their specific email and calendaring needs. These meetings were attended by Chuck Thompson (committee chair), Kelly Bridgewater (committee member), and Karen Athy-Penrose (CITES project manager assigned to email/calendaring project). 7 of 17 colleges accepted the invitation as did 8 of 16 administrative units. Note that 4 of the 10 colleges that did not accept were represented by members of the committee and a fifth provided written feedback. The units met with are:

- Applied Health Sciences, General Studies, Law, GSLIS, Media, Medicine, Vet Med
- Library, Undergraduate Admissions, Registrar, F&S
- Public Affairs, Alumni Association, Athletics, AITS

**Survey**
A survey was prepared by the committee with generous assistance from Maryalice Wu and Dawn Owens-Nicholson of the ATLAS Survey Research Services group. The survey was conducted between March 20, 2009 and April 3, 2009. It was sent to a stratified random sample of University of Illinois faculty, civil service staff, academic professional staff, and students on the Urbana-Champaign campus. Follow-up messages were sent to encourage completion.

The survey was sent to a total of 5,609 individuals and had a response rate of 33%. The margin of error was 1.23% with a 95% level of confidence. Respondents were asked questions about their preferred computer operating systems, web browsers, email clients, electronic calendaring systems, and social network websites. Additionally respondents were asked about which email and calendar features are most important to them.

The final results of the survey are posted at [http://illinois.edu/goto/emailcalendar](http://illinois.edu/goto/emailcalendar).

**Preliminary Recommendations**
A set of guiding principles and preliminary major recommendations were publicly posted on April 22, 2009 to [http://illinois.edu/goto/emailcalendar](http://illinois.edu/goto/emailcalendar). No general announcement was made about their
availability. A note was sent to the Council of Academic CIOs asking them to announce the availability of this information within their units. A total of 33 comments were posted to the recommendations page.

**User Counts**

The counts in the following tables are taken from the University’s 2009 Pocket Facts book at [http://www.uillinois.edu/our/publications/pdfs/PocketFacts09.pdf](http://www.uillinois.edu/our/publications/pdfs/PocketFacts09.pdf). The highlighted line represents the user count for what the committee is recommending for the initial implementation.

**System-Wide Counts**

The faculty and staff counts are FTE, not headcount. The discrepancy between the “Campus Totals” and “Summary Totals” for faculty and staff are primarily due to UA and Global Campus employees not being included in the campus totals.

<table>
<thead>
<tr>
<th>Campus</th>
<th>Undergrad</th>
<th>Grad</th>
<th>Professional</th>
<th>Faculty</th>
<th>Admin/Prof</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urbana</td>
<td>31173</td>
<td>9174</td>
<td>1032</td>
<td>3015</td>
<td>3984</td>
<td>4628</td>
</tr>
<tr>
<td>Chicago</td>
<td>15648</td>
<td>7080</td>
<td>2515</td>
<td>2457</td>
<td>3858</td>
<td>5322</td>
</tr>
<tr>
<td>Springfield</td>
<td>2044</td>
<td>1012</td>
<td>2860</td>
<td>247</td>
<td>225</td>
<td>297</td>
</tr>
<tr>
<td><strong>Campus Totals:</strong></td>
<td>48865</td>
<td>17266</td>
<td>6407</td>
<td>5719</td>
<td>8067</td>
<td>10247</td>
</tr>
</tbody>
</table>

| Summary Totals: | 48865 | 17266 | 6407 | 5726 | 8953 | 10646 |

**Scenario Counts**

Even in an outsourcing scenario, some percentage of students may need to be given accounts on the campus systems. For undergrads, 1% of the relevant population is assumed to need accounts. For the scenarios where grad students are not given accounts, 5% of the relevant population is assumed to need accounts. The retired count shown is for the Urbana campus only.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Grad</th>
<th>Prof</th>
<th>Faculty</th>
<th>Staff</th>
<th>Retiree</th>
<th>Undergrad</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>U-C faculty/staff</td>
<td>459</td>
<td>52</td>
<td>3503</td>
<td>8798</td>
<td>1313</td>
<td>310</td>
<td>14434</td>
</tr>
<tr>
<td>U-C faculty/staff/grad/prof</td>
<td>9174</td>
<td>1032</td>
<td>3503</td>
<td>8798</td>
<td>1313</td>
<td>310</td>
<td>24130</td>
</tr>
<tr>
<td>System faculty/staff</td>
<td>863</td>
<td>320</td>
<td>6347</td>
<td>19653</td>
<td>1313</td>
<td>490</td>
<td>28987</td>
</tr>
<tr>
<td>System faculty/staff/grad</td>
<td>17266</td>
<td>320</td>
<td>6347</td>
<td>19653</td>
<td>1313</td>
<td>490</td>
<td>45389</td>
</tr>
<tr>
<td>System faculty/staff/grad/prof</td>
<td>17266</td>
<td>6407</td>
<td>6347</td>
<td>19653</td>
<td>1313</td>
<td>490</td>
<td>51746</td>
</tr>
</tbody>
</table>

**Costing**

The committee did not perform an in-depth review of potential service costs. There are three points related to the cost of the recommended service that were observed by the committee during its work:

1. The Google and Microsoft outsourced solutions do not, themselves, cost anything. There will, however, be transition costs for migrating to these solutions (e.g. training helpdesk staff to support the new services).
2. The committee did receive a briefing on an internal CITES cost analysis between Microsoft Exchange and Zimbra. This analysis showed Exchange costing less than Zimbra for a campus deployment. This analysis was completed before the committee began its work and was based on a number of assumptions about the parameters for a new service that do not match exactly those being recommended by the committee. The committee did meet with NCSA about their Zimbra installation. Their rough cost parameters were in-line with those used in the CITES study. The committee believes that the transition costs to Zimbra will be far higher than for Exchange due to the very high existing usage of Exchange on-campus.

3. The committee met with AT&T and discussed their hosted Exchange service. AT&T was given details on the projected size of the new campus service and used this information to provide a rough order of magnitude cost estimate for hosting the service. The provided costs were well outside the realm of feasibility, with the monthly cost being close to what CITES has been spending on an annual basis for the current email/calendaring services they provide.

Email and Calendaring Product References

- Google Apps for Education - http://www.google.com/a/edu/
- Microsoft Live@edu - http://www.microsoft.com/liveatedu/

Compendium of Recommendations
The following is a list of the specific detailed recommendations that are include in the “Primary Recommendations” section report after the initial primary recommendations summary.

1. The default quota for faculty/staff should be at least 5GB. The default quota for all others should be at least 2GB.

2. The governance committee and technical advisory boards should review the default quotas annually and recommend increases as necessary to ensure that most users do not hit their limit.

3. A mechanism must be created to allow all users of the service to purchase additional quota. This mechanism should take into account potential annual increases in the base quotas.

4. The governance committee should define groups of special users who may need larger default quotas than the common standards (e.g. deans, department heads).

5. The current campus maximum message size limit of 65MB is sufficient and should be kept.

6. Units should be provided with shared mailboxes at no charge for any business function that is handled by multiple people or that is strongly associated with a particular office (e.g. business@unit.illinois.edu). “Unit” may include student groups who should be provisioned with shared mailboxes on the Google Apps or Microsoft Live services rather than the campus Exchange service.
7. The governance committee should create a specific policy on allowed shared mailboxes and be the final arbitrar of the validity of any shared mailbox request. All shared mailboxes allowed by policy should be provided at no charge to units. A charge should be determined for shared mailboxes that fall outside of the created policy.

8. Resource calendars should be provided at no charge to units for rooms and equipment.

9. The governance committee, in conjunction with the technical advisory boards, should determine a standard set of types that these calendars will be organized by. Types recommended for consideration include “conference room”, “projector”, “conference room”, and “parking space”.

10. The governance committee should actively explore creating a standard naming scheme for conference rooms. This is intended to facilitate campus users locating the calendar for the specific rooms they are interested in. F&S has a implemented a scheme and is a suggested starting point.

11. Documentation should be developed to educate campus users on how to use resource calendars and, in particular, the automatic scheduling management functionality that Exchange has for these types of calendars.

12. The governance committee should determine what events should be provided as calendars in a format that individuals can import into their personal calendars (Exchange, Google Apps, and/or Microsoft Live). The technical advisory boards should oversee the implementation of these calendars.

13. The governance committee should investigate whether some event calendars should be implemented as Exchange, Google Apps, and/or Microsoft Live calendars either as a replacement for, or in addition to, a campus Webtools calendar.

14. The new service must be based on Exchange 2010. The Exchange 2010 release, due out in late 2009, is the first Exchange release to have a web interface that fully supports browsers other than IE (and, by extension, OS’s other than Windows). This is critical given the significant usage of OS X on campus. It will also provide support for platforms other than Windows and OS X (most notably Linux).

15. The BlackBerry Enterprise Server should be a part of the subsidized service. In addition, the necessary client license (currently ~$60 per copy) should be provided to faculty and staff at no charge. All other users of the service should be required to pay for the client license.

16. Full documentation and support should be provided for mobile users using BlackBerry, iPhone, and Windows Mobile devices.

17. Conduct a technical evaluation as to the feasibility of mass migrating student email from CITES Express to the Google and Microsoft outsourced services.

18. Create a published transition plan that announces when all student accounts must be migrated off of CITES Express.

19. Provide documentation for students to migrate their own email to the new services from CITES Express as well as generic IMAP-enabled services.

20. Create an integrated account management tool for students to activate their Google and/or Microsoft accounts and to set their @illinois.edu address.
21. CITES Helpdesk should develop new procedures and documentation as necessary to support these outsourced services. Their support should be integrated with that provided by the vendors.

22. Mass migrations of users email from the current CITES Express and CITES Exchange services to the new campus Exchange service must be done.

23. Tools, processes, and procedures must be developed to facilitate administrators of major existing unit-level email services mass migrating their users to the new Exchange service.

24. Documentation must be provided to facilitate users migrating their own email from CITES Express or any generic IMAP-enabled email service.

25. Documentation must be provided for how to configure and use major email clients with the new Exchange service.

26. Documentation must be provided on how to migrate locally stored email to the service. Tools may also need to be provided to convert email stored in non-standard formats.

27. Address books and filtering rules should be automatically migrated to the largest extent possible. Documentation on how to recreate these items in the new service will be required regardless of what tools are identified to do this migration.

28. Documentation and CITES Helpdesk assistance must be provided on how to reconfigure mobile devices to use the service.

29. Mass migrations of user and resource calendars from the current CITES Oracle Calendar and CITES Exchange services to the new campus Exchange service must be done.

30. Tools, processes, and procedures must be developed to facilitate administrators of major existing unit-level calendar services mass migrating their users to the new Exchange service.

31. Training must be provided on how to use calendaring in Exchange with an initial focus on users who are coming from other calendaring services.

32. For approximately the first year of the transition, provide free CITES FAST3 training for end users on the use of the most email/calendaring clients.

33. Campus administration should strongly encourage units to allow staff to attend either campus or unit provided training.

34. Free end user online training should be provided on an on-going basis.

35. Training courses should be provided for campus IT staff on how to support their end users, including training them to provide training their end users.

36. Unit IT staff must be provided with a set of tools to allow them to perform basic account administration and troubleshooting. This includes providing the ability to unlock accounts, manage quotas, create resource mailboxes and calendars, and create distribution lists.

37. The governance committee must determine how to address the provisioning of services to users who experience a change in their status with the university that changes what email/calendaring services would normally be provided to them.

38. A campus effort to design a next generation Active Directory domain in conjunction with UA has already begun. The committee strongly recommends that this effort be given a high priority and the resources needed for it to be completed successfully with a design that supports an Exchange 2010 environment that accomplishes all of the recommendations in this report.
39. An investigation must be done to determine alternate technical means for users of non-Windows systems to set delegates.

40. Conduct accessibility testing of Exchange 2010 and the Google and Microsoft outsourced solutions and evaluate additional clients that may be useful to provide with use of these services. Email and calendaring components of the services should be evaluated both independently and jointly. Web interfaces, think clients, and mobile clients should be test.