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### GOOGLE APPS FEATURES SUMMARY
Introduction

Click here to open the Task Force Charge:
https://docs.google.com/a/gtest.onid.oregonstate.edu/document/d/1pjdlidkhvdg8lzzjt5n3oqbj4ajbxht0x9p16y82hu/edit?hl=en_us

Google Apps Task Force Roster

MICHAEL HENTHORNE, STUDENT AFFAIRS (CHAIR)
CHRIS SINNETT, INFORMATION SERVICES (TF OPERATIONS)
MIKE ALTIMUS, FORESTRY
SCOTT AUGSTED, AGRICULTURE
DENNIS BENNETT, WRITING CENTER
DANN CUTTER, HATFIELD MARINE SCIENCE CENTER
BEN DANLEY, ALUMNI ASSOCIATION
HARIS GUNADI, DISABILITY ACCESS CENTER
ROB HOLMAN, COAS
DAN HOYNACKI, MARION COUNTY EXTENSION
KEVIN HULSE, UNDERGRADUATE STUDENT
CLIF JOHNSON, SCIENCE
KARRA JOHNSON, VERY RECENT ALUMNA
ROGER LEIGH, HORTICULTURE
BILL LOGES, COMMUNICATION & NEW MEDIA
JANE NICHOLS, LIBRARIES
ROBIN PAPPAS, CENTER FOR TEACHING & LEARNING
TODD SHECHTER, ENGINEERING
DOUG WEIR, COLLEGE OF BUSINESS
CATHERINE WILLIAMS, INFORMATION SERVICES
Task Force Subcommittees

**Research Subcommittee**  
**CONVENER: TODD SHECHTER – ENGINEERING**
This subcommittee should determine the pluses/minuses of using Google Apps in support of OSU Research efforts. The results should reflect the experience of other institutions supporting Research efforts using Google Apps, as well as the subcommittee’s own experience with the Google Test Site. The committee should also provide preliminary guidelines for data that may not be appropriately stored in the cloud (e.g. Classified Research, Intellectual Property, IRB, HIPAA.)

**Technical Requirements Subcommittee**  
**CONVENER: MIKE ALTIMUS – FORESTRY**
This subcommittee should determine the pluses/minuses of using Google Apps from a technical support perspective. What are the IS advantages/disadvantages? What are the security issues with Google Apps? What resources are necessary for successful implementation and integration?

**E-mail/Calendar Subcommittee**  
**CONVENER: CATHERINE WILLIAMS – INFORMATION SERVICES**
This subcommittee should determine the pluses/minuses of using Google Apps for student/staff/faculty e-mail/calendar and related application functions. What new capabilities offer value to the institution’s students and employees? What capabilities are a hindrance or not on a par with current systems?

**Pedagogy Subcommittee**  
**CONVENER: ROBIN PAPPAS – CENTER FOR TEACHING AND LEARNING**
This subcommittee should determine the pluses and minuses of supporting OSU’s teaching and learning services. How do Google Apps support the pedagogy of OSU faculty and how might its use detract?
General Timeline for Project Administration

Phase 1

WEEK OF JUNE 13
• VP Brooks/Sinnett/Henthorne establish broad goals/membership/subcommittees and committee leaders

WEEK OF JUNE 20 OR JUNE 27
• Task Force Orientation Meeting (will be set by Doodle poll, after looking at calendars)
• Task Force sub-committees are populated (We may add more, but for now subcommittees are Pedagogy, E-mail/Calendar migration, Research Application, Technical Requirements)
• Open Google Test site for Task Force members
• Arrange for Google Apps spokesperson to travel to OSU for face-to-face w/ Task Force members

WEEK OF JULY 11
• Task Force meeting with Google Rep.

PERIOD FROM JULY 18 TO AUGUST 15
• Sub-committee work
• All members can monitor sub-committee progress on Google Apps test site where meetings are archived

WEEK OF AUGUST 22 AND AUGUST 29
• Task Force reconvenes to begin organizing recommendations and discoveries
• Formulate Recommendation w/ Pros-Cons

WEEK OF SEPT 5 AND SEPT 12
• Determine strength of recommendation (Opt in or mandatory)
• Identify any additional stakeholder groups for Phase II

WEEK OF SEPT 19 AND 26
• Finalize report and forward to VP Brooks

OCTOBER-NOVEMBER
• Phase II begins, led by VP Brooks
• Includes stakeholder input/Policy-Council owners/IT Governance groups
• Project ends with recommendation to Provost’s Council by VP Brooks
Executive Summary

Task Force Recommendation:

The Google Apps Task Force recommends a partial implementation plan be considered for Oregon State University to begin using Google Apps for all ONID accounts at the earliest opportunity. After a thorough review of the various utilities, data management, and features, the Task Force believes that students would greatly benefit from the Google Apps that are currently available. However, Disability Access Services suggests that the implementation of Google Apps for students should be put on hold until National Federation of the Blind recommends otherwise. Adopting Google Apps or any in-accessible software could result in a discrimination complaint against Oregon State University. Consideration of a mandatory adoption for all OSU Faculty and Staff of Google Apps reveals significant concerns, such that a mandatory implementation is not recommended at this time.

One of the greatest benefits to OSU students would be the collaboration and document sharing capabilities present in Google Apps. As the pedagogy of the campus continues to move towards more group project work, the document collaboration feature is of utmost importance. There is some evidence that portions of the faculty may wish to have similar collaboration capabilities. Since all faculty and staff are also provided an ONID address, this would allow faculty and staff to opt-in to Google Apps and benefit from collaborative interaction with students, while maintaining the current systems of email and calendaring present in Exchange.

There are significant concerns in the area of Technical Applications of Google Apps. One of the areas of greatest concern is duplicating the subdomain granularity present for DCA’s and other system administrators in OSU’s current system when transitioning to the Google environment; additionally, Google does not provide log file access at the campus administrator level. There appears to be some loss of formatting in documents converted to and exported from Google Docs. Preservation of formatting becomes a significant concern when transferring years of work onto a new platform. Google also does not offer a way to create the LaTeX files many researchers must submit for grant proposals. While not specifically tasked with a cost related charge, we did not identify any significant savings that would occur from either a partial or full migration.

The Task Force recommends partial migration for ONID accounts and that an agreement for this service be negotiated with Google. This is primarily based upon the improved collaboration and group document editing capabilities present in Google Apps for our students. For a full accounting of pro’s and con’s of each area of our investigation into Google Apps use at OSU, please see the individual subcommittee reports that follow.
Subcommittee Findings

Introduction

In order for a successful introduction of Google services on the OSU campus, the services must be opt-in and NOT mandated. When questioning various research faculty members there was significant negative feedback to the ideal of Google, and even more negative feedback to the thought of a mandated system. Researchers felt that ‘The Google Way’ is not ‘my way’ or ‘the best way’.

Faculty members must be able to define their own workflow. They need to be able to organize their email how best works for them, store their files in the most efficient manner, and deal with various file formats as their research demands. Any mandated system that changes their workflow will be met with strong resistance.

STRENGTHS
1. Collaboration between researchers both within the institution and external to the institution could be enhanced with a Google adoption.
2. Calendaring for personal scheduling as well as project/team scheduling.
3. Hosted web sites and ease of site creation.
4. Amount of disk space given to faculty/students.
5. Google Code is a good repository for keeping track of software code progression and history.

WEAKNESSES
1. Tools for LaTeX paper writing, document tools are thought to be ‘primitive’. Good for initial stages of document creation but lacking features for complex documents.
2. Single sign-on ability from mobile devices.
3. Email ‘tagging’ vs folder usage; feel that faculty who have years and years of email would have a difficult time using the Google email tool.
4. Management of disk space is difficult given that there is no ‘drive mapping’ to Google server space; all upload/download is done via a website.
5. Google does not guarantee that data can or will be housed on servers on U.S. soil. However they do ‘shred’ data so that any given file is spread amongst many data centers.
OPPORTUNITIES
1. A wealth of known and unknown creative opportunities exist within the Google toolset – opportunity to be as creative as possible.
2. Calendar – if everyone were on the same calendaring system would greatly assist in campus-wide scheduling.
3. Documents, shared creation of documents could be an advantage to individual research programs.

THREATS
1. What if Google fell apart or started charging money for their services? What is our exit strategy?
2. Sites – getting away from University branding standards; suggest possible ‘OSU Google Site Templates’.
3. Loss of control over data.
4. Subject to system outages beyond our control.
5. Move to Google likely to create confusion for specific individuals as to where their data is stored; on Google or on traditional OSU file servers.
6. Would we be creating liabilities for researchers by offering Google at OSU?
7. Feeling from faculty that Google is turning into the next Microsoft and already exerts too much control over our lives and do not want to become dependent on Google.
8. Fear from faculty that Google will be used to decrease IT positions at OSU, and faculty value the importance of face-to-face time with their IT support personnel.
9. Fear from Faculty of how Google is affecting our cognitive abilities; see article: http://www.theatlantic.com/magazine/archive/2008/07/is-googlemaking-us-stupid/6868/
10. Faculty fear that Google is using higher ed as a ‘pawn’ in a strategic battle to lure higher ed customers away from Microsoft; Faculty would prefer a migration away from Microsoft to more open-source vs vendor specific (ie google).

QUESTION
1. What is the process for doing file level backup/restores from Google? How long can you restore a file for?

OBSERVATIONS
1. Email – need to ensure ability for creation of ‘aliases’ in a Google environment; ie a specific research group may need a alias for a project and wouldn’t necessarily want their own full-blown google account.
2. Will need to instill in faculty the differences between ‘protected research data’ and ‘data that is ok to be stored on Google’. Researchers must know the specifics of stipulations in their research contracts.
3. While Google sites could be nice for some groups, would want a way to specify 'good looking' URLs; i.e. engr.oregonstate.edu/research/blah instead of google.com/sites/a/blah/blah.

4. Some faculty are already using their personal Google accounts to aid in collaborations. It seems that faculty would be much more apt to go along with an 'opt in' scenario vs required use of Google which would unify the use of Google Services, yet protect the university from each person using their personal account.

Email/Calendar Sub-committee

PARTICIPANTS: TAMMY BARR, DENNIS BENNETT, DANN CUTTER, BEN DANLEY, HARIS GUNADI, ROBERT HOLMAN, ROGER LEIGH, JANE NICHOLS, CATHERINE WILLIAMS

STRENGTHS:
• For undergrads, Gmail is a tool they like and are familiar with
• Increased limit on email size and email storage
• Good, well documented APIs
• The option exists to have "Accounts For Life"; this is of particular interest to the Alumni Association for staying in touch with alumni.

WEAKNESSES:
• Interoperability between Google Calendar and Exchange is not good
• Google Calendar does not allow for delegation; this was particularly noted as a weakness by the Writing Center, where they schedule dozens of meetings with students each day.
• Faculty are concerned about having their sensitive email housed outside of OSU control and possibly outside US borders.
• Account administration is not robust (also addressed by the technology subcommittee)

CONCERNS AROUND VARIOUS IMPLEMENTATION SCENARIOS:
• An opt-in approach to undergrads would be a very difficult and expensive support problem for the OSU helpdesk
• A forced, all-in approach to faculty would be very badly received
• The most powerful benefit to having the OSU community all on one system would be around calendaring. Because of the current limitations of the Google Calendar and the unwillingness of faculty to be forced into a particular calendar solution, this benefit unlikely to be achieved.

ADDITIONAL INPUT:
The subcommittee acknowledges that financial resources revolve around these services, and would recommend that any further discussion of Google adoption
might be well served with a comprehensive analysis of fiscal impact to account for unforeseen savings and/or expenses.

**RECOMMENDATIONS:**
The subcommittee unanimously recommended that undergraduate student email be moved to Google. We see little disadvantage to this course of action and several advantages. Care would need to be taken to plan for "life time" accounts and conversion from an undergraduate status to graduate or employee statues.

The subcommittee unanimously recommends that we not attempt to force faculty, staff, or grad student email/calendar to Google.

The subcommittee is divided on the topic of using an opt-in approach for Google Mail/Calendar for faculty, staff, and grad students. About half the committee members would like to see an opt-in option for employees. They believe that if students get it, some employees will want it. They feel that the advantages of the opt-in approach outweigh the disadvantages. The other committee members feel that the opt-in approach could cause significant support issues. They also feel that the Google features, especially in administration and calendaring, will improve in the future and it might be worth it to wait. The biggest disadvantage to an opt-in approach would be that it further breaks calendar interoperability for employees.

**Technical Requirements Subcommittee**

**ISSUES COVERED:**
- Technical Issues from a System Administrator Perspective.
- Document/File Backup and Restoration.
- Technical Issues from a User Perspective.
- File format conversion and capability.
- Which apps can/will/should be activated?
- Data Migration (into the Google cloud).
- Data Migration (out of the Google cloud).
- Quota Issues (Gmail, stored files, Google Docs).
- Technical Issues from a Software Developer perspective.
- Single Sign-On (SSO) with ONID credentials.
- Documentation and Training.
- What Does Google Provide?.
- What Would OSU Need to Provide?.
- Security Issues.
• Data and Storage Issues.
• Data Ownership.
• User-related Security Issues FAQ.
• Multi-Tiered Administration Capability.
• Issues to Investigate or Resolve.

Technical Issues From A System Administrator Perspective

E-MAIL / ACCOUNT MANAGEMENT STRENGTHS:
Google provides a unified/centralized interface which will allow a small team of System Administrator’s the ability to manage users, groups, e-mail aliases (http://www.google.com/support/a/bin/answer.py?answer=33327), e-mail quotas, features, password strength (both enforcing and testing), and forcing usage of SSL during all connections.

Nice/Helpful graphs, reports and export tools are provided monitor overall activity of a domain, including information such as last login for each account.

Account creation/synchronization API is available which can tie into Active Directory or an LDAP server. Permissions could be granted to allow user creation within AD or LDAP, which would then push to the Google domain. This could be a workaround to allow distributed account management to each college/group (this still prevents Administrative access to the Google CPanel Account Management interface to the DCA’s and helpdesk staff)

WEAKNESSES:
However, this interface does not provide subdomain granularity which is needed in a large enterprise environment like OSU. This limitation would require that each college (i.e. Forestry, Science, COAS, Engineering, etc.) would need a separate Google instance in order to provide local DCA’s in each of those college’s the ability to effectively manage accounts and aliases. This would diminish the advantages of having a unified Google domain as a Global Address book would be lost, making sharing documents and calendars no different than using personal Gmail accounts.

Google also provides no access to standard log files which are used regularly to diagnose missing e-mail messages.

There is also no mechanism for applying global filters for tweaking SPAM or Anti-Virus scanning settings.

OPPORTUNITIES:
More input from the current stakeholders of each college would be needed to evaluate impact and costs of migrating their units (including ONID) to the Google Educational cloud. A possible solution which would resolve many of the Cons listed above would be
to not point the MX records of each domain to the Google SMTP servers, but allow all e-mail to first be delivered to campus SMTP servers for logging and initial processing.

Document/File Backup and Restoration

**STRENGTHS:**
Providing cloud storage where faculty, staff and students can easily collaborate (especially in real time) could greatly approve productivity. The automatic creation of revisions minimizes the need for users to ask System Administrators to restore files which are corrupted, overwritten, replaced, etc. This is also an issue with e-mail. Any messages deleted and removed via emptying the trash (or removed by the automatic “older than 60 days” Google cleanup policy), are not recoverable. A user can mitigate this by sending a copy of every message to a secondary address, or never deleting any messages.

**WEAKNESSES:**
If a document/file has been moved to the Trash folder, and then emptied, there is no mechanism to retrieve that file/document. There is also no easy, automated, tool/utility which allows users to download their documents/files and keep their own regular backups. Google is currently rolling out their Offline versions of Gmail, Calendar and Docs, so that functionality may be part of that or added at a later date. It is also good to note that if a user’s account is removed from the Google domain, any/all documents which that user shared with other users are also removed (if the Admin answers ‘yes’ to remove all e-mail and documents when removing the user) unless the documents are first transferred to another user by the departing user or by the Google Apps administrator (admins are prompted about this issue when they begin the delete user action). SysAdmins and Helpdesk staff are not provided with an easy mechanism to “become” a given user in order to remotely troubleshoot/help a user in their Google domain. More time might be required to setup convenient times to do desk side support, or rely on full PC remote control packages to “see” what the user is experiencing.

**OPPORTUNITIES:**
The cost effectiveness of the Postini add-on component could be evaluated to alleviate some of these backup/restore issues/shortcomings. A subcommittee member (Roger Leigh) noted that Google is planning on integrating the Postini add-on into the primary offering.
Technical Issues from a User Perspective

FILE FORMAT CONVERSION AND CAPABILITY
Because Google Docs is accessed online via a browser, there are very few compatibility issues that exist when you use installed software. This can save time and simplify the process of sharing and exchanging files. Whether you use a Mac, PC, or Linux computer, you access Google Docs the same way – in your browser.

Google Docs is constantly updating new features, but because it is accessed online, there is no need to install or upgrade software. Since everyone is always using the same version of Google Docs, there are no differences in saving or opening files. When viewing files on a different computer, you won’t have to worry about formatting surprises or compatibility errors.

Google Docs allows you to upload both files and folders, including an array of file types ranging from document types to image types to video formats. Third-party applications, as of May 2011, may upload any file type to a Google Account (see http://googleappsdeveloper.blogspot.com/2011/05/upload-all-file-types-to-any-google.html for more information).

These are the file types that can be converted to Google Docs:

FOR SPREADSHEETS: .xls, .xlsx, .ods, .csv, .tsv, .txt, .tab
FOR DOCUMENTS: .doc, .docx, .html, plain text (.txt), .rtf
FOR PRESENTATIONS: .ppt, .pps, .pptx
FOR DRAWINGS: .wmf
FOR OCR: .jpg, .gif, .png, .pdf

Files can also be exported out of Google Docs. The available formats are:

FOR SPREADSHEETS: CSV, HTML, ODS, PDF, XLS, TXT (only for a single sheet)
FOR PRESENTATIONS: PDF, PPT, TXT
FOR DRAWINGS: PNG, JPEG, SVG, PDF

When put to the test many Word documents lost some formatting and special objects such as charts. When exporting files some of the original formatting was not preserved. One way to preserve formatting and document type is to use the Google Cloud Connect plug-in for Microsoft Office 2003, 2007, and 2010 that lets you share and simultaneously edit Microsoft Word, PowerPoint, and Excel documents. It is supported on Windows XP, Vista, and 7 but is not currently available for Macs.

Google Cloud Connect tracks, manages andsyncs all changes on your Microsoft Office documents into one updated version for each document. Each document that you sync through Google Cloud Connect gets a unique URL that can be shared with collaborators.
WHICH APPS CAN/WILL/SHOULD BE ACTIVATED?

Core Google Apps for Education suite includes:

- Gmail: Email storage and search tools that help users find information fast and instant messaging from right inside their accounts.
- Google Calendar: Users can organize their schedules and share events and calendars with others using Google Apps.
- Google Talk: Users can call or send instant messages to their contacts for free anytime, anywhere in the world.
- Google Docs: Share documents, spreadsheets, and presentations. Collaborate in realtime with your team or with your whole school. Final documents can also be published to the entire world.
- Google Sites: Work together to keep related documents, web content and other information in one place, on one site. This is very similar to Microsoft SharePoint.
- Google Video for education: A video hosting and sharing solution that enables schools and other organizations to use video as an effective medium for internal communication and collaboration.

DATA MIGRATION (INTO THE GOOGLE CLOUD)

There are many options available for migrating data into Google Apps.

Administrators/Server side:

- Google Apps Migration for Microsoft Exchange (for IMAP and Microsoft Exchange) - Recommended for Microsoft Exchange Server 2003 and 2007, as well as any RFC 3501-compliant IMAP servers, like Novell GroupWise, Cyrus, Courier, or Dovecot. Migrate mail to Google Apps for IMAP and Microsoft Exchange mail servers. On Microsoft Exchange, you can also migrate personal contacts and calendars.
- Google Application APIs allow developers to write applications that access Google Applications such as Gmail, Calendar, and many others using Google Data APIs, Gadgets, and Google Apps Script.
- Partner Solutions for migration - Many third party vendors have created tools to assist with data migration in/out of Google Apps.

Individual users/Client side:

- Google Apps Migration for Microsoft Outlook - This standalone utility lets you migrate Microsoft Outlook mail, contacts, and calendar events (including recurring meetings) to Google Apps. You can import data to Google Apps from a Microsoft Exchange profile or PST file.
- Google Apps Sync for Microsoft Outlook - This Microsoft Outlook plugin lets you use Outlook as a client application for accessing your Google Apps mail, contacts, and calendars. You can also use it to migrate Outlook mail, contacts, and calendar events (including recurring meetings) to Google Apps. You can import data to Google Apps from a Microsoft Exchange profile or PST file. That data is then synchronized between Google Apps and your Outlook client.
- Gmail’s Mail Fetcher - This is configured with each user’s email account (rather than in the Google Apps control panel) and allows your users to fetch mail from both Gmail and non-Gmail accounts. Fetched mail is inserted into your users’ Google Apps Email accounts.
DATA MIGRATION (OUT OF THE GOOGLE CLOUD)

Google has a variety of tools and options for migrating data away from Google Apps. Here's a list of data transfer options available for Google Apps:

- **Email:** Gmail accounts offer an option to download all mail to your computer via POP or IMAP access with a local desktop client, such as Microsoft Outlook or Mozilla Thunderbird.

- **Contacts:** Each email account allows users to export the contacts list in a CSV or vCard format.

- **Calendar:** Google Calendar offers the ability to download an iCal file to your desktop.

- **Docs:** Google Docs lets you save your documents, spreadsheets, and presentations to your hard drive in various formats.

- **Sites:** The Google Sites export tool allows you to easily export your Google Site data. Alternatively, the Google Sites Data API allows client applications to access, import, export, and modify contents within a Google Site.

- **The Google Apps Marketplace hosts partners with Google Apps expertise who can assist with migrations away from Google Apps. Additionally, some advanced options include Google Data APIs for Calendar, Contacts, Docs, and Spreadsheets.

QUOTA ISSUES (GMAIL, STORED FILES, GOOGLE DOCS)

Google offers a way to purchase additional storage space shared across Gmail, Google Docs, and Picasa Web Albums (which includes photos uploaded to Blogger). Additional storage can be purchased at any time.

**Gmail**

Google Apps Education Edition now offers 25 GB of mailbox storage.

**Stored Files**

Google Apps offers every user 1GB of free storage space for files, and can purchase additional Google Docs storage to upload larger files.

**Docs**

Docs provides 1GB for your uploaded files, but documents created in Google Docs and converted files don't count towards your storage. There are built-in size limitations on files:

- **Documents:** 512,000 characters, regardless of the number of pages or font size. Uploaded document files that are converted to Google documents format can't be larger than 1MB.

- **Spreadsheets:** 400,000 cells, with a maximum of 256 columns per sheet. Uploaded spreadsheet files that are converted to Google spreadsheets format can't be larger than 20MB, and need to be under 400,000 cells and 256 columns per sheet.

- **Presentations:** Presentations created in Google Docs can be up to 10MB -- which is about 200 slides. Uploaded presentation files that are converted into Google presentations format can also be up to 10MB.

- **Drawings:** According to Google they have not had a drawing that was too big. No specific size was given.
Sites
- Site quota: N/A (quota is tracked at the domain level)
- Quota per domain: 100Gb
- Max attachment size: 20Mb
- Sites per domain: unlimited
- Pages per site: no set limit (see note below)

Videos
Google Apps for Education organizations have 10GB of video storage in total. It is not possible to purchase additional storage space.

Technical Issues from a Software Developer Perspective

SINGLE SIGN-ON (SSO) WITH ONID CREDENTIALS
The primary concern from a software developer’s perspective is whether Google Applications for Education (GAE) authentication will affect OSU’s Single Sign-On (SSO). Like many units on campus, the Writing Center has built web applications that rely on the SSO API. Refactoring these applications to conform to a revised SSO API accommodating GAE authentication needs would be costly and time consuming.

Obviously, from a software development perspective, we would prefer that GAE authentication be a separate process, requiring a separate login. We fully expect that this will actually be the case, but want to raise the issue just in case.

From Security Whitepaper: Google Apps Messaging and Collaboration Products, Google does offer the following information: Google Apps offers the Single Sign-On (SSO) service to customers with Premier, Education, and Partner Editions. Google Apps has a SAML-based SSO API that administrators can integrate into their LDAP, or other SSO system. This feature allows administrators to utilize the authentication mechanism of their choice, such as certificates, hardware tokens, biometrics, and other options.

DOCUMENTATION AND TRAINING
What Does Google Provide?
Google provides comprehensive training on their support websites, which include training videos. OSU does not need to invest time to recreate or customize the videos. Whenever Google updates its Graphic User Interfaces, we should be able to rely on Google to update the training videos.
What Would OSU Need to Provide?
Since each school adopts different sets of features in Google Apps, it only makes sense to customize Google tutorials and training materials in our own page. Generally, there are two parts to these support pages. First, most schools provide their own information on how to migrate existing email, contacts, and calendar content to Google Apps or how to connect through mobile devices (i.e. server name). Second part involves how to use Google Apps features, which most of schools use Google training videos and documentation.

Looking at Brown University (https://sites.google.com/a/brown.edu/google-migration-projectsite/home/training), the university provides two types of trainings (in-person and online training). As for in-person training, multiple open sessions provided by IT group were available before, during, and after transition. Meeting was regularly scheduled to ease the transition to Google Apps. In-person training probably only applies to faculty/staff as they have different needs then students. For example, faculty/staff may need to move their personal email archive to Outlook.

One of the concerns might be Outlook calendar features that may not be available to Google Calendar. To avoid user frustration, it is important to provide in-person training in classes in addition to online documentation on using Google Calendar to an office assistant or secretary. I believe only a small number of users on campus need to use advance calendar feature to schedule an appointment.

Security Issues
DATA AND STORAGE ISSUES
The security of stored data with Google is a great concern with most of Google’s customers. Many users want to know where their data (e-mail, documents, etc.) will be physically stored. Google’s answer to that question provides no details and simply mentions that they have a global network of data centers and that the data center locations are not published for security reasons.

Yale University delayed their implementation of Google Apps in March 2010 because Google would not provide a list of countries where the data would be hosted. The implementation was put back on track in April 2011 after an advisory committee recommended the switch be made and an Associate CIO in ITS stated, “We have a contract with Google that we think takes good care of Yale’s privacy and security.”

It is important to note that some faculty and staff will remain on local Yale-hosted email systems because of specific restrictions of the data those individuals work with (e.g. - electronic protected health information, government export restrictions). Google also likes to point out how their data is securely stored. They published “Security Whitepaper:Google Apps Messaging and Collaboration Products” in which
they describe that data is stored in a distributed file system on multiple servers. The data is chunked and replicated across more than one data center (to insure there is no single point of failure) and the chunks of data are given random file names that are not stored in clear text making them unreadable by humans.

Other items worth noting include:
- Google’s Privacy Policy is located at [http://www.google.com/intl/en/privacy/privacypolicy.html](http://www.google.com/intl/en/privacy/privacypolicy.html). Postini, a wholly owned subsidiary of Google Inc. that provides the optional “Message Discovery” and e-mail archiving app, has a separate privacy policy from Google’s Privacy Policy.
- Google provides Transparency Reports that detail both User Data Requests (typically made by the government or law enforcement) and Content Removal Requests. These requests relate primarily to criminal investigations and the most recent U.S. report can be viewed at [http://www.google.com/transparencyreport/governmentrequests/US/?p=2010-12&t=USER_DATA_REQUEST](http://www.google.com/transparencyreport/governmentrequests/US/?p=2010-12&t=USER_DATA_REQUEST).

**DATA OWNERSHIP**
Google makes no claim of ownership to the data that an organization stores on the Google servers. Google emphasizes three points with regards to data ownership:
1. We won’t share your data with others except as noted in our privacy policy.
2. We keep your data as long as you require us to keep it.
3. Finally, you should be able to take your data with you if you choose to use external services in conjunction with Google Apps or stop using our services altogether.

**USER-RELATED SECURITY ISSUES FAQ**
- Can we force SSL connections for our users of Google Apps? Yes. A Google Apps for Education implementation provides the option to allow the local Domain Admin(s) to force HTTPS (thus enabling SSL connections) for all users to provide more security when using Google Apps. **Two important points:** 1) Forcing HTTPS can make Gmail run a bit slower; and 2) SSL access applies to the most common apps (mail, calendaring, docs, sites) but it does not apply to the Google Talk tool.
- Will OSU data be encrypted when stored on Google’s servers and while it is being transferred to the client’s device? It can only be encrypted when an SSL connection has been established. See the previous question for details on how to enforce this for your users.
- Does Google Apps offer 2-step verification for user access? Yes. 2-step verification requires a user to enter a verification code in addition to their username/password combination. Typically, the verification code is sent to a mobile phone. Important: 2-step verification can’t be used for accounts using SAML single sign-on service.

**MULTI-TIERED ADMINISTRATION CAPABILITY**
If OSU will want to provide different services (Mail, Chat, Sites, etc.) for different users, then it will be necessary to define an “organization structure” in order to identify/create organizational units. A specific service can be enabled by organizational units.

For more information, see the FAQ for multiple domains and organizations at [http://www.google.com/support/a/bin/answer.py?hl=en&answer=175747&topic=29164](http://www.google.com/support/a/bin/answer.py?hl=en&answer=175747&topic=29164).
Issues to Investigate or Resolve

If the task force recommends a student-only implementation of Google Apps at OSU, then it is highly suggested that all system administrators that deal with ONID issues at a high level (e.g. – Andy Morgan) be identified and informed so that they can identify potential issues that could hamper a successful implementation.

If the task force recommends an implementation of Google Apps at OSU for everyone, then it is highly suggested that all system administrators that deal with ONID, Microsoft Exchange, and Telephone issues at a high level (e.g. – Andy Morgan, Cary Shufelt, Brandon Wells) be identified and informed so that they can identify potential issues that could hamper a successful implementation/integration.

There may also be issues to resolve (or opportunities for further integration) for faculty/staff that use existing collaboration tools such as Blackboard and SharePoint. It should be considered to identify those major stakeholders, as well, to see if there are any issues with implementing Google Apps at OSU.

Pedagogy Subcommittee:

ROBIN PAPPAS, DAN HOYNACKI, DENNIS BENNETT, BILL LOGES, JANE NICHOLS, SCOTT AUSTED

Subcommittee Comments Regarding Advantages/Disadvantages to “Moving to the Cloud” as It Impacts Teaching and Learning at OSU

STRENGTHS:

• Adopting Google Docs and Sites could provide an integrated platform for synchronous and asynchronous work on group projects for both on-campus and e-campus students and faculty. (Robin)
• In classes where students bring laptops (or laptops/tablets are available), they can work on projects during class and, because the documents/sites are sharable, individuals and groups could receive “real time” feedback from instructors in and out of the classroom. (Robin)
• Providing rich out-of-class interaction using the cloud opens up the possibility for doing more interesting work in class. For example, there may be creative ways to interact with research resources obtained through the library such as linking directly to sources. (Robin)
• Google Docs and Sites could provide an integrated platform for work on group projects for Extension Service programs and other off-campus applications, especially in its work with pre-college youth and lifelong learners. (Dan)
• In team environments where participants may have irregular attendance, it is relatively easy to keep up to speed and query or “learn” the progression of change with cloud-based projects. (Dan)
• Presentations, especially outreach or research findings, allow students to present authentic outcomes of individual or collaborative efforts. (Dan)
• Work project, utilizing forms, spreadsheets, drawings, etc can easily be moved to accessible sites for general use and information beyond academics. (Dan)

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Presentations, especially outreach or research findings, allow students to present authentic outcomes of individual or collaborative efforts. (Dan)
Work project, utilizing forms, spreadsheets, drawings, etc can easily be moved to accessible sites for general use and information beyond academics. (Dan)
• Google Apps would provide a common document platform free of charge. This helps eliminate document compatibility issues that currently exist when instructors and students aren’t using the same office suites, such as the incompatibilities between Microsoft Office, Corel Office, and OpenOffice. More energy can be focused on content rather than the tools used to create the content. (Scott)

• Google Apps provides a platform that academic support units (such as the Writing Center) could use for synchronous and asynchronous document sharing (Dennis)

• Campus-wide adoption of Google Apps will facilitate scheduling students and faculty meetings. With our current Exchange calendaring, students and faculty are in separate (and disparate) calendaring channels. (Dennis)

WEAKNESSES:

• Although Google Docs allows users to upload and then convert documents in a variety of formats, many of the advanced formatting and functions that stand alone Office suites provide (such as the charting function in Microsoft Office) are not preserved when converted to Google Docs format. (Scott)

• Students and other team members would need to have a trackable sign-in system to discourage procrastination or simply “cloud floating” instead of actively participating (Dan)

OPPORTUNITIES/AREAS OF CONCERN:

• Faculty need training in best ways to integrate cloud applications into their classroom teaching. It isn’t enough to provide the technology. (Robin)

• Because of the potential implications of coordinating in-class courses/curriculum with Extension, e-campus, and OSU/K-12 pipeline initiatives, we’ll need some mechanism for keeping all parties up to date on innovative uses of Apps. (Robin)

• I wouldn’t want to implement a broad Apps platform for faculty until we’d also developed a mechanism for thinking about and sharing what, when, and how users assess the learning associated with/facilitated by using the cloud resources. (Robin)

• A test or phased-in approach may be warranted to stimulate new and regular habitual use and practice to build confidence in individual skills, reliance on the information, and minimization of falling back on “old comforts”. Personally, if I don’t use this at least twice of week, it morphs back into a foreign object (Dan)

• Longer term projects with longer intervals between active participation or open-ended involvement (Such as Robin’s wellcrafted but multiple pleas for our input here :-)) may require a digital prod , perhaps Google COACH to offer reminders on specific action steps (Dan)

• Perhaps encourage a controlled test of a classroom cloud series of projects vs. the same ones using traditional methods to measure differences in acceleration of individual vs group learning/understanding over a measurable period of time. (Dan)

• Faculty tend to gravitate toward a “one size fits all” approach and would likely be resistant to having a non-Blackboard tool. (Dennis)
Institutional Transition Examples

Macalester College

Compiled by Dennis Bennett, Writing Center

Macalester College’s previous email system was broken and unsustainable. I mention this only because it seems to have had a positive impact of their assessment of Google mail and calendaring. Having said that, they also evaluated Zimbra Collaboration Suite, Mirapoint, and Novell GroupWise. Google Apps for Education (GAE) scored highest on their rubric. Additionally, Macalester was an early adopter of GAE (2007), so they were a bit tentative regarding the product.

PROS:

• Reliability of Google mail and calendar
• Their evaluation rubric scored Google Apps above Zimbra, Mirapoint, and Novell GroupWise over all dimensions of their rubric except system integration, where it placed 2nd behind Novell GroupWise
• Peer adoption (other institutions)
• Cost
• Feature set
• Usability (higher than all other competitors)
• Offline access via Google Desktop
• POP and IMAP desktop capable
• Lifetime accounts

CONS:

• No storage of deleted messages after 60 days
• Privacy concerns about data in the cloud

Whitman College

Compiled by Robert Holman, Coas

The supplied answer was in form of an FAQ list about “WhitMail”, so represents more the party line versus an objective assessment. Content was adapted, with permission, from St. Olaf College. Relevant contents are shown below:

ADVANTAGES:

• Retained Whitman domain
• Larger capacity messages and attachments
• Superior web-based mail system.
• Fantastic search capabilities
• Accessible from mobile devices with web browser
• Has vacation responder
• Strongly recommend using webmail client but can support POP or IMAP

DISADVANTAGES:
• Four year contract for free services. Unknown what happens then (likely not an issue).
• Supports labels, but not folders for organizing mail
• Cannot search for partial words, only full words
• Google accumulates aggregate, non-personal info to improve services so there is good privacy but not complete.
• File/print does not work. Need to use context menu on message.
• PCs don’t have an automatic new message alert capability
• Don’t get personal copy of message from mailing list sends (need to go to sent).
• Disables mailbox if you look like spam (>500 messages per day, >500 recipients on a message). For comparison, Google says that IMAP or POP won’t let you do more than 100 recipients.
• Trash is automatically emptied after 30 days and is irretrievable thereafter.

University of Southern California

Compiled by TAMMY BARR, TECHNOLOGY SUPPORT SERVICES
Moved to Google email for students; morphed from gmail for students to google apps for students.

PROS
• More storage
• Large number of students already forwarding mail to other providers (many to Google)
• Simplifies email creation experience

CONS
• Google releases new functions (some major) without advance notice; help desk implications
• 4000 hours logged for project
• Policy drove project rather than technology
• Issues with account administration (renaming accounts, recovering accounts, etc.)

University of Maryland–Baltimore County

Compiled by CATHERINE WILLIAMS, ENTERPRISE COMPUTING SERVICES
Moved to Google email for all students. Optional for faculty and staff. After a year almost all staff and 40% of faculty are using Google mail. Moved all students, faculty and staff to Google Calendar. Provisioned Google Docs for everyone.
**PROS:**

- UMBC saved money

**CONS:**

- Some faculty with International Traffic in Arms Regulations (ITAR) export restrictions may not be able to move to Google mail.
- Many faculty members were worried about email privacy with Google.

**Miscellaneous comments**

Moving employees to gmail

**PROS:**

- 25 GB can put all email and archives into one mailbox

**CONS:**

- Calendaring issues
- Migration process for those with many Exchange archives

**Simmons College**

**COMPILED BY BEN DANLEY, OSU ALUMNI ASSOCIATION**

Similar to Macalester College, Simmons email/calendaring systems were antiquated and causing user frustration, so they were forced to make a change. They only investigated cloud-based providers: Google Apps for Education and Microsoft 365 for Education.

The document they shared with us was a recommendation to go with Google Apps, so they hadn’t actually made the transition as of publication, and therefore may have run into unforeseen issues not covered in this report.

Many of the pros and cons they identified have been covered by other committee members’ summaries, so I’ll try to focus on new topics.

**PROS:**

- Many users familiar with Google.
- Mobile device capabilities
- Cost
- Has been adopted by many schools (as compared to Office 365 for Education, which hasn’t released yet).
- Continuous improvements made by Google.
- Lifetime email addresses

**CONS:**

- Students visiting mainland China had difficulty accessing. (This was resolved – unclear whether it was technical or political in nature)
• Some resistance to Google-as-a-concept. Education needed about privacy/ad differences between Google and Google Apps for Ed.
• Possible accessibility concerns for the blind. Google said most concerns would be addressed by fall 2011, remaining by end of 2011.

North Carolina State University
COMPILLED BY JANE NICHOLS, OSU LIBRARIES
In 2009 students took the initiative to move to Google email. In 2010 NCSU deployed Google Apps Education Edition (GAEE) for students. Interestingly, many employees asked to have a GAEE account and since then NCSU is moving towards GAEE for all employees.

NCSU underscored the need to provide end-users training and documentation for this significant migration. (UMN’s site was called out as a great example.) Below are many of the items NCSU documented as features their campus identified in NexGen E-mail Task Force Final Report July 2010.

PROS
• All students and employees on same email/calendaring system
• Students had more storage space, integrated antivirus and antispam
• Email
  » Highly ranked features (7.5 10.0) deemed universal that Google email/calendar meets are: e-mail search, organize email, robust web interface, runs on all operating systems, spell check, mobile device compatible.
  » Widely used features (5.0–7.4) are: create rules, vacation rules, color code and flag messages.
  » Limited use features (below 5.0) include: manual archiving (retention system w/ no quota); share/delegate a proxy email account; access offline; open email in more than one window; allows limited message preview pane; merge mail and creating template emails is cumbersome; threads conversations/emails.
• Contacts/Address book
  » Can create personal contacts and groups; can access a global address book; auto-completion and auto-listing available (but can’t turn off)
• Calendaring
  » Schedule recurring meetings; manage calendar from a mobile device; busy search; manage resource calendars (done through resource accounts); Ability to share calendars with granular permissions; mark meetings private; ability to see meeting attendees and status of attendees and to receive decline/accept meeting request; printable calendar; see and schedule resources in calendar; overlay calendars when multiple calendars are available to the user; can color code and categorize calendar entries; pre-created calendar entries for campus holidays; integrate notes or documents with meetings; tasks and to do lists; robust web interface & search event reminders via e-mail, popup, or SMS text message; convert e-mail to
calendar entry or task; publish calendars to Web for public viewing & can embed Google calendars within websites

CONS

• Email
  » These limited features were called out as cumbersome or unavailable: does not allow you to see recipient actions (reached destination, email opened/read); canned responses are limited; can’t share individual folders; can’t reply as a different person; multiple signatures available through Canned Responses Lab; can’t retract email, schedule when email is sent; support for graphical templates is via a workaround.

• Contacts/Address book
  » Share address books/groups is through a workaround; sorting contacts by different fields partially available

• Calendaring
  » Ability to set rules/permissions for calendar invites and postings based on specific conditions is partially met by Google or through a workaround. Google does have several permissions levels for calendar invitations. Conditional acceptance (the rules portion of the question) is not possible, as calendars do not have rules or filters. However, some conditional calendar actions are available. Google Calendars have several permission levels for calendar appointments and invitations.
  » Unsure if Resource Calendars can send to e-mail confirmations

In sum, NCSU cited greater collaborative opportunities for all on campus; one central calendar and email system; user friendly web client; anywhere, anytime access; mobile friendly and cost savings as reasons to adopt Google Apps. See http://google.ncsu.edu/webfm_send/62.
Google Apps Features Summary

https://sites.google.com/a/gtest.onid.oregonstate.edu/google-appstask-force/