Appropriate Use of "Cloud Computing" Services
by the Michigan State University Community

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WORKING DRAFT

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Purpose

"Cloud computing" services represent a growing variety of useful services available on the World Wide Web and the most innovative and rapidly developing portion of the technology market space. "Cloud computing" promises to provide a large number and variety of services that will be very useful to faculty, staff and students at MSU. The business models and terms of use of these services often involve a variety of real risks to users and the content they deploy in these services.

This document is intended to provide guidance to help individuals make informed, well-considered choices about appropriate use of "Cloud computing" services. It includes explanation of current concepts of cloud computing, current examples, and factors all faculty, staff and students should review.

Background

"Cloud computing" is a general term used to include a variety of computing and information services and applications run by users across the Internet (in the "Internet cloud") on the service provider's systems, instead of run "locally" on personal computers or campus-based servers. These Internet-based services are sometimes called "software as a service" (SaaS), or "platform as a service" (PaaS), or "hosted" applications, storage or computing.

The most common model used for marketing and the user relationship with these services is a "business to individual" (B2I) model, wherein the service provider (a business) offers the service to individual users. Cloud computing services also may be offered in a "business to business" (B2B) model, wherein the service provider (a business) offers its services to other business entities. B2I models most typically involve a service agreement (usually called "Terms of Use") that may be executed by the individual end user at the time of initiating the service by clicking an "I Accept" button on the service's website (called a "click-through agreement"), or by the user indicating their acceptance of the terms of use simply by beginning, and continuing, to use the service. B2B models generally involve a service agreement that is formally negotiated and executed between the service provider and the user business entities.

[1] CAFEs are Communities for Advising, Facilitating, and Enabling and advice the Vice Provost's office on a variety of policy, practice and service matters (http://lct.msu.edu/cafes/index.html).

Some examples of cloud computing services include Google Apps, Microsoft Live services, Amazon Elastic Compute Cloud and Simple Storage Service. As of early 2008, cloud computing is still an early and somewhat immature business model. The model is rapidly evolving, however, and everyone expects that it will begin to dominate the ways in which computing and information services are provided for the foreseeable future. Because of heated competition in this space, we can expect considerable innovative investment will be focused here. Many cloud computing services are offered free or at very low cost in order to attract and compete for user volume. Therefore, we expect that cloud computing ***will*** be used by Michigan State University students, faculty and staff.

Why should everyone be concerned personally about making good choices regarding appropriate uses of cloud computing?

Almost all decisions to use cloud computing applications are made by individual users. The content those users deploy in the service may involve sensitive data, or valuable intellectual property, or institutional business records. The service may play a key role in the execution of an important academic or business process, such as teaching or taking a class, analyzing research data or developing a paper for publication, or processing or storing University business records. We all have a shared interest in protecting academic and business processes against unwanted disruptions, and protecting intellectual property and sensitive data against loss or unauthorized access and use. Therefore, ***all*** individuals need to be prepared to take responsibility for their own individual choices to use cloud computing applications in support of their University work.

Key factors to consider

When considering whether a cloud computing service is appropriate for use in a certain situation, give the following factors due consideration.

> Non-negotiated terms of use. The terms of use of many cloud computing services are non-negotiated. The user has only the choice to accept the terms of use as they are (or may become; see below), or to not accept the terms of use and stay away from the service. This makes it very important to read and think about the terms of use that are presented.
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> Transfer of license. Do the terms of use involve any transfer of license giving the service provider rights to make use of the user's content? Terms of use may include a provision that, by using the service, the user is granting the service provider a broad range of rights to use the content the user places in the service. Users should take care to note the difference between ownership and rights of use. Terms of use often state that user content is owned solely by the user, but the terms of use sometimes *also* grant the service provider the right to make its own use of user-owned content in ways the user-owner may find objectionable. Ownership and rights of use are generally addressed in separate sections of

terms of use, sometimes obscuring the distinction between ownership and rights of use in the agreement.

Security and privacy. Do the terms of use commit the service provider to keeping a user's data secure, or even private from other legitimate users of the service? Do the terms of use give the service provider rights to make use of the user's identity (may the service provider share user information with business partners, or sell user information)?

Backups. Do the terms of use commit the service provider to back up user data?

Assured purging. Do the terms of use commit the service provider to fully delete from the service any content, including distributed or backup copies, that the user has intentionally deleted from their use of the service?

Non-negotiated changes to terms of use. Are the terms of use posted obviously on the service's website, or are they hard to find? What do the terms of use say about the service provider's ability to change the terms of use? Do the terms of use commit the service provider to: notifying the user of any such changes?; or simply posting changes on the service's website, with the user being responsible for constantly monitoring the posted terms of use to know when they have changed? Do the terms of use require that the user formally acknowledge changes to the terms of use, or does the user accept the new terms simply by continuing to use the service? It is not unusual for terms of use to grant the service provider the right to change the terms of use at any time and in any way without the permission of the user and frequently without notifying the user. This simple provision means that the "agreement" essentially provides *no* real protections for the user, because any of the protections articulated in the version to which the user agrees can be changed at any time by the vendor. (Note: In early 2008, some terms of use for cloud computing services were observed to change as frequently as every 2 months. Because this business model is highly competitive and rapidly evolving presently, terms of use often change *in favor of the user*.)

Non-negotiated changes to the service. Can the service provider change the service itself (for example, stop providing it at all) without notice to the user? If with notice to the user, what period of advance notice is provided to the user by the service provider, and by what means (direct notification?; a posting on the service website?)? Remember that a service may terminate due to the service provider's business failure or acquisition by another party, and that this may cause abrupt changes not addressed by the terms of use.

Non-negotiated changes to the business model. Can the service provider change its business model?; how likely is this? Critical changes to the business model could include changes to the service feature set, or changes to the pricing model, or a combination (e.g., moving from "all features free" to "basic features free; valuable features at a price").

Data formats. Are the formats in which data are stored by the service standard or proprietary? Will the user be able to easily remove their content, or copies of the content, from the service and use it in other places or with other applications?

Indemnity. Just how vital to University business is the use being made of the service? What if something truly unwanted happened while University data was deployed in the service (e.g., a major business disruption; loss of vital data or business records; unauthorized access to sensitive data)? Terms of use generally contain language by which the user agrees to hold the service provider harmless if the service provider does any damage to the user's data or ability to use the service (to support the user's business uses). Sometimes the indemnity language is even more favorable to the service provider, and may expose the user (University) to liability to pay the service provider's legal expenses.

Risk triage

The following risk triage steps can be helpful to determine the appropriateness of using a cloud computing service. The triage is designed to help identify potentially appropriate uses by eliminating the riskiest use cases, based on the types of data intended to be deployed in using the service. The triage also identifies ethical issues worth consideration.

1. Confidential institutional data. MSU is obligated by law and certain contractual obligations to protect certain types of data. These data types are described in the Guidelines for Internal and External Reporting of Data System Security Breaches found at http://lct.msu.edu/documents/security-breach-guidelines.pdf where they are referred to as "confidential data." Cloud-computing services must *NOT* be used with any of these confidential data types, unless an appropriate contractual agreement can be negotiated with the service provider by the University. Click-through terms of use rarely if ever provide appropriate contractual terms.

2. Institutional business records. The International Standard for records management, ISO 15489, defines a "record" as "information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business." Many types of data we receive or create every day fit this definition and do not necessarily involve confidential data types, but deserve appropriate care in how we manage the records. Business records can take the form of e-mail, e-mail attachments and other electronic communications, calendar entries (particularly those involving important meetings or events; e.g. meetings involved in due process protocols; vendor contacts during bidding; etc.), and documents posted and edited in file shares, wikis and a variety of other electronic tools. Cloud-computing services must *not* be used for work involving University business records, unless an appropriate contractual agreement can be negotiated with the service provider by the University. Click-through terms of use rarely if ever provide appropriate contractual terms.

3. Student, faculty and staff intellectual property. MSU's Intellectual Property policies (see the Office of Intellectual Property website, http://oip.msu.edu/) and policies regarding student intellectual property (see the Code of Teaching Responsibility, http://www.hr.msu.edu/HRsite/Documents/Faculty/Handbooks/Faculty/Instruction/v-codeofteaching.htm) define the types of intellectual property that belong to students, faculty and staff. Sometimes this property needs to be protected carefully (e.g., content with patent or other commercial potential) and should not be placed in a cloud-computing situation unless an appropriate contractual agreement can be negotiated between the University and the service provider. Sometimes the owners of this property care less about its protection than they care about the value of the services they will be receiving from cloud computing. These trade-offs should be considered before using a cloud-computing service, and the choices should be made by the involved content owners.

4. Agency decisions. One person should not make a decision regarding use of cloud computing when others who are party to the use but not party to the decision may have valued data involved. Student's class work is their own intellectual property; if an instructor chooses to use a cloud-computing application in a class, the application's terms of use should be reviewed with the students in the class, and the instructor must be willing and able to provide an alternative if a student decides not to use the service due to objections to its terms of use. Similar regard should be given to faculty or student collaborators and their intellectual property if a cloud-computing service is chosen for use to support a research project or other form of group collaborative effort. All members of the collaboration or work group should be aware of the conditions of use for the tools they are using, and should reach a consensus decision about the value of using those tools.

When you are not sure, ask

If you are unsure about a choice regarding cloud computing, please do not hesitate to contact the MSU Libraries Distance Learning Services helpdesk for assistance.

Distance Learning Services
517-355-2345
800-500-1554
E-mail: reachout@msu.edu
http://www2.lib.msu.edu/about/dls/division-dls.jsp