

Office of the CIO Information Technology and Integrated Planning A Discussion Document

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Objective

The purpose of this document is to explore ideas, options, and directions related to information technology that would advance and support the University and its individual colleges and units. It is intended as a means to contribute to the development of the next University 5 year Integrated Plan.

The proposals described in this document are exploratory and not exhaustive. The dialogue encouraged by this document, and other interactive discussions, will provide additional ideas, expand on some, and challenge others.

As Michael Wesch (a leader in teaching innovation and new media at Kansas State University) has noted: “As we increasingly move toward an environment of instant and infinite information, it becomes less important for students to know, memorize, or recall information, and more important for them to be able to find, sort, analyze, share, discuss, critique, and create information. They need to move from being simply knowledgeable to being knowledge-*able*.”

It is assumed that core technologies and services will continue to be supported and respond to increases (and decreases) in demand. As a result this basic level of infrastructure, while critical to the academic and administrative missions, is not discussed here unless the proposal extends beyond normal plans. However, it is a strategic objective of the Office of the CIO to actively explore opportunities to leverage existing technologies and services in new and innovative ways.

This discussion document has been created by the CIO to **challenge** both the University and the units of the Office of the CIO to explore new opportunities and new ways that information and information technology can benefit Guelph.

Ten Themes

1. Internationalism

The University has long held internationalism as a strategic objective. While a coordinated, enterprise response to international experience has been challenging, faculty and students have engaged in many substantive and beneficial initiatives. Could IT be a significant participant in an enterprise strategy?

IT is used as both a window and a bridge to open up connections among people. By encouraging the use of new and existing IT tools and services, the University can use digital space as a platform for international connections, relationships and collaboration.

For example, the next “president’s forum” type event could be held online with the expressed purpose of facilitating international participation. Students, as part of their courses, could be encouraged (required?) to podcast, stream, post, etc. materials or ideas specifically aimed at generating engagement with peers in other countries.

While some of these ideas require new technologies or new services, many are simply a matter of coordinating and encouraging the use of existing tools (either at Guelph or available freely or cheaply on the Internet). The critical difference is that as part of an overarching international plan, the University would actively support IT as an element of internationalism and provide the direction, guidance, profile, and encouragement that would engage faculty and students.

2. Information

While the title of this document references “information technology,” the critical underlying elements are the information resources themselves. The true focus of any information technology strategy should be the information.

Information is a strategic asset. It needs to be managed in a manner similar to other valuable commodities. Currently information is largely managed by individual units and shared only if necessary. While critical information assets (e.g. those governed by legislation, regulation or University policy) need special attention and coordination, much of our information could easily be made more widely available to both the internal and external communities.

A more coordinated management and use of our information assets would involve such directions as a campus content management system (CMS), an enterprise document management system, open access to data for reuse by the campus and the larger community, and a consistent approach to digital identity

management. These and other factors would enable access, sharing, creating and remixing – all characteristics of a contemporary information environment.

Setting aside the obvious need to preserve and protect privacy and confidentiality, much information available in the University can be easily and legitimately shared, and shared to considerable advantage. Making information more available and useful to others (e.g. allowing them to not only consume it but reuse it for their own purposes) underscores our commitment to an open, transparent, and informed community.

Perhaps the University needs an “information strategy” as much as it needs an IT strategy.

3. Financial Models

The economics of information and IT continue to change. While information is getting both more expensive and free (i.e. moving in very different trajectories), the technology underpinnings are also shifting dramatically.

New service models are emerging (see IT Integrated Support Model in another section of this document). Enterprise solutions are leveraging scale and common support to reduce costs while cloud and SaaS (Software as a Service) are reducing the financial barriers to service implementations (while also raising key concerns about contracts and oversight).

More of IT is becoming a commodity, and commodity IT can be centrally provided (or enabled through third party). Leveraging the advantages of commodity IT means releasing local control and maximizing enterprise solutions. Facilitating this transformation is as much about financial management and administrative control as it is about the enabling technologies.

Existing models of charge backs, cross subsidization, and distributed resources need to be re-examined in light of new technologies, support costs, and new opportunities. What sort of financial models would drive innovative and cost effectiveness? How would this be determined and assessed? Is the real IT strategy to get out of IT?

4. Collaboration

Collaboration is a strategic direction of the University but it is lacking in many of our online tools and services.

Sharing, collaboration, contribution, and remixing are the core elements of current and evolving technologies. Our students (and increasingly our faculty and staff) are not merely consumers of information but active participants in its creation, use and evolution. They are active not passive learners. From their

perspective, technologies which prevent engagement are assumed to be broken and to be avoided.

Currently many of our tools and services assume a “broadcast” character. Very few of our websites enable comments and there is little encouragement for our community to engage online through participation and collaboration. For example, our @UofG Twitter feed is used as a press release tool not as a way to encourage engagement.

Facilitating informed discourse is a core characteristic of higher learning. We are comfortable with this in the classroom but less so in the broader digital environment. And yet it is this digital space that has emerged as a vital (even preeminent) part of the academic enterprise. Social networking is only one aspect of collaboration. Embracing collaboration means embracing the full capabilities and strengths of all new technologies.

Nurturing and supporting an engaged, interactive, and participatory environment includes systems and services which enable comments and contributions (i.e. the tools) but also includes the active, visible encouragement to contribute (i.e. a culture of collaboration). As with many things, the community will adopt this culture by seeing examples. If the University wants collaboration the actions of individuals and the nature of the services must actively reflect this.

Informed discourse in the 21st century is enabled through digital collaboration and community sharing. Is Guelph a leader in this or part of the old school?

5. Analytics to Support Student Learning

Online systems generate a substantial amount of data on what students do and how they perform. Cognizant of the issues around privacy, confidentiality and informed consent, many universities are using this data to assist in learning support.

For example, tracking the marks of student assignments during the earlier weeks of the semester (if posted on Courselink as many are) will allow automatic and confidential alerts being sent to students about services available to them (e.g. writing support, Learning Commons, Library workshops, academic counselling). Many of these services and interventions can be personalized and sensitive to level (e.g. undergrad/grad, discipline) and location (e.g. Guelph, GH, regional campuses) by accessing role data from the campus directory, Colleague, or other systems.

Mining and correlating the data from Courselink, TRELIS, Colleague and other academic systems will build composite models of the characteristics of academic success and the behaviours that constitute an effective learner.

We have been reluctant to take advantage of the opportunity provided by these analytics. The legitimate concerns can be addressed and should not preclude the development of these highly valuable services. Informed consent, opt-in services, and a clear articulation of institutional requirements can facilitate the effective adoption of analytics as a tool to support and enhance student learning.

6. Integrated IT Support Model

Why do our individual colleges, departments and units continue to do their own IT? Much of IT is now a commodity yet units persist in maintaining IT staff who increasingly are unable to support IT or advance the business innovations that leverage IT.

A better approach is the Integrated IT Support Model (IITSM). IITSM assumes that there are no IT issues, only business issues (where “business” includes the academic and administrative missions of the University). The focus moves to the business opportunities, needs and vision of the university and IT becomes an enabler or catalyst. Increasingly these units need to transform business operations by leveraging IT but they are unable to sustain local IT expertise to lead or support those new directions.

IITSM is a partnership between the business unit and central IT. By leveraging the strengths and cost effectiveness of the centralized provision of services and resources, the business units can focus on change and transformation. This partnership enables an enterprise perspective with respect to IT and business solutions such that desirable outcomes like enterprise level security, shared infrastructure, reduced duplication, and the integration of business processes is achieved.

With an integrated IT support model, the central IT organization assumes responsibility for all business unit support functions requiring IT skills and expertise not procured from outside. The business unit takes leadership in defining its functional needs and priorities and works with vendors (internal and external) on the basic "how to" questions. The central IT organization work with vendors on infrastructure integration issues and more complex technical problems.

IITSM is an effective means to leverage enterprise efficiencies while advancing local priorities. Perhaps the best IT strategy is to get out of IT.

7. Mobility

Very soon mobile devices (e.g. smartphones and tablets) will be the primary tools used to access the Internet and online resources. Currently, the majority of our tools and services assume the use of laptop and desktop computers. Our inability

of offer mobile-aware service will become a competitive disadvantage in recruiting students, faculty and staff.

In terms of enterprise mobile strategies, most universities are at the “bright shiny object” phase where they are rushing to create “apps” and be the first to deploy cool things. This is a PR response not a learning or information strategy. Similarly, each IT vendor wants to create mobile apps that are exclusive to their product and tied to their technology (e.g. Datatel, D2L). This mobility strategy is more about client lock-in than campus value.

Mobility is a consumer driven technology; there are many tools, many devices, and many underlying technologies. Our challenge is to leverage mobility in an enterprise manner while still enabling the consumer choice with respect to devices and software.

This means creating mobile services and resources that respond to the user (not the individual system, service or administrative unit). User experience (UX) analysis is central to an effective mobility strategy and implementation. We should maximize the value of our WiFi (to offset high data costs from commercial wireless vendors) and use open technologies for the creation of services (e.g. HTML5, CSS3, etc.). Partnering with existing companies to create the mobile environments will allow us to focus on strategy and evaluation rather than software development and support. There are many credible companies in this arena, some in Guelph being operated by UG graduates.

Mobility isn't just about a smaller screen; it's about engaging and supporting students in a more intimate and effective manner. Is Guelph ready to re-architect its services to leverage ubiquitous mobility?

8. Media

The tools to create and use a wide variety of media (text, video, image, audio, etc.) have moved from expensive and complex to cheap and widely available. While professional support is still needed for high end production, increasingly individuals are able to create and distribute media themselves.

Our current use of media, in teaching and in administrative services, is modest. Guelph should move to an environment where media creation and use is as commonplace and easy as reading or creating a text document. Establishing this media-rich environment will require access to tools (many of which are freely available) and the provision of expertise (technical, pedagogical, practical).

Technical support is required in the use of the tools and the equipment in order to produce effective products. Innovative use of online training (such as Lynda.com) combined with an excellent opportunity for “Technology Peers” as an extension of Guelph's effective peer helper program could provide the support to assist

individuals in gaining the necessary skills. COLES can provide the pedagogical expertise to assist in effective teaching and learning. Practice expertise refers to the day to day tasks and responsibilities that in the future may be better enabled by creating a video or a podcast rather than creating a text document.

The overall objective should be to make media creation and use as simple, comfortable and effective as created a document or sending an email.

9. Inter-Institutional Collaboration

Academic libraries, through such initiatives as OCUL's Scholars Portal and the national licensing of the Canadian Research Knowledge Network (CRKN), have demonstrated the value of wide scale collaboration. It is possible for a large number of diverse institutions to identify common objectives and sustain collaborative solutions. Why not IT?

The recent creation of the Canadian University Council of CIOs (CUCCIO) has created a forum to explore this direction and the success in establishing the Canadian Access Federation facilitate the national management of digital identities illustrates the benefits to be obtained.

The challenge is to move away from application silos to shared solutions (either resourced collectively or sourced from the cloud). Since many IT applications are managed at the local unit or college level, there are significant challenges in moving these services into a shared environment. The perceptions of competitive advantages or unique local needs are barriers in advancing cost effective shared solutions. However, it is clear from the example of academic libraries that both national and provincial funding is available to support collaboration. It is also clear that tools and services are emerging that can effectively provide the basic commodity IT that comprises the vast majority of our needs.

Is IT and the units it supports ready to derive the benefits of collaboration? Does the organization support a collaborative culture?

10. Canadian Digital Infrastructure

For too long individual universities, and individual researchers, have been creating their own digital infrastructure on a project-by-project basis. While initiatives like CANARIE and Compute Canada have built and sustained common infrastructure (high speed networks and high performance computing respectively), the breadth and depth of digital infrastructure necessary to support 21st century research is far more demanding.

Increasingly research is conducted across institutional divides. Facilitating effective research in such an environment requires a national infrastructure that allows unimpeded access to the appropriate tools, services and resources.

Research data management is a good illustration of the opportunity and the challenge. Data driven research and discovery is dependent on the easy availability of prior research data. Not only do researchers need to manage their data in a manner that facilitates future re-use, but protocols and services need to be established to ensure the proper management and accessibility of that data to other researchers from a variety of disciplines. In a similar manner, the tools and environments for digital humanities research require a melding of local infrastructures linked to national capacities.

As the University moves towards strengthening and diversifying its research enterprise, a cost effective foundation for this initiative is the idea of a Canadian Digital Infrastructure. Establishing such a set of tools, services, resources, and expertise will facilitate research at Guelph and form part of a national strategy to enhance Canadian research capacity.

Individual researchers, the Office of Research, CCS, and the Office of the CIO could position Guelph to be leaders in the formation of such an infrastructure and early adopters in its use.

Comments

Many of the issues outlined here describe how things could, or perhaps should, be and few people may disagree with them.

This then begs the question "what is standing in our way?" The answer(s) to that question probably highlight the challenges to the University: ownership of the issue, available expertise, setting new communication standards, and the need for collaboration or coordination of efforts across units on campus.

How does the University actively support initiatives in these areas? Is collaboration and innovation facilitated by planning, policy, standards, requirements, and/or leadership?

This document is intended to provoke discussion and debate. I want to hear from you.

Comment on my blog: <http://www.uoguelph.ca/cio/>
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