Information Technology (IT) Governance

A Position Paper

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1. Objective

This paper outlines an incremental approach to enhancing information technology (IT) governance at the University of Guelph based on recognized best practices. The specific objectives are to:

- define IT governance and how it operates
- propose an approach to IT governance for the University of Guelph

The ideas presented here will form the basis of a campus wide consultation on IT governance that will result in an accountability framework and an implementation process.

2. What is IT Governance?

At its most fundamental level, IT governance defines **who makes decisions** and **how those decisions are made**.

IT governance is the process by which organizations align IT actions with their goals and objectives. This involves establishing decision rights (who decides what) and an accountability framework (who is responsible for what) for encouraging desirable behaviours and actions in the deployment and use of IT.

The major objectives of IT governance are to:

- enable the strategic and tactical alignment of IT with University priorities and goals
- understand the value and impact of IT investments (dollars, human resources, and capital)
- identify opportunities for improved IT utilization
- support visible and transparent decision making
- establish and sustain effective IT policies
- establish performance measurements
- identify and mitigate risks
- satisfy regulatory and formal compliance requirements
IT governance is typically constructed around an intersecting set of units, groups, committees and individuals who have specific and defined roles with respect to certain kinds of IT decisions or actions. This “federal” model of governance is best suited to a university environment and culture which is characterised by diversity and distributed autonomy. In a federal model, some groups or individuals have formal input into decisions while other groups or individuals have decision making responsibilities and accountability for outcomes.

3. Why is Improving IT Governance Important?

IT is a fundamental component of virtually every aspect of the University mission. Teaching, learning, research, service and administration all rely on IT and use IT intensively. As such, information technology has a major impact on organizational outcomes and represents significant campus investments (staff, funding, space, equipment, etc.). IT is also an key enabler of transformational change; IT changes the way we are able to work and learn.

Simply put, the effective use of IT matters because there is much at stake.

The critical requirement of IT governance has been raised frequently in the past decade and lead, in part, to the creation of the position of the CIO to provide institutional oversight to IT issues. Discussions reinforcing this have already occurred at the President’s Executive Council (PEC), the Information Services Committee (ISC) and the Audit Committee of the Board of Governors. IT governance is a core component of the CIO Integrated Plan and is highlighted in the campus Integrated Plan.

Unlike corporate environments, where IT decisions are typically tightly controlled and centrally managed, the University of Guelph is a highly diverse environment where distributed responsibility and local autonomy must meld with overarching University policy and institutional obligations. The Integrated Plan for the Office of the CIO, the iCampus, recognizes both the need for local autonomy and innovation, and the need for standards and the cost effective provision of common infrastructure. The iCampus credo of “One Community, Many Neighbourhoods” expresses the need to balance these perspectives in a mutually supportive manner. The IT governance model presented here does not impose top down decisions nor does it license local units to make independent IT decisions. Effective IT governance finds the balance and direction that satisfies institutional needs and obligations, and ensures innovation and effectiveness of local units/departments within the University.

Key to understanding this proposal for IT governance at the University of Guelph is the intended scope. The IT decisions managed through the governance process are those that have enterprise application or enterprise implications.
Enterprise IT governance will focus on decisions that involve any or all of the following criteria:

- relate to the common IT infrastructure shared by the University
- require the investment of central University funding
- relate to campus IT policies
- have an impact beyond the local unit making an IT decision
- establish and manage common IT standards, architecture and infrastructure (including allowing exceptions to these standards)

In so far as local IT decisions are made within the established set of standards, architectures and infrastructure, and funded through local resources, there will be no requirement for these decisions to be reviewed and/or approved through an institutional IT governance process. However, the interconnected nature of IT and the need to enable cost effective operations suggest that many decisions have enterprise impacts.

This is particularly evident in IT implications or issues as they relate to security (of resources and information), risk management, business continuity, privacy and IT service management. These policy related impacts are substantial and substantive; they require the application of IT governance to ensure both the identification of the key issues and the mechanisms to manage compliance.

This proposal builds on existing IT governance components (such as the Information Services Committee and the role of the CIO). It endeavours to make the processes more transparent and interconnected such that they are more visible and accessible to members of the University. The proposal also seeks to either clarify the responsibilities of existing groups and create new groups where needed.

4. Five IT Decision Areas

Weill and Ross (MIT Sloan’s Center for Information Systems Research) have proposed a governance matrix mapping to five major decisions related to the management of IT in any organization. This matrix has been widely discussed in the field and has quickly become the de facto standard for IT governance (see their book *IT Governance*. Boston: Harvard Press Business School Press, 2004).

The first step in designing IT governance is to determine who should make, and be held accountable for, each of the following decision areas:

- Principles
- Architecture
- Infrastructure
- Enterprise application needs
- Investment and prioritization
4.1. **IT Principles**: IT principles are a related set of high-level statements about how IT is used in the University. An effective set of IT principles will have a clear relationship to the overall institutional mission and its goals and objectives. Each IT principle is supported by a rationale and implications. IT principles answer the following questions:

- What is the role of IT in the University?
- What are desirable behaviours with respect to IT?
- How will IT be funded?

4.2. **IT Architecture**: IT architecture is an integrated set of technical choices to guide the University in satisfying core needs and requirements. IT architecture addresses the following questions:

- What are the core processes of the University and how are they related?
- What information drives these core processes?
- What technical capabilities need to be standardized enterprise-wide to support IT efficiencies and to facilitate process standardization and integration?
- What technology choices will guide the enterprise’s approach to IT initiatives?

4.3. **IT Infrastructure**: IT infrastructure is centrally coordinated, shared IT services providing the foundation for the University’s IT capability. IT infrastructure addresses the following questions:

- What infrastructure services are most critical to achieving the University’s strategic objectives?
- What infrastructure services should be implemented enterprise-wide and what are the service-level requirements of those services?
- What is the plan for keeping underlying technologies up-to-date?

4.4. **Enterprise Application Needs**: Enterprise applications are the IT systems and services (either purchased or internally developed) used by the University. Enterprise application needs respond the following questions:

- What IT applications with broad University implications are required?
- How can IT needs be addressed within architectural standards?
- When does an enterprise or unit need justify an exception to the standards?

4.5. **IT Investment and Prioritization**: IT investment and prioritization decisions determine where to invest in IT, how much and when. This area also includes overall project approval, justification and monitoring. IT investment and prioritization responds the following questions:

- What process enhancements are strategically most important to the enterprise?
- Is the current IT portfolio consistent with the University’s strategic objectives?
- Do actual investment practices reflect the relative importance of enterprise-wide versus department/unit investments?
5. Five IT Governance Groups

Complementing the IT decision areas are the governance groups who will provide input to decisions and those that will make the decisions. The decision areas and the governance groups combine to form an “accountability framework” that maps who makes decisions about what and how this is accomplished.

Given the wide differences among organizations using IT (e.g. public, private, sector, history, tradition) Weill and Ross identify many “governance archetypes” or governance groups. Some organizations are very hierarchical and their governance reflects a command and control structure. Other organizations, like universities, are far more collegial and hence their structure reflects the “federal” model alluded to earlier. Such a model acknowledges and enables distributed decision making while at the same time defining enterprise wide requirements and obligations.

The second step in designing IT governance is to determine what groups (or individuals) should be involved in making IT decisions. The IT governance groups appropriate to a university setting are:

- University Executive
- IT Leaders
- Federal
- Duopoly
- Other

5.1. University Executive: This group consists of those responsible for the highest level administration of the University and are accountable for the overall performance of the institution. This group includes the President and the senior administration of the University. Their role would be to establish overall principles for how IT will be managed and used, to approve significant IT investments and to ensure compliance with regulatory requirements. This group would work with the Board of Governors in areas appropriate to Board responsibility.

5.2. IT Leaders: This group consists of IT professionals, managers and administrators who have specific responsibility for IT. This would include the CIO, senior administrators in CCS and managers of IT units in departments or units throughout the campus. Their role would be to use their technical and business knowledge to frame technology issues for executive decision making or to establish technical architecture and infrastructure to support the enterprise needs.

5.3. Federal Groups: A “federal” group is typically a committee that brings together many areas across campus to create a governance group responsible for drawing in the needs of the community and articulating an overarching understanding of campus directions. The most notable federal group currently is the Information Services Committee (ISC). ISC has membership drawn from all facets of the University. It has reviewed, endorsed and/or approved enterprise
issues and applications. The value of federal groups in IT governance is to enable diverse voices, provide a forum for the expression of needs and requirements, and as a mechanism to make community recommendations or provide informed input to the decisions of others. Federal groups are key to a collaborative, diverse and mutually supportive IT capacity.

5.4. Duopoly: A duopoly group exists when a local unit (department, college, etc.) forms a partnership with one or more of the IT Leadership groups to make decisions regarding IT within the scope of their responsibilities. Duopolies are formed frequently. The role of duopoly groups is to advance the use of IT in a particular unit in a manner that is consistent with the overarching standards, architecture and infrastructure.

5.5. Other: The “other” category acknowledges that in certain situations IT decisions are made in other ways. The most obvious example would be an individual researcher making decisions about deploying IT in support of a research initiative. While these decisions typically must comply with University standards and architectures, often these are individual actions with little or no oversight.

6. Accountability Framework

By combining the decision areas with the governance groups you can assemble an “accountability framework” or matrix that illustrates what groups are responsible for what kinds of decisions or input.

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Green = decision making responsibility
Turquoise = input to decisions
As can be seen, it is common that multiple groups provide input to a decision while typically one group has the decision making responsibility. Exceptions on this chart include “Enterprise Applications” and “IT Investments.” See below for a discussion of this.

This matrix can be augmented and further detailed by including the governance groups specific to the University of Guelph. The follow matrix positioning existing groups in the matrix and recommends the role of new groups.

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**PEC** = President’s Executive Committee (the senior University executive group). A new subcommittee of PEC would be created to engage in IT principles, large scale enterprise application decisions, and in major IT investments. Regulatory oversight and certain investments would be the responsibility of the Board of Governors (e.g. Audit Committee, Finance Committee).

**CIO+** = CIO, Associate Directors of CCS and representative IT managers from units/departments. This is a new governance group being proposed to focus on IT architecture and technical standards, and to enable the common IT infrastructure.

**ISC** = Information Services Committee.

**VPAC** = Vice President Academic Council.

**SCUP** = Senate Committee on University Planning.
ITSIG = IT Special Interest Group. IT managers and staff from all areas of the University. This is currently an “interest” group as opposed to a formally mandated committee.

Unit = individual department, college or unit.

Because this proposal builds on many existing IT governance components, the next steps required to implement this proposal would focus on clarifying processes and accountabilities, and building some new capacities. In particular, it will be necessary to define and/or re-assert the roles of ISC, SCUP, VPAC and ITSIG.

Depending on the scope, the chart indicates that the IT decision could be made by different groups. For example, under “Enterprise Applications” decision rights are indicated for the University Executive, Units (participating in a federal group e.g. ISC) and Units working with IT Leaders (a duopoly). The positioning of the decision rights to one of these groups will be dependent on the scope of the enterprise implications. The greater the implications (e.g. funding, impact, architecture requirements, infrastructure needs, etc.) the more the decision will be made with greater community involvement or at senior levels within the University.

7. IT Portfolio Management

The IT governance framework articulated here includes the responsibility to understand the value and impact IT decisions. This accountability requires that IT decisions are identified and communicated, that their progress is tracked, and that their impact is assessed. The CIO will establish a Portfolio Management capacity to provide oversight information to those involved in IT governance and to the University community as a whole.

Portfolio management provides a snapshot of the IT environment (systems, components, resources, information flows) in an attempt to assess complex inter-relationships and manage those as the campus (and technology) evolves.

Enabling and balancing both local and central autonomy requires a mechanism to capture and track the “big picture” regarding the existing IT environment and current projects that extend or augment that capacity. Portfolio management is not a campus project management office but rather means to make visible the issues and decisions arising through the IT governance process.
8. Next Steps

This proposal has been presented to and endorsed by President’s Executive Council (PEC) and the Information Services Committee (ISC). Over the course of the Fall 2006 semester a small team will engage key groups and committees about this proposal. Meetings have (or will be) established with the following groups:

- Vice President Academic Council (VPAC)
- Vice President Administration Team (VPAT)
- ITSIG (IT Special Interest Group)
- ITSAC (IT Student Advisory Committee)
- Other Groups, Units, Departments who express interest in being included

The results of this process will be brought back to ISC for review and forwarded to PEC for consideration and approval. The engagement team will consist of:

- Michael Ridley, Chief Information Officer
- Vicki Hodgkinson, University Secretary (representative of the President’s Executive Council)
- Peter Conlon, Assistant Dean, Student Affairs, OVC (representative of the Information Services Committee)
- Dave Wilson, Manager of Information Systems, Office of Open Learning (representative of the Information Services Committee)

Comments on this proposal or requests to meet with the engagement team should be forwarded to:

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