

Computing and Communications Services Integrated Plan: 2006-2010



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Context: the *iCampus* Vision

As an active partner in realizing the *iCampus* vision, Computing and Communications Services fulfills an important and unique role on campus in the provision of infrastructure, information systems, and staffing expertise which align with the University's learning and research missions. The **Computing and Communications Integrated Plan: 2006-2010** articulates the key priorities which will guide CCS in fulfilling these roles over the next five years.


During this process CCS will be guided by the following visions:


1. We will be responsive and adaptive to the ever-changing and new requirements of our clients.
2. We will provide exceptional reliability of the application systems and databases we support by adopting a standardized cost-effective and robust infrastructure.
3. We will ensure reliability and stability of the infrastructure, application systems and services we support by embracing best practices associated with all of our service processes, including change, configuration and project management, clear segregation of the test/development and production environments, and cost-effectively building redundancy into our infrastructure

In addition, CCS will be guided by the following over-arching goals:

1. Accountability:
 - Measurable performance assessments
2. Efficiency:
 - Standardization, consolidation
3. Alignment with institutional and customer priorities and expectations
4. Agility
 - Responsive to new requirements and opportunities
5. Performance
 - Process excellence, continuous improvement

Note: Although there is no attempt to rank any of the projects two types of projects are highlighted using the following criteria:

 - those projects that are emerging ideas but there is no consensus on when the timing will be right to move forward. They may be multi phased projects that need more research.

 - those projects that are essential for maintaining existing services or foundations for other initiatives. These projects are usually well defined in terms of costs and benefits

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STRATEGIC PRIORITY 1

Enrich the User's Experience

The complexity of the University environment and the challenges of accessing and managing the plethora of information and technologies for learning, teaching and research are daunting tasks for both new and experienced faculty, students and staff. This complexity can be managed through well designed and integrated systems and tools which empower the user and promote self-reliance. System tools and personal options must emphasize "task accomplishment" and take the perspective of the user rather than the organizational unit or information provider. This suggests an information system architecture and navigational design that is deliberate, managed, and responsive to user needs.

CCS will be integral in equipping the Scholar's Toolbox that is both general purpose and customized to the individuals, with an emphasis on enabling collaboration.

In addition CCS will manage customer relationships by providing high quality, proactive support services that are accessible in many modalities. These services will focus on client needs, immediate assistance, follow-up advice and the encouragement of self-reliance through automated help services and enhanced training.

KEY AREA

ACTIONS AND BENEFITS



The scholar's toolbox

Creation of a set of **Integrated Collaboration Tools** that are easy to use, accessible and reliable. The objectives are to open up new opportunities and enhance existing collaborations, using a set of tools that have seamless integration. Over the next 5 years there will be a maturation in the market place that will open many opportunities in the following areas.


- A redesign and deployment of the **central email service** utilizing well supported, standards based solution. The objective is to roll-out a solution with significant decrease in operational support effort and an increase in service availability, functionality and customer satisfaction. This deployment is expected to have a 2 to 4 year life span while the requirements of messaging as a campus service are evaluated and long term direction is determined.
- A project to implement and support a limited production deployment of a **Unified messaging** environment based on Microsoft exchange. Year one this service will be rolled out to up to 300 clients, increasing up to 1000 clients in year 2. The objective of the project is to provide insight into the demand and value of running a common messaging infrastructure for both voice and email (support, maintenance, service continuity and customer satisfaction.)

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-  Undertake an evaluation of the ability of the University's **Calendaring** environment to meet the following requirements: expand coverage to graduate and undergraduate student access, enable resource management, and integration with the portal and services within the portal, such as WebCT. The objective is to decrease complexity for the end-user and open more opportunities for collaboration. This evaluation would be followed by recommendation and implementation of a system meeting the above requirements.
-  Develop infrastructure to support the use of **new forms of collaboration**. This may include such things as Blogs and Wikis. At this point it is difficult to predict what these tools may be.

Enable efficient and effective procurement of the software. This will be an extension of the current site licensing process and involve more centralized funding. The objective is to decrease overall costs for the University and level the playing field, by keeping software current across campus and subsequently decreasing our support costs and eliminating constraints to deploying new services.

-  Move the cost of purchasing MS Office into the campus IT infrastructure model before the next release of this software. This will involve moving from MS Academic to a **MS Campus Site License**.
- Facilitate the movement of desktop OS license costs to the campus IT infrastructure model. It is particularly beneficial to have standardization on desktop OS's when rolling out new campus initiatives.
- Negotiate new site license agreements and **move the costs of core pieces of the Scholars Toolbox to the campus IT infrastructure model**. Eliminate user fees where possible and move towards a model of concurrent licenses when possible. The objective is to get the necessary tools in the hands of the users, as required, in an efficient and cost effective manner.
- Focus on negotiating **software licensing programs that includes graduate and undergraduate students**. This is an opportunity for the university to be proactive in promoting the legal use of software.

Following successful programs at other university's move to a centralized model for desktop hardware procurement, by centrally funding a **desktop renewal program**. Although not all departments will participate in this program it is expected that a significant number that have homogenous requirements will benefit. These benefits include freeing up individual groups from making decisions that can be difficult for them, providing consistency across and within departments, decreasing the university's support costs and obtaining economies by negotiating group purchases.

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Managing Customer Relationships involves a rethinking and re-architecting of how to deal with our clients. An overriding theme is to integrate CCS help services in order to create an accessible and responsive environment where customer service is the primary goal

- Simplify support through an **Integrated Help Services unit** which includes current, help centre, IT help desk, ResNet, MACdesk and workshop functions.
- Improve efficiency by organizing server hosting, test scoring, and security, system, network monitoring for the campus functions into a **Data Centre Operation Unit**;
- **Introduce Desktop Management** for those departments where there is a need. Many units and departments are finding it is difficult, costly and not sustainable to do their own desktop management. The objective is to streamline and enhance services to the end-user, while not losing any quality of service relative to the current support model. See also Scholar's toolbox
- **A web-based help desk and support automation system** that will incorporate knowledgebase resources and better access for clients and support staff. This solution will also reduce number of information systems currently used by the help centre and enable individuals to be more self-reliant.
- **Enhance the existing automated call centre environment** by expanding its use by other departments on campus requiring call queuing and skills based routing of calls. Providing this service centrally is more efficient than duplicating this in small pockets across campus. It is expected that the use of automated call centre will grow substantially across campus over the next three to five years.
- **Create a client managed telephone environment** that will focus on enabling the client to perform routine modifications to their own telephony environment as well as make queries on their individual and departmental accounts. Phase 1 will focus on development or acquisition of self-administration applications for the Web/portal. Phase 2 will involve the acquisition and installation of an integrated telephony billing and asset management system..
- **Restructuring and refreshing of existing training programs** to focus on more applied training that is targeted directly to our user community.
- **Expansion of the training offerings targeted at the departmental IT support staff.** This would be accomplished primarily by facilitation of professional IT training services from external providers, building on the success of courses last year. This is a more cost-effective way of training staff and ensures a continuous and efficient renewal of our human capital. This would be augmented with some specialized in-house developed courses by University staff.
- **A comprehensive system monitoring solution for the campus IP telephony system** to monitor, alert and report on all aspects of the telephony system. This solution will reduce the operational effort required to monitor and maintain the service, improving service reliability and uptime.

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STRATEGIC PRIORITY 2

Create and Sustain an Agile Information Space: IT Infrastructure

iCampus services and resources will be “always on, anytime, anywhere, just for you”. The underlying infrastructure will enable services and resources that have maximum availability and are accessible through a wide variety of devices (desktops, laptops, tablets, PDAs, cell and smart phones). The infrastructure will support personal information environments and remain connected to the rich resources of the enterprise and the larger global Internet. Mobility, personalization, and ubiquity will characterize the services offered through this architecture and infrastructure

Realizing this agile environment will require clear policies, standards and accountabilities to ensure leading edge capacities as well as secure and sustainable environments. This is reflected in an enterprise view of information architecture and infrastructure that is responsive to both central and distributed systems in a manner that enhances value, maintains local advantage and ensures cost effectiveness.

KEY AREA

Information Management is a structured approach to the managed storage of digital material. The goal is to create an enterprise information management model that is scalable as campus needs increase and new services begin to participate in this model. Through this model local resources are freed up and central infrastructure is funded in a more efficient and cost effective way. The resultant infrastructure will offer individuals a more robust and secure environment, more inline with their demands.

ACTIONS AND BENEFITS

- Investigate and implement the creation of a **centrally managed institutional storage resource** that is cost effective for all parties and provides capacity as needed. This is analogous to a bottomless cup of coffee. The objective is to create centralized storage as a common commodity that can be searched and accessed from any application. Policies will need to be developed to create life cycle management of our information and take advantage of the efficiencies associated with tiered storage. This storage will be used for such things as learning objects, scholarly works, research data, enterprise documents, server and end-user space including mail, Central File Store (CFS). It will lay down the infrastructure to enable other initiatives in CCS.
- Investigate and implement an enhanced **institutional backup system** that is closely linked to the storage strategy. This is designed to ensure against the accidental loss of information and may include off-site storage of certain information. This needs to come in line immediately with new storage, but can be scaled over time.

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Identity Integration: To lead the University in the adoption of an Identity Integration solution that delivers one common identity for individuals across campus. It is essential for the effective delivery of services and ensuring the University meets its obligations around the protection of privacy. Policies for access to services are implemented within the departments and are not uniform across the organization. Identity Management is a multi-faceted approach to maintaining accurate, consolidated personal information for an enterprise's constituents, the provisioning and delivery of appropriate services to those individuals and providing secure, controlled access to appropriate portions of that information.

Collaborative Tools

Infrastructure: creating an enterprise architecture that supports various collaborative tools efficiently. The benefits are outlined under Strategy 1 – The Scholar's Toolbox.

- **Upgrading to a fully supported LDAP directory** that provides enterprise class management tools and features needed for an Identity Management solution. This directory must integrate with solutions in the accompanying projects and lays the groundwork for the subsequent initiatives.
- **Develop an access management framework** by which web based applications will begin to gain controlled, secure access to personal information that will allow for improved authentication, authorization, single sign-on and enabling of federated identities. It will lay the ground work for the University to begin participating in federations. This solution must integrate seamlessly with the accompanying projects.
- **The introduction of an identity management repository** that facilitates amalgamation of personal identities and seamlessly provides synchronization with enterprise directory services. It will facilitate the provisioning and de-provisioning of a myriad of IT services that currently reside in many University departments. The success of this solution is dependent on the co-operative efforts between CCS, ORS, HR and any departments that depend on personal information for individuals. It is expected that this effort will transpire over several years. The solution must integrate seamlessly with the accompanying projects
- **Expand the Central File Store (CFS) service** to the entire campus and enhance the disk allocation so it is no longer the constraint. The CFS will access storage that is available anywhere, anytime and will be consistent with our plan to consolidate storage between applications. The user will no longer need to worry where they are or what they are doing – access to their information and shared information will be seamless.
- **Expand the Campus Wireless Infrastructure** in a staged manner consistent with the needs of the community. This expansion will open opportunities for graduate and undergraduate student access to IT services in new areas of the campus.
- A **mobile device service** for the university's mobile individuals with a requirement to stay connected to their desktop environment. CCS will provide the central infrastructure support, training and ongoing assistance to the local IT support staff that are engaged in the front line support of mobile users.

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- A **campus extension presence** (single-number reach) to **mobile users via cellular phone services**. The goal in phase 1 will be to demonstrate the concept and refine the service with a target group of mobile users, then expand to a production service in phase 2.
- A **softphone** capability to members of the University community who would benefit from the functionality offered by desktop or laptop computer software phones. Phase 1 will demonstrate the technology in a home office environment. Phase 2 will expand the service offering to include mobile devices such as PDA's. The softphone initiative is dependent upon the successful completion of the VPN/secured remote access project.

Enhance IT and Campus

Security: Improve the security of our business assets while providing free and unrestricted access to meet the academic and research needs

- **Introduce firewall protection locally to the administrative units** of the University to control network traffic flows and protect workstation assets at the departmental level. Improve the level of firewall protection at the campus edge including the Orion and Internet links.
- **Network Hardening** through a multi year upgrade of network equipment designed to improve the resilience of the network from disruptive network activity (such as, DHCP snooping, dynamic arp inspection, man in the middle attacks).
- **Introduce a site licence for anti theft software to be used on laptops.** This has the benefit of encouraging students to bring their laptops on campus, decreasing our infrastructure costs around desktops. This works in parallel with other initiatives like the virtual lab and has similar benefits.

Network Admission Control:

- Through a multi-year project introduce to the campus the requirement for **user authentication and enforcement of desktop policies** for system patching and virus protection before access to the on-campus network is granted.
- **Expand the current Virtual private network(VPN)** service to all faculty and staff, who need to have secure access to university assets, no matter where they are. Enforce the use of VPN for all access to secure business applications.
- **Decommissioning of the dial-up modem pool** will involve the shutting down of both the free access and pay modem services. Included in the pay service is the Alumni dial-up

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access. It is no longer viable for the University to compete in this area, as there are many private providers doing this more effectively.

- **Intrusion Detection:** Introduce network based intrusion detection devices which will monitor traffic into the CCS data centre networks. In response to known malicious traffic events the intrusion detection system will generate alerts into the network monitoring systems of the Operations Data Centre.
- **Enhanced 911 Service:** In partnership with Security Services deploy an emergency responder system on campus. The system will coordinate phone location, physical network port location with street address information populated in Bell Canada E911 database.

Web Services is one of the fastest growing areas of IT and there is a need to enhance the infrastructure that supports the community and empower content providers to publish information on the web

- Enhance the availability of **database services** in the web environment to include such things as Oracle, MSsql and Mysql. There may be a need for DBA support.
- Enhance the service to enable the inclusion of **rich media and streaming**. This is currently being pushed by various research projects and would include significant disk space. This is an opportunity to participate in grant proposals and secure research dollars to fund storage.
- **In response to the needs of the community develop capacity in the development environment** through more functionality. There needs to be a balance between the benefits of multiple development environments and costs to support them.
- Assist in the development of an infrastructure and standards that **enable the University to meet accessibility** requirements.
- **Enhance the search capacity** of the University's web presence.
- **Develop infrastructure to support some form of content management.** Initially this could be an expansion of the WPS which makes it very simple for content owners to publish information on the web.

Portal

- Continue the establishment of a secure, robust and scaleable infrastructure to enable stakeholders to deploy web applications within the portal
- Sustain this infrastructure through the addition of permanent staff.

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- Provides access to a **pool of developers, designers and analysts that could assist stakeholders** in the deployment of web applications within the portal. This could also be sourced outside of the university by having a set of standards to assist in creating a list of recommended programmers, similar to what Physical Resources does for trades. It would also assist in promoting consistency in the portal environment and provides associated savings in support.

Technology Efficiencies and Renewals and the model for Strategic Infrastructure suggests more cost-effective systems administration, (including monitoring, access control and security) and improved data integration. One solution would be to, wherever possible, migrate to a new standardized infrastructure. The essential strategic goal is to reduce operating costs while increasing reliability.

The following are some of the objectives to be achieved with a strategic infrastructure:

- application services fully internet (web)-enabled
- application services available 24x7
- migration to applications and databases running on common and cost effective operating system.
- migration of production applications hosted on redundant server “clusters” based on low-cost commodity (Intel, AMD) servers.

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- Establish a program within CCS for **server renewal** based on a 4 or 5 year turnover. This should help with consistency across services and protect the university’s core infrastructure. If this model is successful, extending it to servers outside of CCS should be considered.
 - **Maximize the integration** of operational systems in University Systems through a standardized dbms platform (ie. Oracle). There are compelling advantages to migrating the Cyborg Payroll/Personnel database and the Colleague database to Oracle, including increased expertise for technical support, improved data interchange, and reduced risk of data loss.
 - **Begin to consolidate hardware**, by running **virtual servers** on one large host. There are many opportunities for decreasing our hardware requirements and using resources more efficiently.
 - **Pilot thin clients** by establishing Kiosks and/or testing them in labs/library. Thin clients are inexpensive hardware solutions, where the processing is done by a central server. The potential here is to significantly decrease support costs as well as hardware costs. This would open opportunities for access into new areas on campus
 - Explore the development of **virtual lab services**. It is difficult and costly to support all of the specialized IT labs on campus. The argument for these facilities is the unique

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software requirements in different departments. Many times these labs are under funded and under serviced as well as using up valuable space. By running a virtual lab specialized services can be delivered to desktops anywhere on campus. It will also be delivered to individuals laptops and this is especially important for students and greatly enhances the experiences of the mobile user. In addition this can free up lab space to be used as adaptable learning spaces.

- **Bring core IT infrastructure at the regional campus up to main campus standards** by establishing a centrally managed wide-area network connecting the Guelph campus and the regional campuses and a support model for the regional campus networks.
- **Network technology renewal:** It is expected that beginning in 2007 there will be an increasing demand to offer gigabit connectivity to the desktop, primarily in academic and research environments. From a capacity perspective, it is expected that by 2011 40% of the existing non RESNET network ports will need to be upgraded to 1 gigabit speeds.
- Evaluate and invest in **additional automation tools** to improve system availability and performance, off-hours monitoring, access control, change and configuration management and secure data interchange.
- A multi-phased project to **upgrade the telephony application servers** in order to deliver additional functionality and security as well as for continued vendor support. Over the next 3 to 5 years it is expected that two major upgrades will occur, each requiring a number of hardware replacements to maintain compatibility as well as address vendor support and end-of-life status. Target features include native support for standards based (SIP) endpoints and new device support such as video-enabled phones.

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STRATEGIC PRIORITY 3

Building Information Collections: Digital Imperative and Responsible Stewardship

Access to scholarly collections for research and learning remain priorities for CCS and are central to the *iCampus* vision. Within this mandate an increased emphasis will be placed on digital resources in a wide variety of formats and media.

CCS will participate in these initiatives by providing the necessary infrastructure with sufficient capacity and the flexibility to allow for easy access by the end users.

Managing these collections, digital objects and data sets will require strategies and procedures to ensure access, data integrity, migration and preservation. The protection and stewardship of the University's information collections are critical.

KEY AREA

ACTIONS AND BENEFITS

Information Management:
see Strategic Priority 2.

- **Digital Archiving** is closely linked to the storage project and will allow for the long term storage and preservation of information that is infrequently used. CCS's role is to provide adequate infrastructure to accommodate this, building on the storage solution noted above.
- Participation with Resource Planning & Analysis in developing the first phase of ***iPlan* (Enterprise Data Warehouse)**.
- Support the development of ***iPlan* Phase Two (campus access)**. This initiative will include identification and selection of appropriate Decision Support/Executive Information System (EIS) software and a secure environment for production deployment. This will allow the community controlled, yet simple access, to a variety of information for planning and reporting purposes.
- Leverage the just initiated Phase One *iPlan* Enterprise Data Warehouse project (and anticipated Phase Two project), to **review and update the University's standard "BI" (Business Intelligence)** and ad hoc reporting/query/analysis software toolset (currently Cognos). This project will include renewal and/or acquisition of enterprise licensing for the selected products

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STRATEGIC PRIORITY 4

Building Collaborative Relationships

CCS will establish, reinforce and sustain partnerships with key stakeholders (Researchers, Colleges and academic departments, the Office of Open Learning, Teaching Support Services and others) to contribute to the creation of learner-centered environments which are enriched with high quality information resources, services and technologies and makes effective and efficient use of campus resources. This will also create a rich research environment that leverages resources in order to open opportunities and decrease barriers.

In addition collaboration with other IT departments at a provincial, national, or international level will be encouraged in order to create an environment in which all of the partners achieve more than they could alone. CCS will rely on these partnerships, to allow for the sharing of expertise and the maximizing of economic efficiencies

KEY AREA

ACTIONS AND BENEFITS

Partnering with Colleges and Departments

- **Sharing our expertise to help decision makers.** This is an opportunity to bring other campus IT initiatives more inline with central directions.
- **Enhancing our relationship with departmental support staff** and making the user support services seamless
- Create a cost recovery centre that provides access to a **pool of developers, designers and systems analysts.** These could be in the areas of web or application development. This could also be sourced outside of the university by having a set of standards to assist in creating a list of recommended developers, similar to what Physical resources does for trades. There is a demand for this and it frees up individuals from making difficult decisions they may not be well suited for. It would also assist in promoting consistency with centralized environment and provides associated savings in support. There is the possibility of Project Planning in this office.

Partnering in the Learning Environment: In partnership with other groups on campus (eg.. TSS, OOL, Library) build the infrastructure to support new and emerging technologies that operate as a collective, rather than in silos.

- Participate in the review of our **e-learning strategy** and the subsequent development of the necessary infrastructure
- In the area of **Learning spaces** establish a multi-year project to deploy a wireless network solution that will provide ubiquitous coverage across the campus. The project will investigate the potential of vendor partnerships before committing to a 'build our own' solution.
- Continue in the successful **Learning Commons partnership**

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Enhance the student experience in ways that are consistent with such things as the recently released White Paper on Undergraduate Education.

including the expansion of services in support of graduate students and enhancing numeracy and literacy in the area of IT. This is closely linked to our initiatives in managing customer relationships and will directly relate to initiatives outlined in the white paper on undergraduate education.

- **Continue piloting video conferencing solutions** and offer individuals and groups guidance in provisioning their own.
- **Provide support for multi media endpoints** such as multimedia conference units, and soft phones within the current telephone system through the use of gateways or proxy services. As the demand for multimedia endpoints grow, there is an inherent requirement to communicate with the existing telephony environment with standards based multi media protocols (SIP, H323, etc).
- **Build a central service that manages video conferences on campus** - this includes implementing a campus video bridge. The cost and complexity of the solution will be influenced by the decision to support legacy ISDN connections as well as IP connections.
- **Build a bookable facility for video conferencing.** If possible this should be a free service to remove barriers and enable more use, especially by groups such as Graduate students.
- **Create a set of tools to enable the development of streaming video.** This would include piloting desktop application and offering advice and training as well as developing the back end infrastructure to store and deliver these services

Continue our successful partnership with the library in the **Data Resource Centre (DRC)**. Areas of focus include:



- Partnering in provincial and national initiatives in creating and sharing metadata.
- Improving training in the area of Geographic Information Systems (GIS) and enhancing tools for the discovery and dissemination of geospatial information.
- Merge statistical computing with the DRC to improve the user experience and use specialized staff more effectively.
- Design and participate in new programs designed to increase numeracy through workshops and partnering directly with faculty
- Create a cost recovery centre that provides access to a **pool of designers, developers and systems analysts for researchers**. This could be sourced external to the university by having standards to assist in creating a list of recommended developers, similar to what Physical resources does for trades. There is a demand for this and it frees up individuals from making difficult

Partnering in the Research Environment to develop a flexible and sustainable environment that creates opportunities rather than constraints.

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decisions they may not be well suited for. It would also assist in promoting consistency with centralized environment and provides associated savings in support. There is the possibility of a Project Planning in this office.

-  The current **data centre facilities** have been designed to accommodate CCS projected growth to the end of 2007. There is increasing interest from the IT community of the university for properly managed data centre facilities similar to what is currently provided. This is particularly true in the research community. CCS is a logical candidate to be the provider of these services. Another motivator for expanded data centre service is CCS's own desire for an increased level of redundancy for supported IT services and the need to ensure some level of business continuity in the case of a campus based calamity. This project will investigate the potential to acquire additional data centre facilities away from the Campus by partnering with other Universities or contracting with a vendor and how that extra capacity can be leverage to accomplish the issues of growth, business continuity and service redundancy.
-  Reacting to changes in the nature of research and building new infrastructure and expertise to accommodate the predicted growth in such things as **Grid Computing**. This is especially significant for new staff and graduate students.

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STRATEGIC ENABLER A

Develop our People

CCS staff develop, and reliably deliver, critical core IT services for the campus. They also provide leadership and expertise to the campus in all areas of IT.

In order to respond to the changing needs of the campus community and to be able to adopt new technologies CCS is committed to continuous staff training and development.

CCS will continue to align our skills and human resources with institutional strategic priorities through an agile organization with the staff capacity to provide innovative and responsive services in collaboration with our campus partners.

Fostering leadership and management capacity and succession planning are key investments in the future.

KEY AREA

ACTIONS AND BENEFITS

Enhancing and developing our Staff Resources

- Enhance **staff development programs** in specialized technology expertise, analytical skills, leadership skills, and managerial skills to improve the effectiveness of CCS staff resources
- Develop deliberate **succession programs** (e.g. role sharing, mentoring) to retain valuable knowledge and experience assets that would be lost through retirement of our aging staff.
- Develop a **continuing education program** to ensure staff knowledge and experience evolves with rapidly changing technology and new IT applications.
- Utilize industry **consultants and advisory services** to rapidly build knowledge in the CCS team.
- Investigate other opportunities, such as **departmental IT staff, contracts and outside consultants** as an alternative staffing resource for campus strategic initiatives.
- **Expand our ability to recruit** new and quality staff.

Supporting Collaboration

- Develop **broader knowledge and expertise** within CCS to interact with our partners, such as
 - Learning Technologies
 - Research Cyberinfrastructure
 - Business Analysis
- Improve our **ability to manage projects with partners** by developing best practices in Project Management.

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STRATEGIC ENABLER B

Fostering a Culture of Assessment

The interconnected and interdependent nature of the iCampus requires the broad application of assessment tools to recognize areas of weakness, strength and changing requirements. Assessment is critical to ensuring that resources are effectively used and services are meeting the needs of the campus community.

CCS will implement an evaluation and assessment program to inform service development, planning and budgeting.

Statistical reporting of service metrics requires a deliberate program of automated data collection and analysis.

KEY AREA

ACTIONS AND BENEFITS

Continuous Improvement Culture

- Adopt a “continuous improvement” culture within CCS including **performance and process assessments**, and benchmarking against recognized best practices.

Evaluation and Assessment

- Integrate **automated reporting tools** into major services to measure service utilization.
- Develop continuous survey tools in key services to **monitor user experience**. Help Centre reporting will monitor quality of services as well as technology competency of user community.
- Develop a **user survey** process in conjunction with other partners to assess the effectiveness and alignment of IT services.
- Create the role of **Evaluation and Assessment Analyst** to coordinate the assessment program and provide assessment input to future planning.
- **Initiate peer comparisons** through groups such as ACSD and OUCC. Encourage participation in EDUCAUSE Core Data by our peers and use these results as our benchmarks.

Project Management

- Develop best practices in **Project Management** to ensure new and improved services meet requirements and are delivered on time and within budget.
- Implement a “Balanced Scorecard” planning approach to ensure **alignment with strategic priorities**, and a “future orientation” with a focus on increasing our ability to change and improve.

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STRATEGIC ENABLER C

Space Requirements

KEY AREA

ACTIONS AND BENEFITS

- In order to manage customer relationships effectively the proposed **integrated Help Services unit** needs to be in a central and accessible location with high public contact that provides contiguous space for staff. This should be near the academic and geographical centre of the campus.
- The proposed **new Data Centre**, designed to accommodate increases in research computing and provide increased resiliency and redundancy, will require specialized facilities that will need to be built on campus, leased and/or shared with other institutions
- Development of **video conferencing facilities**, to be shared across campus, will require additional space in the form of a small sized classroom.
- The deployment of a **desktop renewal program** will need centralized facilities for the deployment and maintenance of the hardware. The size of this space will dependent on the breadth of the program and is expected to grow over time.
- **Consolidating the locations of CCS** staff will facilitate increased synergies. This has the potential of streamlining support and enhancing the sharing of knowledge.