VISION 2020

Technology Strategic Directions
Supporting McMaster's Academic, Research & Administrative Mission

Chief Information Officer – May 2010

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Introduction

- Demands for technology solutions continue to increase, with no signs of slowing
- A renewed focus on how technology can assist the academic and research mission is needed
- Solid technology foundations to support future growth in a sustainable manner is the goal
- Hence, Strategic Directions…

Background

- In 2008, $1.8m required to keep 30+ year old systems running
- McMaster is the last of the G13 without an ERP type system for Student, Finance, and Research Accounting
- No central repository exists for institutional data and reporting
- Lack of web strategy effects our public face (www.mcmaster.ca) and results in inefficiencies (limited self-service options)
- Minimal attention to evolving / emerging technologies
- Legacy skills not keeping pace with changing technologies
- Lack of strategic focus regarding technology investment and decision-making

The Roadmap

- Current Practice:
  - Legacy systems lacking integration
  - Silo approach to decision-making
  - Data distributed and dispersed
  - Limited ability to provide or recovery critical services in times of uncertainty
  - Proliferation of standalone solutions
  - Islands of technology
- Future State:
  - Fully integrated, supported, best practice solutions
  - Formalized, representative approach to decision-making
  - Central repository of core institutional data incorporating data integrity, security and stewardship
  - Collaborative approach to requirements and solutions development
  - Institutional standards

Strategic Directions

- Five essential areas where attention should be directed to achieve the greatest results:

  - SD1: Systems Renewal and Data Integration
  - SD2: Renewed Focus on Service Delivery
  - SD3: Modern and Simplified Infrastructure
  - SD4: A Hybrid Model Supporting Cooperation
  - SD5: Technology Risk Mitigation Practices

Goal #1: To unify people, process and technology through coordinated systems renewal and data integration

- Any university-wide solution implemented must be in the best interests of McMaster University as a whole;
- Systems selection should focus on solutions that provide the ability to get timely and ready access to data, especially for strategic planning, analysis, and decision making;
- Selection criteria should provide for improved services for students, faculty, staff, and administrators;
- Systems renewal projects will be a catalyst for evaluating the way we work and the impact of the work we do;
- Process of selection and implementation will be inclusive.
- Greater availability, accuracy and timeliness of information through standardized processes;
- Greater reliability and ease of use through the ability to adopt systems to manage work flow on campus and eliminate paper-based manual forms;
- Consolidation of core institutional data into a single repository for integrity, security, and greater ease of reporting;
- Reduced operational risk through adopting standardized processes and best practices;
- Reduced cost through quicker deployment of new applications and elimination of redundant and legacy systems.

SD1: Systems Renewal & Data Integration

- Five priorities to support systems renewal and data integration:
  - SD1.1: Enterprise-Wide Solutions
    - » Establishes a foundation for future solutions
  - SD1.2: Business Intelligence and Data Warehousing
    - » Every Faculty & department requires the ability to collect, analyze, review and disseminate information
  - SD1.3: e-Strategy
    - » Address our “public image” and internal needs
  - SD1.4: Unified Communications & Collaboration tools
    - » Unite multiple services over multiple devices/platforms
  - SD1.5: Campus-Wide Licensing Agreements
    - » Facilitates sharing, distribution, and acquisition at lower cost

Goal #2: Achieve a service delivery and support model that is flexible, agile, and meets user expectations

- Rationalize service offerings and responsibilities for central UTS and other units, making it simpler for users to acquire services;
- Avoid duplication of competency centres for highly complex skills that are expensive to develop and maintain;
- Achieve greater levels of technology standardization;
- Employ enhanced communication processes.

- Rationalization of service offerings creates the ability to identify trailing-edge services to be discontinued in favor of strategic services;
- Standardization facilitates the roll out of new applications faster, with fewer resources, and ensures greater interoperability between solutions;
- Enhanced communication facilitates the addition of value-added benefits to the institution.

SD2: Renewed Focus on Service Delivery

- Three priorities to support a renewed focus on service delivery:
  - SD2.1: Clarification of Roles & Responsibilities
    - » Will remove overlap between UTS & other units permitting each to focus on services at which they can succeed
  - SD2.2: Define and Promote Standards
    - » Standards promoting interoperability should be applied to data architecture, applications, and infrastructure
  - SD2.3: Enhanced Communications
    - » Both inform and solicit feedback

Goal #3: Infrastructure simplification is about finding ways to eliminate complexity that inhibit the free flow of information

- Provide greater application availability, especially during peak demand;
- Lower overall total cost of ownership;
- Optimize system performance to provide improvements in user satisfaction and productivity.

- Virtualization aids in the consolidation of resources and simplification of management to help reduce cost and complexity;
- Improved productivity by enabling administrators to manage technology devices from a single user interface at a central location;
- Reduced total cost of ownership and increased resource utilization by consolidating multiple devices into a virtualized “single reservoir” of technology;
- Reduced number of vendors necessary to conduct effective IT operations simplifies both IT infrastructure and the procurement process.

SD3: Modern and Simplified Infrastructure

- Three priorities supporting a modernization and simplification of infrastructure:
  - SD3.1: Virtualization
    - » Involves a shift in thinking from physical to logical
  - SD3.2: Consolidation
    - » Reducing the number of points of management, physical devices, locations where data resides
  - SD3.3: Automation
    - » Concentrate on tasks involving a significant number of complex and time consuming steps; utilize workflows to produce increased reliability and productivity

Goal #4: A shared governance approach facilitating consistent IT decision making in the University's best interest

- Promote recognition that the strategic value of IT is not simply about technology itself, but is about the ability of a campus to achieve its goals and objectives *through* technology;
- Facilitate avenues for the frequent interaction of key stakeholders across campus to build mutual relationships based on trust;
- Encourage a shared vision between UTS and the University's academic and business units for an institution-wide view towards improving processes and the need to implement the most effective solutions for the University;
- Implement a hybrid approach to technology decision making with the purpose of achieving a higher level of coordination in which areas providing IT functions that overlap can be defined and governed more collaboratively, efficiently and effectively.
- A hybrid approach to technology decision making will allow flexibility in the research, academic, administrative, staff and student segments of the University community while maintaining consistency in the core UTS services common across all groups;
- Central decision making for core services enables the realization of economies of scale and integration;
- Decentralized decision making over certain services will allow flexibility in the delivery and tailoring of solutions to truly unique needs;
- A hybrid model recognizes situations unique to McMaster while balancing needs for adopting single campus-wide solutions.

SD4: A Hybrid Model of Cooperation

- Two priorities supporting a hybrid model for cooperation:
  - SD4.1: Hybrid Governance Model of Cooperation
    - » Effective models clearly specify the decision rights and accountability framework to encourage desirable behavior in the use of technology
  - SD4.2: Supporting Alignment of UTS
    - » The right IT organizational alignment is as important as having the right technology

Goal #5: Proactively identify and manage events that would negatively impact financial, physical or human technology capital

- Minimize the magnitude of harm that could be caused by an adverse event on the institutions mission critical technology systems;
- Know the areas within the technology environment where threat and vulnerability have the greatest potential to cause significant disruption or harm;
- Promote awareness of privacy and security best practices;
- Make risk evaluation and assessment an ongoing, iterative process.
- Policies and procedures that strike a balance between privacy and security ensure individuals have access only to the information they require;
- Ensures the University is compliant with all legal requirements around access to, and protection of, personal and other information (e.g. PCI, FIPPA and PIPEDA);
- Considering privacy and security implications before buying or deploying new systems or technologies reduces costs and expedites deployment;
- Ensures a regular schedule for assessing and mitigating technology risks that may result from changes to policies or from new technologies.

SD5: Technology Risk

- Three priorities supporting the reduction of technology risk:
  - SD5.1: Risk Assessment
    - » Used to determine the extent of a potential threat
  - SD5.2: Risk Mitigation
    - » Involves prioritizing, evaluating, and implementing the appropriate risk-reducing controls
  - SD5.3: Risk Evaluation
    - » The risk management process requires regular assessment to ensure new risks are routinely identified and mitigated

Change Management

- Successful change involves a smooth evolution, not a revolution
- Accomplished by ensuring everyone affected by the change has an opportunity to be consulted
- Caveat: there is a difference between change and progress
  - Change involves something becoming different
  - Progress involves a judgment that a change is moving in a desirable direction

Strategic Initiatives Underway

- On-Line Grade Submission
  - Implement the technology and processes to streamline grades submission and related activities
  - Pilot 15-20 courses for December 2010
- Canadian Access Federation
  - Provide federated access to facilitate inter-university collaboration for research and education purposes
  - Support access to protected resources abroad based on user's home institution privileges (e.g. Eduroam)

Strategic Initiatives Underway

- GH Data Centre Renovation
  - Major renovation providing a secure location for hosting services, including secure backup
- Payment Card Industry Compliance
  - Requirement to be compliant with PCI standards for accepting credit card payments
  - Failure to pass external audit could mean reputational risk and possibility of losing ability to accept credit card payments

Strategic Initiatives Underway

- Directory Services
  - About ensuring the right people access the right information and services
  - Simplify authentication, identification, and authorization to central and distributed services across the University
- Oracle Roadmap
  - Provide the University community with an implementation of a highly available and scalable database architecture for safely and reliably storing and accessing institutional data
- ITIL Best Practices
  - Improve quality and cost effectiveness of IT service delivery

Recommendations 2010-2011

- Systems Renewal – Selection & Approval

	Target
• Business case for SIS, FIS, RIS	Jun 2010
• Issue RFP	Sep 2010
• Demo functionality	Nov 2010
• Determine final scope	Dec 2010
• Contract negotiations	Mar 2011

Recommendations 2010-2011

- Business Intelligence: Strategy and Architecture Development

	Target
• Document Current State	Jun 2010
• Confirm capability of SAS BI	Aug 2010
• Development future state vision	Sep 2010
• Establish a BI Architecture roadmap	Dec 2010

Recommendations 2010-2011

- Clarification of Roles & Responsibilities

  - Review of technology operations across campus with the objective of identifying which services are best provided centrally, and which are best offered locally within a unit

Target:	Draft Report	Dec 2010
	Feedback	Mar 2010
	Final	May 2011

Recommendations 2010-2011

- Define and promote Standards

  - Establish the framework required to support the identification, scope, creation, maintenance and enforcement of enterprise standards

    Target: Dec 2010

  - Identify and communicate enterprise standards and ensure standards take into account the legitimate needs of different University key stakeholders (e.g. research, teaching, students, and administration)

    Target: Jun 2011

Recommendations 2010-2011

- Hybrid Model for Decision-Making (in support of clarifying roles & responsibilities)

  - Recommend IT Advisory structures that are broadly representative with clear mandate and terms of reference

    Target: Jul 2010

  - Communicate results via web-based comprehensive IT service catalogue

    Target: Jan 2011

Recommendations 2010-2011

- Implement a Supporting UTS Alignment

  - Identify “relationship managers” for each Faculty

    Target: Jul 2010

  - Complete realignment addressing skills deficiencies

    Target: Dec 2010

Conclusion

- Vision 2020 is a framework for the future, predicated upon assumptions that:
  - Status quo is simply no longer an option
  - Success is dependent on a spirit of collaboration
- The benefits of Vision 2020's five strategic directions are:
  - Applications & services with a clear relationship to the mission of the University
  - A reduction in the number of technologies, core systems and applications in use
  - Eliminate duplication of services and improve service performance
  - Permit early adoption of emerging technologies

Comments or Questions?

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