Executive Summary

Introduction

Over the past spring and summer, campus IT leaders solicited the opinions and expertise of faculty, staff and students to examine the plans and priorities for the use of information technology in support of the mission for CU-Boulder. The process involved over 200 individuals who served on committees or focus groups, authored subsections, participated in surveys, or reviewed chapters of the report.

The results of the planning efforts are a six chapter report, comprising 24 subsections. The six chapters are:

- Academic Technology
- Data and Voice Network
- Communications: Email, Web & Workflow
- Architecture and Security
- Central Services: SIS replacement project, e-commerce, printing, and software licensing
- IT Governance

Each subsection has recommendation associated with it; however several significant recommendations have emerged as the highest priority.

> *One of the greatest challenges to college and university leaders is to determine, implement, and sustain the IT infrastructure necessary for successful teaching and research in the digital age. As technology becomes more pervasive in both the academic and administrative activities of the contemporary university, the investment in IT infrastructures becomes less of a luxury and more of an absolute requirement of learning and scholarship, not to mention the operation and management of the institution.*
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> *(Duderstadt, Atkins, and Van Houweling, 2002 Higher Education in the Digital Age. p. 99. American Council on Higher Education and Praeger Publishers)*

Recommendations of the 2006 IT Strategic Plan

1. Enhance security and efficiency by developing a unified IT architecture and set of central data services.

The campus will have greater data security if all sensitive data resides in one place that can be easily accessed by the appropriate set of people. Beyond increased data security, an added advantage of a unified IT architecture and central data service is that data would be available in real-time, rather than batch information that may be hours to weeks old. For departments, this update to our campus IT environment could be a significant increase in efficiency because personnel and IT equipment costs would be reduced by accessing one authoritative system, rather than departments creating and managing their own shadow systems.

2. Develop funding models that provide appropriate renewal and replacement funding for strategic IT infrastructure components. This includes: the data network, smart classrooms and core servers (email, web, and LMS).

- The campus needs a renewal and replacement strategy for the data network because the current model does not generate enough revenue to cover the full costs associated with it. A new model should consider various solutions, including a

usage/utility model, a “common good” model and hybrid solutions between those two options.

- The campus does not allocate enough resources to support renewal and replacement for its existing technology-enhanced instructional facilities. A comprehensive cost model for these facilities that recognizes the true cost is overdue. A new funding model for technology-enhanced instructional facilities should be developed to support: multiple pedagogical approaches, multiple levels of user sophistication, and an increasingly complex and variable technology environment.

- Many critical campus core systems do not have renewal and replacement funding to ensure continued campus support. These systems include email, web-based services and Learning Management System (e.g. WebCT). Committed, ongoing funding is essential to maintain the availability and functionality to meet campus service expectations.

3. Develop a New Data Network Funding and Usage Model

The data network is a strategic resource that faculty, students, and staff heavily rely on. The data network now includes both wired and wireless and is the virtual backbone of all electronic communication on campus. The campus must develop a model that includes a basic suite of networking services for all university members. The basic suite should include wireless access and adequate security. A small percentage of users require high levels of bandwidth and a subset of those users require even higher bandwidth for super computing. This new model should accommodate both of those users groups. Leveraging the data network directly relates to developing an appropriate funding model, which is covered in #2, above.

4. Research Computing

This is an opportune time to re-consider some degree of central support and/or coordination for research computing, especially given the potential for the NCAR/UCAR data center. A collaborative solution for high performance computing would maximize the resources of multiple departments, minimize duplication of efforts across campus, and significantly strengthen the campus’ ability to respond to research opportunities for high performance computing.

5. Teaching Innovation within the Classroom

The academic technology environment on campus is characterized by a division between a subset of the campus that seeks to lead in innovative and creative uses of (especially new) technologies and a larger portion of the campus that seeks standardization, ease-of-use, and robust support for existing technologies. While the campus has historically provided adequate support and services for the second group, it has been more difficult to support and encourage the former. As it moves forward with educational technology initiatives, the campus should attend to the needs of both groups, in part through increased participation of faculty in decisions about services, support, training and programs.

The campus should investigate new technologies systematically, and disseminate the results of that investigation so that standardized and robust support for technologies

used in innovative teaching and learning methods can be developed for the entire campus. Likewise, there is a need to move some existing technologies (such as clickers and the Learning Management System—WebCT—to a more robust, supportable state to encourage widespread and cost-effective adoption.

6. Greater Email Coordination and Centralization

More email services should be centralized, decreasing the number of email servers to take advantage of economies of scale, improve security and limit reliance on departmental staff whose workload is too heavy. The need for premium service that provides email, calendaring, and mobile access should be recognized and delivered in a cost-effective manner. The decision to operate a distributed Exchange server should be made at the campus executive level in order to safeguard campus-wide service.

Other Areas of Consideration

Other areas for consideration include investigating whether the campus should: develop a **policy about recommending a laptop**, rather than desktop computer for incoming students, provide coordination and support for **campus-wide site licensing**, and **adopt a single clicker solution** with a backend infrastructure and standardized support.

Additionally, a comprehensive examination of how the campus processes documents for review, collaboration and archival in various business processes (e.g. **workflow**) is needed; however this area is at best partially an IT issue.

Finally, significant IT initiatives such as **extensive security enhancements with data security**, and library initiatives which include **institutional repositories and digital asset management** are already well underway, but need more awareness and collaboration to be fully successful.

Conclusion

Faculty, students, and staff at CU-Boulder expect an IT environment that is ubiquitous, reliable, and robust to support their academic, research, and administrative endeavors. Over the next four year this strategic plan provides a roadmap of IT initiatives the campus should undertake to support the campus mission. Information technologies are in a state of constant change, and often involve a significant investment; therefore, prudent IT strategic planning is essential to address changing campus needs and establish priorities for the use of IT on campus. IT Council, along with the office of the vice provost for academic and campus technology, and ITS will work closely with the campus to fulfill the priorities outlined in this report and report the progress to the appropriate governance boards.