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## Trends in Information Technology

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Trends in information technology, both globally and locally, have a significant impact on the strategic priorities for CU-Boulder. At the same time, the maturity of the campus's IT infrastructure combined with pockets of cutting-edge and innovative use of technology mean that trends do not necessarily dictate the campus's strategic direction, but rather that trends can be assessed and followed as they support the academic mission of the campus.

Generally speaking, and as was the case four years ago, devices are (ever) smaller, more mobile, and more common. At the same time, expectations for IT services and support have increased across all sectors, including higher education.

**Local trends** that shaped CU-Boulder's IT strategic planning process include:

- Expectations on the part of students, faculty, and staff that information and services are provided to the end-user as a seamless package, even, perhaps especially, when those information and services span several campus units.
- Increasing use of the campus student portal, and concomitant increased expectations that services, including authenticated services, will be provided through the portal using a single sign-on process.
- Student computer ownership rates hovering at around 98%, with the rates of laptop and multiple computer ownership rising (to over 75% and 25% respectively). Despite high laptop ownership rates, students still rely heavily on computer kiosks (SCARPIES) around campus and rarely bring laptops with them to class. Few faculty either require or ban the use of laptops in class.
- Increasing importance of identity management for both centrally-supported systems such as email and WebCT, as well as for departmentally managed-systems such as CAPA in Physics and Moodle in Computing Sciences.
- Most courses have a web presence, but online academic environment on campus is fractured. While 80% of courses that have an online presence use the centrally-supported learning management system of WebCT, many others have websites run through products such as Blackboard, Moodle, and Sakai, or feature websites developed and hosted locally, either by faculty or their departments.

Two reports on information technology in higher education institutions, the Campus Computing Report and EDUCAUSE's Top-Ten Issues, 2006<sup>1</sup>, indicate a shift in focus away from enterprise systems, distance education, and student portals (which were the focus four years ago), and toward issues that allow campuses to maintain the stability and integrity of their systems.

- Security concerns topped the list for both reports; respondents to the Campus Computing Survey indicated a sharp increase and high numbers of network attacks,

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<sup>1</sup> Barbara I. Dewey, Peter B. DeBlois and the 2006 EDUCAUSE Current Issues Committee, "Top-Ten IT Issues, 2006," *EDUCAUSE Review*, Volume 41, May/June 2006, p. 58-79.

breaches involving personally identifiable information, and virus infections, as well as renewed attention to warding off such security incidents in the future.

- Closely aligned with security concerns is the issue of identity management, the process of managing identity information to appropriately provision access to online services, also of high concern to most higher education institutions.
- With the hurricane season of 2005, the necessity for disaster recovery and business continuity plans for all campuses became clear. While many are in the process of developing such plans, only a small majority of campuses actually have implemented them.
- Data from both reports indicate the continued importance of learning management systems as instructional tools at the heart of the academic endeavor. Campuses are increasingly dependent on LMSs, both as a supplement to face-to-face instruction as well as for more “traditional” distance learning courses.
- Online services are increasingly important for faculty, staff and students across higher education, with a steady increase in the numbers of campuses with a student portal, as well as in the numbers of campuses planning to implement one.

### **Snapshot of CU-Boulder’s IT environment**

- The CU Connect portal is used by 98% of students to access most student services such as registration and advising. The faculty-staff portal is used by 50% of faculty and staff, and offers such services as faculty tool kit to support course information and simple speedtype queries.
  - In 1997-98 62% of the incoming freshmen class owned their own computers as compared to 95% in 2001-02 and 98% in 2005-2006. In addition, student-owned computers increasingly are mobile computers; the percentage of laptops among student-owned computers grew from a small percentage in 1998 to 40% in 2001 and now, in 2006, to more than 80%.
  - 100% of faculty are served by the Faculty Computer Purchase Program; of those who placed orders for the fall 2006 semester, more than 50% purchased laptops.
  - In 1997-98 13,500 campus computers were connected to the campus network as compared to 23,000 in 2001-02 and 26,000 in 2005-2006.
  - Over 772 courses, supporting over 22670 students, utilize the campus’ course management software, WebCT.
  - In 1997-98 41% of centrally scheduled classrooms had network connectivity as compared to 58% in 2005-2006.
  - Clickers are used by over 5000 students in 50 classes and 8 departments, making CU-Boulder a world leader in the use of clickers in higher education classrooms.
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