Enterprise and Infrastructure IT at EDUCAUSE

Summary Rationale and Plans

Higher-education IT comprises six overlapping technology domains: the three mission-focused domains (education, research, and community service), and the three core domains (infrastructure, administration, and communications). Framed thus, "Enterprise and Infrastructure IT" (EIIT) means IT infrastructure, applications, services, and staff that primarily serve the institutional core rather than focus on specific mission-oriented activities. That is, it includes the technology, staff, services, and support associated with campus IT infrastructure, administrative systems, and communications mechanisms, plus their strategy, management, support, and policy.

Enterprise and Infrastructure IT, through its emphasis on core institutional activities, is central to the success of higher education. EDUCAUSE has long recognized this, especially as it has drawn together the joint legacies of CUMREC, CAUSE, EDUCOM, Net@EDU, and myriad other entities and activities.

Yet somehow the joint legacies have yet to coalesce into an effective whole. Perhaps this is because we have been extremely respectful of their somewhat divergent traditions, communities, and past achievements. We must not be disrespectful, but it is time to change this: to focus explicitly on what EIIT needs in order to continue advancing higher education, and to bring some uncommon thinking to this general good.

Why is Enterprise and Infrastructure IT Important?
Three reasons: Magnitude, Change, and Coherence.

Magnitude
Based on data from EDUCAUSE's Core Data Service (CDS) and the federal Integrated Postsecondary Data System (IPEDS), the typical college or university spends just shy of 5% of its operating budget on IT. Of this, extrapolating from staff counts in CDS, at least 40-50% of central IT expense goes to core infrastructure and administrative systems, and another 15-20% goes to institution-wide support. Depending on what one assumes about non-central expense (where data are meager), this means that about half of all IT spending in higher education is for Enterprise and Infrastructure IT.

Why, given the magnitude of EIIT relative to other college and university IT, has it not been more prominent in strategic discussions? There are at least two explanations: relatively slow change in EIIT, at least compared to other IT domains, and overlap—if not competition—between higher-education and vendor groups.

Change
Enterprise and Infrastructure IT is changing thematically, driven by mobility, cloud, and other fundamental evolution in information technology: for example,

- maintenance is giving way to renewal,
- direct administration and operations are giving way to negotiation,
- segregated data and systems are giving way to integrated warehouses and tools,
- unidimensional reporting is giving way to multivariate analytics, and
- authority is giving way to persuasion.
EIIT also is changing specifically, as concrete challenges arise:

- **major systems** are approaching end-of-life,
- the importance of **analytics** is growing,
- extensive **mobility** is supported by third parties, and
- **cloud-based** infrastructure, services, and applications are increasingly affordable and capable.

Unlike the last three, which are widely appreciated, the first point has received little attention. In the mid-1990s, in part to address y2k issues, many colleges and universities invested heavily in administrative systems often (if inaccurately) called "Enterprise Reporting and Planning" systems or "ERP." Among the 500+ respondents to CDS, for example, there were about 40 implementations of student, finance, or HR systems in 1990-94, and then a sharp rise to 130 in each of the succeeding five-year periods.

Therefore, many administrative systems soon will be **20 years old**. Although they technically can operate into the future, functional obsolescence typically happens after about 20 years—exacerbated by vendors' disinterest in supporting older systems. Functional obsolescence and loss of vendor support may transform current administrative systems stability into 1990s-style uncertainty and change.

### Coherence

One might expect colleges and universities to have relatively consistent requirements for administrative systems, and therefore that the market for those would consist largely of a few major widely-used products. The facts are otherwise. A recent EDUCAUSE Center for Applied Research (ECAR) study found that **the closest we come to a compact market is for learning management systems**, where 94 percent of installed systems come from the top 5 vendors—and even so there are 24 vendors and open-source groups. At the other extreme is web content management, where 89 active companies and groups compete and the top providers account for just over a third of the market.

The ideal way to reverse this is for higher education to act coherently toward its principal vendors. This, in turn, requires some mechanism for higher education to develop and commit to common expectations. Unfortunately, the current mechanisms available to do this are either controlled by vendors—in the form of CIO-level "advisory" groups—or are scattered among and within higher-education IT organizations.

**Overlap among vendor groups and higher-education associations yields scattershot attention and dissipated energy.** Neither serves higher education well. Replacing discordance with coherence thus joins accelerated change as a major argument for refocusing and reenergizing EIIT.

### What Might EDUCAUSE Do?

It is time to focus explicitly on how Enterprise and Infrastructure IT can best advance higher education. EDUCAUSE can play a useful role in this, both by drawing some of its current activities into sharper alignment, and perhaps in due course by building new activities on that foundation.

Current EDUCAUSE activities relevant to EIIT fall into two categories. Those that are **predominantly focused on the domain** include

- the **Advanced Core Technologies Initiative** (ACTI),
- the **Advisory Group on Enterprise Information Systems and Services** (AGEISS),
- the **Enterprise Leadership Conference**, and
- the **Security Professionals Conference**.
Those that **straddle several other areas** (or the full gamut of higher-education IT) activities include

- data collection and research associated with ECAR and CDS,
- the broad array of advocacy and analysis within EDUCAUSE Policy,
- the extensive work of the Higher Education Information Security Council (HEISC),
- the **development and support of managers and leaders** within higher-education IT,
- many publications, webinars, conferences, and other **dissemination** activities,
- **corporate relations and trade shows** that provide conduits for efficient interactions with vendors,
- the Campus IT Policy Workshops,
- several **constituent groups and committees** such as the Network Council, the Chief Privacy Officers group, and the Campus Policy Advisory Group, and last but not least
- **conferences and other gatherings** devoted to higher-education IT in general.

Initially EDUCAUSE is focusing its EIIT efforts on **alignment**. This entails five principal moves:

1. We are **drawing various "predominantly focused" and some other activities together administratively**. For the most part they are already joined hierarchically (for example, HEISC, the Security Professional Conference, ACTI, and most campus-policy activities already report to the same vice president). There are opportunities to increase synergy among them without diluting their appeal or impact.

2. We will build **collaborations and alliances** with groups outside EDUCAUSE also focused on EIIT—for example, groups focused on networking, IT architecture, identity and access, or data management.

3. We are gradually combining what had been three co-located or separate conferences—Enterprise, Security, and ACTI—into **one major Spring event** focused on EIIT. In 2013 the three will still be separate but co-located, with some coherence-oriented change to plenaries, receptions, and other details. In 2014 we expect to offer one event, albeit with threads planned by somewhat separate program committees.

4. We are convening a **small group of CIOs and other IT professionals to think together** about likely trends in EIIT. This will yield documents and presentations assessing changes and promoting steps that colleges, universities, and their vendor partners should be taking to accommodate, advocate, and benefit from likely changes.

5. We are reviewing and perhaps rethinking the various **EDUCAUSE advisory groups** that currently work in the EIIT space. This may result in some changes in the membership or focus of these groups.

In addition, we will be working to ensure that EDUCAUSE's broader activities reflect and promote progress in EIIT:

6. We will work with colleagues responsible for **professional development and support** and with those who oversee CIO-related activities to make sure these encompass EIIT issues.

7. We will modify, merge, or create **new online discussion groups** to enable and gather discussion among IT leaders and staff involved with EIIT.

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The principal audience for these efforts is IT professionals whose work concentrates on core IT within colleges and universities—CIOs, to be sure, but also their direct reports and the staff who oversee core activities, plus the commercial firms and cross-institution collaborations that provide and support EIIT hardware, applications, and services.

Over time, EDUCAUSE may undertake a broader array of activities in support of Enterprise and Infrastructure IT. The work that will unfold into 2013 should lay excellent foundation for future progress.