Overview

Budget cutbacks, rigorous regulatory requirements, rising demands for IT services, and IT’s contribution to transformative change—all these fuel the need for IT leaders to communicate IT’s value to senior administration, legislators, and others to ensure adequate institutional IT resourcing. In turn, IT leaders’ growing recognition of the value of IT has generated lively debate about how to define and measure it.

A case in point is the EDUCAUSE IT Issues Panel, which tackled the issue during its April 2012 meeting. The question “How would you define the value of IT in a way that could be measured?” sparked animated conversation that coalesced around several themes. The panel members identified the IT value measurement methods that resonated most with them:

- **Impact on the core institutional mission:** Demonstrating how IT value directly impacts the core institutional missions of teaching, research, scholarship, and service to the community.

- **Benchmarks against peers providing similar levels of service:** Comparing service catalogs and EDUCAUSE Core Data statistics, as well as informal colleague or e-mail list inquiries.

- **The quality of individual services rather than IT overall:** Detailing what services are offered and their utilization metrics, as well as potentially ranking other dimensions such as infrastructure, application support, and innovation.

- **Efficiency and effectiveness for the institutional operations:** Providing the lowest cost for an agreed level of service when an institution views IT primarily from the perspective of efficiency and effectiveness.

The panelists’ keen engagement underscored the importance and organizational complexities of undertaking IT value measurement at one’s institution, prompting ECAR to investigate this topic further. The inquiry began with a secondary search of EDUCAUSE resources and other published articles. Upon closer examination, several common themes emerged regarding IT value measurement. A couple of themes mirrored the IT panel’s discussion; new ones emerged, too. Telephone interviews with current IT leaders from several institutions or systems cited in the reviewed resources validated and elaborated on these premises. This research bulletin synthesizes these investigatory activities into five recommendations for instituting IT value measurement.
Highlights

The concept of IT value measurement is problematic in higher education. It requires structure, discipline, and frameworks in a culture that tends to favor discussion, consensus, and anecdotal—as opposed to data-based—decision making. Unlike in other sectors, higher education’s bottom line is less clear. Few institutions use a fee-for-service basis to fund their IT operations; with the exception of communication infrastructure and services (21%), 10% or less of EDUCAUSE Core Data Service respondent institutions rely on cost recovery or chargebacks to fund IT services. Instead, “the value to the organization is more likely determined by the academic and functional units and whether or not IT completed a commission on time or on budget, and not so much about how much they contributed to the bottom line,” stated Donald Z. Spicer, associate vice chancellor and CIO, University System of Maryland. “We just have difficulty getting into formal frameworks, such as ITIL. There is no reward for that currently in higher education.”

But the world is changing. Tighter budgets create a need to prioritize, educate, and communicate about how IT feeds into broader institutional strategies to justify its resource allocations. This comes at a time of rising service demands, placing pressure on IT leaders to allocate precious IT resources in ways that add value in the right places, thus sustaining critical operations while investing shrewdly in new technologies in support of the institutional mission and plan. Through trusted measurement practices, IT leaders can foster senior administration’s clearer understanding of IT value at their institutions to rally support if additional funds are needed or to approve new investment decisions.

Understanding where value resides and how to unleash it is the new higher education challenge, but several factors complicate efforts to measure it:

- The fact that technology has no intrinsic value and that only through its application to an institutional process or activity is value created
- IT’s pervasiveness throughout the institution’s academic, research, and administrative areas, which often precludes identification of a quantifiable and direct impact on any single program or mission
- IT’s shift from away from efficiency and toward a wider range of less well-defined outcomes such as competitive advantage, knowledge management, and improved organizational performance
- The rise of consumerization, which places more control of IT with the department or individual, outside central IT’s direct influence

Thus, some questions serve as a natural starting point to find useful and usable ways to measure IT’s value:

- What is the most effective way to measure value for our institution at this time?
- Whom should we involve in the process?
- How does this impact our IT organization?
To address these questions, ECAR tapped the wisdom of those who have researched or addressed the issue of IT value measurement, with the goal of offering guidance and direction for IT leaders and others embarking on their own programs. This process entailed two phases:

- **Phase One** involved a search of EDUCAUSE resources and other published materials about IT value measurement, resulting in a plethora of articles, presentations, websites, and other resources, which were reviewed and culled for relevance. During the review process, several common themes emerged about implementing an effective IT value measurement program. The section “Where to Learn More” lists a selection of these resources.

- **Phase Two** validated and expanded on these themes by contacting IT leaders from several university systems and institutions that are cited in the resources as involved in IT value–related initiatives. The following graciously agreed to participate: Mark Askren, CIO, University of Nebraska–Lincoln; Gary K. Allen, vice president for information technology and CIO, University of Missouri System; Kimberly Harper, director of finance and portfolio management, University of Nebraska System; Jeffrey Schmidt, CIO/associate vice president, Towson University; and Donald Z. Spicer, associate vice chancellor and CIO, University System of Maryland. Even if the person was not directly involved with the initially cited example uncovered in the literature search, each offered relevant experiences and observations that enhanced this research bulletin.

The result is the following set of five recommendations. It is not a checklist of activities, per se; rather, it is a compilation of wisdom to advise IT leaders and others when implementing their own IT value measurement initiatives.

1. **Align IT with Institutional Priorities**

Number 5 on the EDUCAUSE Top-Ten IT issues for 2012, “Integrating Information Technology into Institutional Decision-Making,” indicates the importance for an institution to ascertain its technology needs to understand when information technology is essential to strategic decision making. Values measurement can help achieve this alignment by determining and reporting on these needs.

This alignment of planning and assessment should occur at all institutional levels, with a focus on outcomes. Focusing on IT’s contribution to business or academic outcomes helps elevate the conversation about technology’s role in strategic initiatives. For example, a project to add cloud storage isn’t seen as a way to enhance data-storage capabilities but rather as supporting a broader goal, like improving student outcomes by investing in analytics infrastructure. One measure of IT’s alignment with institutional priorities is whether the institution’s strategic plan includes strategies and directions for IT; more than three-fourths of institutions have strategic plans that incorporate IT. One way to reinforce IT’s alignment with institutional goals is to link IT measures with institutional mission or portfolio categories and measures to determine how institutional priorities match up to IT portfolio categories and what specific measures can tie the two together.

Defining IT’s broad institutional value also requires institutional involvement to understand how people use technology throughout the institution. This entails the gathering of baseline information about processes, their underlying technology, and perceived benefits through individual or group interviews with all institutional constituencies—senior administrators,
business unit leaders, and academic and student representatives. In addition, such sessions can serve as forums to communicate how IT provides value to the institution, thereby cultivating an understanding of how IT provides value in institutional and strategic terms. Gary K. Allen, vice president for information technology and CIO, University of Missouri System, underscored the importance of the people component in IT value management: “It is never about technology; it is always about people and process.”

2. Set Effective Measures

Setting measures involves a collaborative effort between the IT organization and its administrative or academic counterparts to create mutually understood and agreed upon metrics. If IT defines measures in isolation from the business, the numbers generated—no matter how rigorous—may be challenged or misunderstood outside IT because value definition is subjective, assessed by each stakeholder in terms of desired benefits and reasonable expectations of an IT investment. Information-gathering sessions can provide the starting point to collaboratively set measures and their underlying assumptions among all the stakeholders, creating mutual understanding and commitment. Participants in the measure-setting process should include administrative or academic area leadership to determine and agree to the value measures based on strategic goals and directions, as well as area day-to-day system administrators who can indicate whether the current technology and processes support the underlying information collection and measure reporting.

When setting measures, ECAR’s study Information Technology Alignment in Higher Education offers a checklist to consider to promote effectiveness. Measure should be:

- Reliable and consistent over time
- Tied directly to important goals and objectives
- Understandable and easily communicated (no more than 3–7 measures)
- Developed with accountability for their creation and taking action on results
- Agile—they can be easily implemented, changed, and documented
- Driven by business process, not by systems
- Technology-independent across systems and platforms

Another issue to consider is the need to use multiple measures. Different technologies, services, and initiatives require different methods or evaluation criteria, especially when considering them on the spectra of commodity versus innovate and of applications versus infrastructure. Allen adapts the definition of IT value to the project and the functional area it serves: “We pick specific metrics—either on the technical or functional side—to display the [particular project’s] value.”

There are many different measures to choose from. The list below identifies several common measures, and some of the resources in the “Where to Learn More” section offer more detail about specific measures. Mark Nelson’s ECAR research bulletin, “Assessing and Communicating the Value of IT,” categorizes and compares various IT measures, too.
- **Balanced Scorecard**: A set of financial measures and operational measures that illustrate the desired strategic outcomes and the means of achieving them. ISACA’s generic IT scorecard covers the following areas: corporate [or institutional] contribution, user orientation, operational excellence, and future orientation.\(^1\)

- **Portfolio Analysis**: Considers IT assets not solely from a cost perspective but includes other elements like risk, yield, and benefits. The goal is to balance risk and payoff by investing IT assets that both support basic organizational operations and help create and address new or existing strategic opportunities.\(^2\)

- **Return on Investment Measures**:
  - *Value on Investment (VOI)*: VOI is the measure of the value of soft or intangible benefits derived from technology initiatives, compared to the investment needed to produce them.\(^3\)
  - *Net Present Value (NPV)*: The NPV of an investment is the present (discounted) value of future cash inflows minus the present value of the investment and any associated future cash outflows. It allows consideration of such things as cost of capital, interest rates, and investment opportunity costs. It’s especially appropriate for long-term projects. The bigger the NPV—other things being equal—the more attractive the investment is.\(^4\)

3. **Optimize the IT Organization**

A focus on IT’s value to the institution versus IT as a technology organization can have implications for the IT organization and staff. Sometimes an IT organization must be repositioned or reorganized in support of IT value measurement efforts. For example, the University of Missouri IT organization repositioned IT as technology-facilitated projects being led by the functional side. The University of Nebraska System, with its flagship Lincoln campus following suit, is transforming its IT organizations from technology-focused to service-focused ones.

Kimberly Harper, director of finance and portfolio management at the University of Nebraska System, explained, “How can we talk about ourselves from a customer perspective so they understand what we do, so there is less disconnect? Technology folks have a challenge in translating what they do in a way that makes sense to nontechnical folks and enables them to understand the true value to them. We wanted to become a little more customer focused, and that means being more service focused to understand what our customers need and value.”

To accomplish this change in orientation required the University of Nebraska System’s IT organization to look at itself in a whole a new way. A consultant helped Harper’s group identify and validate service areas. Over time, each staff member realized that individual activity constitutes a piece of broader service team.

In addition, the IT organization might need to adopt new processes (such as time tracking), provide staff with new skills, or add entirely new roles. The University of Missouri’s Allen addressed this by setting explicit expectations for all staff and by conducting performance assessments. He also found that staff members need better communication skills to get them out of a technology mind-set when relating to individual functional end users. Harper found that the identification of some clear, short-term deliverables—like updating the IT organization’s website about its new service areas—helps keep staff motivated through their organization’s
service reorientation. "It is an intense endeavor, and you'll spend a lot of time on it. If there are no small wins along the way, it can become a tedious process," she explained. Mark Askren, CIO at the University of Nebraska–Lincoln, recommends setting objective, clear-cut timelines.

4. Get an Outside Perspective

Given their organizational knowledge and experience, it may be tempting to rely solely on internal staff to organize the IT value measurement program, but sometimes an outside perspective can be helpful. The University of Nebraska System’s Harper appointed a seasoned, veteran staff member to head her area’s reorganization effort but soon discovered that this person’s daily responsibilities impeded his project efforts and his close association with the IT organization curtailed his ability to view it from a different perspective. An outside consultant, with multi-sector experience, revitalized the project, challenging the group’s thinking, offering new perspectives, and creating the service-oriented framework while staff attended to their daily activities.

5. Recognize That IT Value Measurement Is Ongoing

Setting the measures is just the start. Measurement provides both ongoing feedback, which can be used to identify opportunities for improvement or new investments, and evidence, which can support efforts to sunset services. Continued communication with all stakeholders ensures that value expectations remain aligned. Allen elaborated: “We no longer talk about implementing a project in the same way because it doesn’t stop when you turn it on. That just begins another phase. We have to invest time and effort so people can measure how well we are doing. That is an accepted cost of enhanced value. Some of it is driven by system metrics and satisfaction surveys, but it is also a matter of keeping the conversation going among the groups. It changes the dynamics from one of complaints to one of ‘How do we make this even better?’ People who use the systems understand that we are trying to fix them, and they can assist us in doing that. You can get it into a positive cycle, and it can go on itself.”

IT leaders also need to pay attention to IT value measurement efforts, too. “You need to continually push at it within your organization, with your partners, and with the senior leaders to communicate the need and the value,” stated Askren. “It is easy to get diverted from the process because there is always something tactically going on that needs our attention.”

What It Means to Higher Education

Measuring the value of IT is of critical importance if IT is to enhance higher education. Like so many worthwhile endeavors, value measurement requires careful thought and planning and may take several iterations to achieve. CIOs will need to invest time and resources to engage the institution in understanding and defining technology’s institutional value; setting frameworks and objective measures; and delivering them in a systematic and reliable way. It can impact the IT organization’s culture and activities. It is a long-term, continual process.

Those who tackle this process outline its benefits. “Engagement improves communication and understanding for executive leadership and customers. It provides a starting point for measuring our efficiency and establishes a framework for collaboration. It supports our strategic planning and decision making by [facilitating a] better understanding [of] how IT service changes impact the institution, enables more accurate and timely analysis of sourcing alternatives, and helps establish the culture of continual reevaluation of services,” stated
Askren. Over time, value measurement verifies technology’s role in attaining institutional goals, positioning the IT organization for a more strategic role. Allen stated, “I am not operating in a vacuum but in complete coordination with and with the support of not only the IT organization but also the university’s functional leadership. I am not a stranger to their objectives and goals, and they embrace what IT is doing and build that into their planning. It is becoming holistic.”

Increasingly, IT value measurement is becoming a necessity for every IT organization. With tighter state budgets, more rigorous accreditation processes, and increased government regulation and scrutiny, higher education institutions are being held much more accountable than ever before, not only at the institutional level but, in turn, at underlying support units like IT. These pressures are likely to intensify over the foreseeable future, which will only strengthen the need for IT organizations to formally demonstrate their institutional value. The presented recommendations offer guidance for IT leaders and their institutions with their IT value measurement endeavors.

**Key Questions to Ask**

- How does technology align with and support the institution’s mission and goals?
- How does institutional senior, administrative, and academic leadership define IT’s value in their areas’ operations and activities?
- How does the IT leader convey IT’s institutional alignment and value to senior leadership?
- What formal measures currently support the IT leader’s efforts to communicate alignment and value? What frameworks are in place to collect the appropriate IT value information? How can the measures and framework be improved?
- Who should be involved in setting and evaluating IT value measurement information?

**Where to Learn More**


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Citation for This Work
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