Chargebacks and Information Technology Funding

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In many higher education institutions, a department that delivers service to other departments may charge a fee to the budgets of receiving departments. These internal charges are often referred to as re-charges or chargebacks. Chargebacks are often used in targeted areas such as facilities, catering, print services, and information technology (IT), and they apply to only select services. A few institutions use chargebacks comprehensively. These institutions adhere to budget philosophies that allocate all costs to the unit that incurs them. These institutions manage complex internal economies of buyers and sellers with staff dedicated to manage the pricing and billing of internal services.

Typically, IT organizations chargeback for some services. The use of chargebacks in technology has its origins in the days of centralized, mainframe computing. At that time, chargebacks were used to ration access and usage of the mainframe. Since then, computing has changed dramatically on campus. Technology has grown more decentralized and ubiquitous. At the same time, the shared infrastructure for computing has grown more complex and expensive. Institutions have invested considerably in networks and enterprise applications that are used by virtually everyone at the institution. Often, the operations of this new infrastructure are unsupported by chargebacks.

In light of these changes, how should the use of chargebacks evolve? This research bulletin, which draws on research conducted by ECAR in 2004 on the state of information technology funding, examines how higher education uses chargebacks in IT. It discusses the pressures that are driving change in IT and where and how institutions use IT chargebacks. Finally, it explores some emerging models that may suggest the future for technology chargebacks.

The use of chargebacks for technology varies by Carnegie class and institutional control (public or private). Among respondents to the ECAR survey, 46 percent reported that they use chargebacks to some degree. The use is slightly greater among public than
private institutions. Chargebacks are also more prevalent at master’s and doctoral than bachelor’s and associate’s institutions. Figure 1 reports the use of chargebacks by Carnegie class.

**Figure 1. Use of Chargebacks, by Carnegie Class (N=456)**

![Chart showing use of chargebacks by Carnegie class](chart.png)

Source: 2004 ECAR study, Information Technology Funding in Higher Education

The strongest predictor for the use of chargebacks is the institution’s budget philosophy. Nearly all survey respondents with decentralized budget philosophies such as responsibility-center management or “tubs on their own bottoms” employ chargebacks for multiple IT services. For these institutions, the use of chargebacks to fund internally provided services is a basic part of their management culture and tradition.

Institutional culture or management philosophy rather than something inherent in the management of technology appears to be the dominant reason that institutions use or don’t use chargebacks. Survey respondents from institutions that use IT chargebacks indicate that the two most prevalent drivers are to provide choice for customers or to be consistent with historical practices of the institution. The converse is also true. The primary reasons respondents do not use chargebacks are that they have not historically been used at their institutions or are inconsistent with the institutional budget philosophy.

Respondents to the ECAR survey apply chargebacks primarily to technology services that are consumed in variable amounts. As Figure 2 illustrates, among institutions that use chargebacks for at least one service, the most commonly re-charged services are telephone services, followed by print and network services.
The services least frequently funded through chargebacks are enterprise technologies such as administrative transaction systems and course management systems or emerging services such as IT security. These services are typically delivered for the benefit of all users and are more difficult to apportion based on a per-usage charge.

**Impact of Chargebacks**

Most use of chargebacks is dictated by institutional history and context rather than specific management strategies. But, do institutions that use chargebacks to fund technology fare any better or worse than their counterparts who do not? To understand this better, the ECAR funding study looked at three outcome metrics:

- Does the institution have sufficient funding to maintain IT operations reliably?
- Is the IT budget flexible or is it consumed by fixed costs?
- Does the IT budget contain sufficient funds to research and experiment with new technologies?

In the full study, each of the three metrics proved to be a significant measure of an institution’s success at managing its IT funding. 4

When comparing the responses of institutions that use chargebacks to those that do not, we learned that respondents from institutions that use chargebacks have even less

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*Source: 2004 ECAR study, Information Technology Funding in Higher Education*
flexibility than those that do not. Overall, respondents reported that an average of nearly 73 percent of the central IT budget is committed to fixed costs. Interestingly, respondents that use chargebacks actually reported less discretionary budget than those that do not. Respondents without chargebacks reported that between 70 and 80 percent of their budgets are consumed by fixed costs. Comparatively, respondents with chargebacks reported that 80 to 90 percent of their budgets are fixed.

It is not clear from the data whether chargebacks are in and of themselves the cause of this greater inflexibility. We found that larger institutions in general have less IT budget flexibility than do smaller institutions. Since a greater number of larger than smaller institutions use chargebacks, it is possible that the use of chargebacks is acting as a proxy for institutional size. In any case, it is not possible to conclude with certainty which factor is the dominant cause of the budget inflexibility. What is clear is that institutions that use chargebacks do not enjoy any significant advantages in terms of their funding success.

**Alternative Approaches to Chargebacks**

For many years, institutions were able to successfully fund their IT operations with relatively static funding models. In fact, most institutions go for long periods without any dramatic changes to how they use chargebacks. Recently, three trends are causing institutions to rethink how they use chargebacks and other IT funding mechanisms.

- **Decline of telecommunications revenues.** For many years, IT organizations generated surplus revenues from telecommunications charges that subsidized other IT services. More recently, these revenues have been in a steep decline. Competitive pressures have reduced pricing and the prominence of e-mail, and cell phones have drastically reduced usage. As a result, IT organizations have lost the surplus revenues from telecommunications and must fund an operating deficit.

- **Explosive growth in the use of technology services.** At the same time that some revenues have been in decline, the usage of IT services has grown exponentially. Traffic on campus networks, the use of e-mail, and the introduction of wireless networks have all increased substantially without an offsetting increase in revenues. In addition, more students, faculty, and staff use computers for increasingly more important activities. This has stretched the IT organization’s support staff. The revenue for most of these services is not typically sensitive to growth in usage. The services are either centrally funded (wireless, desktop computer support) or funded using a re-charge model that is not sensitive to growth in usage (campus network). Therefore, most IT organizations have not received significantly more funding as the demand for services has increased.

- **New costs are stretching existing budgets.** Finally, IT organizations are experiencing growth in costs that used to be static. Most IT budgets are increasingly consumed by payments for hardware and software maintenance.
Likewise, the cost of IT security has been skyrocketing at all institutions. Due to new threats and compliance requirements, institutions must spend considerably more money on IT security or face unacceptable risks. These new infrastructure costs are rarely recovered through re-charge. For most, they stretch existing resources.

The mounting impact of these forces is driving many institutions to reevaluate their IT funding methods, including chargebacks. To fund the future, institutions need to find revenue streams that are better aligned with the drivers of IT costs. For institutions that rely on chargebacks, this implies shifting away from usage-based pricing tied to technologies that are in decline. In addition, institutions need to find ways to recover some of the costs of the extensive, shared technology infrastructure such as networks.

**Corporate Trend: Chargeback Simplification**

Higher education is not alone in facing these pressures. Corporate IT organizations often use re-charges more extensively than colleges and universities. The need to examine profit and loss of every business unit drives corporations to use chargebacks to allocate the costs of all their central services. Historically, corporate IT chargeback models have also relied heavily on per-usage rate structures. However, according to Gartner research, the models for corporate chargebacks are undergoing substantial change. In a July 2003 publication, Gartner predicted that the dominant form of chargeback would shift from usage to access- and subscription-based schemes by the end of this year.\

It seems that corporate IT organizations are encountering a problem similar to higher education’s. As corporate downsizing has continued, IT departments have seen their budget continue to shrink. However, according to Gartner, for much of this same period IT utilization continued to grow, and the majority of IT costs remain fixed. Even as corporations saw declines in IT utilization (brought about by downsizing), usage-based chargeback revenues declined faster than they could cut costs. Higher education’s financial situation is even more acute. IT budgets have been flat or in decline for many institutions, yet the use of technology continues to grow.

Another flaw in usage-based chargeback models that corporations and institutions both encounter is their limitations for recovering the costs of implementing and operating shared infrastructure. The cost drivers for investments such as networks and ERP systems come more from their complexity and robust features than from their per unit utilization. Therefore, corporations have found traditional chargebacks tied to measures of usage to be of limited usefulness in funding shared infrastructure.

Instead, corporations are shifting away from per-usage chargeback schemes to other pricing models. Like cellular phone companies, they are shifting to subscription pricing based on access instead of use. Gartner defines three types of new pricing models: access, subscription, and tiered usage (see Table 1). The new pricing models are based on flat-rate charges for access to a service (for example, the network) or subscriptions to a set of services (for example, desktop support). Again, like cell-phone companies, some corporations offer tiered pricing for bundles of services.
Table 1. Definitions of Chargeback Models

<table>
<thead>
<tr>
<th>Type</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Access</td>
<td>Charges are based on the ability to access certain functions. Usually a flat fee is associated with this type of service.</td>
</tr>
<tr>
<td>Subscription</td>
<td>Charges are based on flat fees for various components that may be independently priced (service menu). The subscription fee is usually based on a contracted period of time. The fee is not based on usage, but rather on access, functionality, and service levels.</td>
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<tr>
<td>Tiered Usage</td>
<td>This usage component is often part of a subscription-based model and is used to recognize costs associated with usage. Charges are based on pre-established ranges of use.</td>
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</table>

Source: Gartner research

Each of the new methods of chargeback pricing is intended to retain consumer choice over which services to buy, recognize that customers consume variable amounts of service, and provide a more predictable revenue stream for the IT organization.

Higher Education Responds: Bundled Services

Colleges and universities have also begun to adapt their chargeback models to align with today’s technologies and cost drivers. One prevalent change has been a shift away from usage charges for individual services to flat fees for a bundle of services. Several institutions have implemented a flat technology charge per knowledge worker. Each institution has adapted its own definition of what constitutes a knowledge worker. However, at its core, the intent is to recognize that for the majority of faculty and staff, computing has become an essential tool to accomplish their work. These institutions believe that a basic set of technology capabilities (a computer, e-mail, a network connection) is as essential for a knowledge worker as a desk and a chair. Therefore, these institutions have created a flat fee charge per knowledge worker that is allocated to a department based on employee headcount. The knowledge worker charge often replaces previously itemized charges such as phone usage, network connections, and individual computer purchases.

The advantages of the per-knowledge-worker chargeback over itemized usage chargebacks are several. First, it is simpler to administer. Unlike usage-based charges, it does not require specialized software or dedicated administrative staff to manage internal billings. Second, it provides a more even distribution of technology capability on campus. Units are required to provide a minimum technology capability to their staffs. This in turn minimizes the disparities in technology capability between units. Third, it provides the IT organization with an opportunity to fund some shared infrastructure costs through the knowledge worker charge. Like the access charges discussed above, knowledge worker charges can include funding for shared infrastructure like networks, IT security, or enterprise systems.

The use of bundled charges per knowledge worker has its detractors. Some institutions believe strongly that itemized chargebacks are superior in that they more closely match costs to the individual cost drivers. They believe that itemized costs are more
transparent and build trust between IT and its customers. These institutions believe that itemized charges force institutional stakeholders to place a greater value on individual IT services (or indicate which services they do not value) because they pay for them directly.

What It Means to Higher Education

In assessing the use of information technology chargebacks, institutions must confront two separate questions. First, an institution has to decide if it is appropriate to use chargebacks at all. Then, the institution can address the secondary question of what method of chargeback works best for each IT service.

Chargebacks or No Chargebacks?

On the question of whether to use chargebacks, an IT organization should follow the accepted practices of their institution. Use of chargebacks per se does not provide any inherent advantages to an IT organization in terms of overall funding success. Therefore, IT likely will not benefit from being the first service unit to introduce chargebacks at the institution. Rather, it makes sense to conform to the prevailing budget philosophy of the institution. If that philosophy features chargebacks as an accepted practice to fund all or part of a central service, then IT should observe where and how to use them.

Conversely, the risks of introducing chargebacks for IT in an environment with no tradition of charging budget units for central services are significant. An organization in this position risks alienating its customers and seeing its time and energy diverted to negotiating rate structures. This effort would be significant and is not likely to result in more secure funding. Arguably, an IT organization would be better served by investing its time (and political capital) to promote the value of technology and the need for funding through the central budget process.

The one exception would be if there were a scarce IT service that could only be rationed through the use of chargebacks. In this case, there could be an advantage to IT to introduce chargebacks even if the broader budget philosophy does not support their use.

Optimal Method of Chargeback

In terms of how to best use chargebacks, the critical issue seems to be to match the appropriate method of chargeback to the characteristics of the underlying service. Table 2 identifies three types of IT services—emerging, metered, and core—and proposes the optimal method of chargeback for each.
<table>
<thead>
<tr>
<th>Service Type</th>
<th>Description</th>
<th>Goals</th>
<th>Optimal Funding Method</th>
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<tbody>
<tr>
<td>Emerging</td>
<td>New technology or application of existing technology</td>
<td>Encourage adoption and experimentation</td>
<td>Free to end users</td>
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<td></td>
<td></td>
<td>No barriers to adoption</td>
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<tr>
<td>Metered Services</td>
<td>Established technology or support services consumed in variable amounts by end users</td>
<td>Manage demand</td>
<td>Usage-based chargebacks</td>
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<td>Allocate costs to units consuming the greatest amount</td>
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<td></td>
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<td>Preserve management choice of how much to consume</td>
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<tr>
<td>Core Technology</td>
<td>Technology or support services minimally required by all faculty and staff</td>
<td>Ensure all (or most) have access to minimally required technology</td>
<td>Subscription- or access-based chargebacks</td>
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<td></td>
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<td>Avoid wide disparity in available technology tools within the institution</td>
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<tr>
<td></td>
<td></td>
<td>Secure sufficient revenue to fund renewal and replacement</td>
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In devising a chargeback model, institutions should seek to match the chargeback method to the characteristics of the technology and their own management goals. If the need is to ration a scarce service or use economic forces to meter demand, then a usage-based chargeback would be effective. If the institution seeks to encourage adoption of a new technology, then the use of the technology should be free or subsidized. If a technology is considered essential and the institution is trying to ensure that all have access to a minimum level of capability, then a subscription-based chargeback would be most effective.

This model of chargebacks is intended to maximize efficiency by limiting usage-based charges. Further, it seeks to align chargebacks with actual managerial control. If a service is truly consumed at the discretion of a department, then a usage-based chargeback makes sense. If a service is not within the control of a manager or the institution wants all departments to buy a minimum level of service (to support a broader strategic objective), then an access-based chargeback is more appropriate.

The actual distribution of IT services into the three categories will vary by institution and over time. For some, a wireless network might be an emerging service that is offered for free, while at another institution it might be considered a core technology that all departments should have access to and share the costs of supporting. The key is to
have a fluid model that can adapt the method of charges and the rate structure as
technologies mature.

**Key Questions to Ask**

In considering how your institution will use IT chargebacks, there are several guiding questions to keep in mind.

- In what ways does the institutional budget philosophy support or mandate the use of chargebacks?
- Will introducing chargebacks for certain IT services meet a clear management objective such as metering demand or securing a sustainable revenue stream to fund technology renewal?
- Are chargebacks creating unintended consequences such as creating barriers to technology adoption or disincentives to share IT services?
- Does our institution face a risk that the benefits of chargebacks might outweigh the costs of administering them?
- Do the methods of chargeback pricing (for example, access, usage) match the type of underlying service?
- What regular processes are in place to reevaluate how chargebacks are applied?

**Where to Learn More**

The following sources provide additional interesting information about IT funding, institutional budget philosophies, and the use of chargebacks.


**Endnotes**

2. Ibid., pp. 35–41.

3. The terms “responsibility center management” and “tubs on their own bottom” refer to institutional budget philosophies that look at each division of the institution as a standalone entity from the financial perspective. In these budget models, a school typically keeps its own revenue (less some prenegotiated central tax) and is expected to fund all of its costs of operation.


6. Ibid., p. 2.

7. Ibid., p. 3.

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