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## **“Please, Sir, May I Have Some More?” Funding Information Technology in Academia**

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In a scene from the Dickens novel, *Oliver Twist*, Oliver asks for a second helping of porridge. "Please Sir, may I have some more?" he asks. "MOOORRRE?!" shouts the man in charge. "MOOOOORRRRE?!?" The boy knows the answer to the question and runs. He was lucky to get what he got.

Like *Oliver Twist*, most higher education Information Technology (IT) organizations are faced with a need for more porridge – an ever-increasing need for funding and resources to meet growing technology demands. It's easy to ask for more porridge when there is plenty to go around, but how do you ask for more when it's already in short supply? Even more so, how can you make the case that you getting more porridge will make everyone else *less hungry*?

As I have stated in past Journal articles and on the listserv, an institution needs a consistent, holistic view of charging for technology services -- an algorithm that is fair across all services and all departments. Today's economic challenges, changing revenue sources, and trends toward fiscal accountability necessitate a need to move *away* from outdated funding models, cross-subsidization, and unreliable one-time capital allocations and *toward* an approach based on the true cost of each service, differentiated service levels, and life-cycle funding. The need is for a predictable and controllable IT funding model that will:

- Keep pace with rising demands for technology services.
- Provide pricing/funding strategies that can scale to meet future needs.
- Support cost-effective IT operations.
- Provide a context for making IT decisions.
- Cover a wide range of clients and services.
- Be durable under the pressure of changing demand and shifting services.
- Address the technology objectives in the university's strategic plan.

That's a lot to ask of one, simple funding model! However, as they say on late night television, "...but wait, there's more!"

The IT cost recovery model also becomes the framework for the on-going acquisition and management of new technologies and applications. Given that services and technologies will change, the income to support IT services should adjust as services change. Since you don't have unlimited resources, you

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can't be everything to everyone. You need to prioritize, maximize, and make decisions as part of your overall 'technology context' – an institutional framework for evaluating technology decisions. While some institutions have developed a context when it comes to campus master planning (commonly reflected in a consistent 'look and feel' to buildings on campus), most institutions don't have this same kind of context when it comes to technology in general, much less to the funding of technology. Without this context, technology decisions are too often made on an inconsistent, ad hoc basis. This is partly because few schools have gone through the process of determining the true costs of the IT services they offer or coming up with a methodology for recovering those costs. Consequently, as we work with colleges and universities on technology funding, we find that many suffer from some or all the following maladies:

- While IT is acknowledged to be critical, the funding for technology services is inadequate and/or unpredictable.
- Many schools recover voice costs through telephone charges to users but do not charge for other technology services. Often telephone charges are subsidizing the cost of other services.
- Budgeting for technology costs at many schools is not all inclusive. For example, funding for system renewal and replacement, costs incurred by other departments in support of IT, and costs for researching and testing new technologies are often not included -- but should be.
- Data network electronics and cable and wire infrastructure are in constant need of improvement to ensure stability and redundancy. There is rarely an identified funding source for this work.
- Budget cutbacks and increasing demands for fiscal restraint are occurring at the same time as the disappearance of traditional revenue sources (such as income from residence hall telephone service) used in the past to subsidize technology services.
- Traditionally separate services (voice, data, and video) continue to converge. Continued deployment of services such as VoIP and video over IP have a direct impact on support services such as help desk, trouble shooting and staffing.
- IT expenses often exceed income. Budgets are balanced using rapidly depleting reserves, deferring equipment replacement, cutting corners, and getting infusions of one-time allocations.
- IT income frequently does not track with expenses. For example, the data network is often funded through flat general allocations which are wholly unrelated to the growth or decline of the services provided or to the demand on IT resources. There is often no mechanism to fund the increased up-front and on-going costs of the network as it grows in both size and complexity.
- IT departments tend to be insufficiently staffed to meet growing expectations. While most IT departments do an admirable job of keeping up with service demands, increasing requirements can eventually over-burden the staff, raising the potential for staff burn-out and the likelihood of losing key personnel. Unless new resources are identified, problems and failure to meet critical deadlines will become more commonplace.
- Many institutions charge for voice but not for data and other IT services. This will not continue to work as voice, data, alarm, and video services continue to converge. For example, is VoIP a chargeable voice service or a non-chargeable data service? If non-chargeable, where will the funding for enhancing the data network come from?

Maybe you are one of the lucky ones who can read the above and say, "That's not us." If so, congratulations! But for the rest of you, how does one go about getting to that predictable and controllable IT funding model?

First of all, keep in mind that much of the benefit of developing funding models is not the model, it's the process. The process forces an in-depth consideration of all the technical, operational, and political issues associated with what you do, how you do it, and the benefits you provide to the user community.

The model itself is a relatively straightforward matter of allocating costs to services. The complexity lies in developing an in-depth understanding of your services and costs. Here's the process in a nutshell:

- Identify the specific services you provide and the components that make up each service (dial tone, voice mail, wired data, wireless, etc.).
- Identify the expenses associated with each service based on those expenses.
- Add in any applicable expenses not presently addressed within present budgets.
- Estimate depreciation schedules to fund future expansion and replacement. These should be based on capital cost and useful life of the applicable equipment.
- Allocate staff time across the different categories to more accurately reflect how staff spends its time rather than who pays that staff member.
- Identify new services expected to be implemented within the time frame of the project and allocate those across the services
- Roll-up the identified services into "chargeable" user services. Remember that not all services are chargeable. For example, DNS, DHCP and LDAP are all services that you provide but which are not chargeable. These "pseudo-services" need to be rolled up into a data network or data access charge that is logical to charge users for.
- Estimate the growth/decline in services and changes in costs over your planning horizon.
- Identify current revenue sources and cost offsets.
- Develop rates and cost recovery strategies as applicable.

Once you have accomplished the above, you should be able to plot a matrix of costs against chargeable services. The complicated part is making the decisions such as how to roll-up and allocate the costs for the underlying, shared services (such as DHCP etc.) and how to allocate time for people who serve multiple functions. Additionally, it makes sense at this point to develop an approach that will deal with future services as well.

There are a number of cost recovery options each with pros and cons. But before you get to these, you need to determine whether to charge for services or not. First of all, there is a difference between "charge-back" and "cost allocation." Allocating costs for your services, whether money changes hands or not, allows you to keep track of consumption of services, allows the departments to understand the ramifications of their technology decisions, and provides executive management a way to understand why technology costs what it does. Cost allocation is essential for good management; charge-back is not. In any case, the "big pot of money in" and "big pot of money out" funding model that many institutions use doesn't allow anyone to understand or cope with changing technology and leads to the all too common "while-you're-at-it, do-this-too" syndrome.

Here are the major arguments for charging for services:

- There are different cost centers and budgets that must be taken into consideration. This is especially true when departments or schools have their own revenue streams and expenses and are not centrally funded.

- It shifts responsibility to the departmental level. (If there is no control at the local level, IT must have the authority to say yes or no to all technology requests. Given the politics in most institutions, that can get ugly real fast.)
- It makes the “cost causers” the “cost payers”.
- It makes users aware of the cost of technology.
- It controls costs by eliminating the “if it’s free, I’ll take-ten” mentality.

Here are the major points against charging

- The services are required by virtue of the academic mission and are therefore considered to be critical core services.
- Services should be provided based on need not on budget. Less well funded departments suffer if they must pay for services.
- Provision of services without charging saves the cost of management and tracking systems.
- There are various safety and convenience considerations, such as video surveillance, Blue Light phones, and residence hall phones.

Whether you charge or not, there are a number of different ways to approach technology cost allocation (by port, by traffic, by headcount, etc.). There is no “right” and “wrong” way to do all this – it is primarily a matter of what works best for you in the long-run (and, of course, what you can get approved). Whether you charge or not, our recommendation is to base IT cost allocations on the true costs of services as if IT were a stand-alone business responsible for its own profits and losses.

An appropriate cost allocation/cost-recovery algorithm must be:

- **Objective** – The “measurables” should be unbiased and the formula fixed in advance. (Okay, I admit that “measurables” is not a real word, but it is easier than saying “those things which you are measuring”.)
- **Simple** – It must be easy to perform the measurements, apply the formula and bill those who are going to pay for specific services (assuming billing is going to be done).
- **Transparent** – Concerned parties should be able to comprehend the logic and the formula and be assured that the values are correct and the formula appropriately applied.
- **Relevant** – Measurables should correlate with cost.
- **Manageable** – Easy to keep up-to-date as things change.
- **Reasonable** – Amounts recovered should not exceed full costs or if cross subsidizing is deemed appropriate or necessary, the logic should be understood.
- **Growth-oriented** – Easy to re-allocate costs as the network expands or services change.
- **Encouraging of desired behavior** - Approaches used should encourage behaviors that are beneficial to the institution and discourage those which are detrimental.
- **Viable long-term** – Continue to be applicable into the future. (Believe me, you don’t want to go through this more often than necessary.)

While charging algorithms vary, they generally fall into two categories -- IT Metrics (charge based on something related to IT services) and Non-IT metrics (charge based on something unrelated to IT services). Within each of these categories, there are sub-categories. These include:

- IT Metrics:
  - Charge by service
  - Charge by network connection.
  - Charge by traffic.
  - Charge by device.
- Non-IT metrics:
  - Charge by head-count.
  - Charge by “IT Tax” on budget, space, etc.
  - Charge by other non-IT metric (number of telephones, number of cars in the parking lot, phase of the moon, etc.)

Each of these approaches has its pros and cons and differently addresses the parameters that we laid out above. (See diagram below. A green means that the metric addresses the requirement; red means it does not; and yellow means that it might in some circumstances.)

Charge by:	Objective	Simple	Transparent	Relevant	Reasonable	Manageable	Supports Growth	Encourages Desired Behavior	Viable Long-term
<b>IT Metrics</b>									
Service	Green	Red	Red	Yellow	Yellow	Red	Green	Yellow	Red
Port	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red
Traffic	Green	Red	Red	Green	Green	Red	Yellow	Yellow	Yellow
Device	Green	Yellow	Green	Green	Green	Yellow	Green	Green	Green
<b>Non-IT Metrics</b>									
Head-count	Green	Green	Green	Red	Green	Green	Red	Red	Red
ITS “tax”	Green	Yellow	Green	Red	Yellow	Yellow	Red	Red	Red
Other	Yellow	Green	Yellow	Red	Red	Red	Red	Red	Red

Often it is prudent to subsidize charges. However, in that case, users should be aware that they are not paying full costs. That way, if the subsidies disappear, IT is not seen as raising the rates. A simple addition to the bill might state: “Your technology services cost \$xxx this month. Your charge is \$yyy. The remainder is covered centrally.”

One of the approaches which has gained popularity of late (and which was the subject of an ACUTA listserv post which gave rise to this article) is the headcount model. The approach is essentially that the fee for technology services is derived by dividing the total technology costs by the number of users. This fee can then be adjusted downward for the “non-knowledge worker” category (e.g.: maintenance workers, food service workers, etc.) and upward for power-users (e.g. researchers who need extra or beyond the standard services). This approach is attractive in that it is simple for IT to administer, simple for the consumer to understand, treats communications as a utility, and allows departments to consume as much or as little as they need.

However, the headcount in most institutions is stable or trending downward while the demand for technology and services continues upward. Therefore, this approach must include a formula for annual adjustment. It also assumes that all users in each category consume the same amount of resources, generate the same amount of demand, and use the same or equivalent services. There is no differentiation of services except job classifications which bear little correlation to network services. This approach does little to encourage or discourage behaviors which can negatively or positively affect network services and usage. Finally, the headcount approach amounts to a tax, and unlike a tax on tea, it does not allow the units being taxed any control or the ability to affect the tax.

Before you can implement (or even perform in-depth modeling of) a headcount approach, there are many decisions to be made. These include:

- Will the allocation be per FTE or per Employee?
- Are you planning to use differential rates? If so, how will you differentiate?
- Are you planning to use an “all-you-can-eat” model covering *all* technology services or to have the headcount charge cover only specified base services? If base services, what is included/excluded?
- What about specialized services like ACD, high-speed data links, etc.?

The further you get into the discussions, the more questions arise.

No matter which approach (or approaches) you select, it all becomes very philosophical – and political. You are talking about touching not one, but two, of the “third-rails” of higher education – budgets and departmental control. Any change is going to benefit some departments and adversely affect others. As such, a project like this is much more than just a technology funding project.

The good news is that the process (as painful as it might be) offers the opportunity to educate senior management and the campus community on what it *really* costs to deliver technology services and to firmly establish the value that technology has on campus. There is an increasing demand for technology services and resources due to the increased role of information technology. However, without significant thought to funding, IT will not be able to meet the long-term goals of the institution, implement new technologies, or even continue to adequately support the current technologies already on campus. That’s not a happy ending in anybody’s book.

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**Geoffrey C. Tritsch** is the Founder of Compass Consulting International. Mr. Tritsch is an expert in the unique voice, data, and video needs of large, non-profit organizations. He has worked in the telecommunications industry for more than fifty years. For the last 39 years, he has been an independent consultant specializing in the higher education, government, and health care markets. Mr. Tritsch also spent 11 years with New England Telephone Company in a variety of marketing, installation management, and technical positions. A highly respected lecturer for telecommunications seminars and association gatherings, he has published numerous articles in telecommunications industry magazines and journals. Mr. Tritsch can be reached at 978-

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