Implementing Life-Cycle Funding

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One of the fundamental information technology problems that all colleges and universities face is properly funding IT infrastructure so that it can be replaced in a timely fashion. Consider the following scenario. A campus finds that the level of discontent from faculty, students, and staff who need new, contemporary desktop computing equipment builds to such a level that one-time “miracle money” is thrown at the problem in the hope that it will go away. It does—for a time.
But in the background, Moore’s law relentlessly grinds away. Moore’s law states that the processing capacity of computers doubles every eighteen months. Meanwhile, each new release of software can require every bit of that increase in processor capacity. After three or four years, what was once brand-new, shiny, up-to-date equipment has fallen well behind state-of-the-art performance and in some cases can no longer run state-of-the-art software. So the discontent builds again and eventually reaches such a level that “miracle money” is once again thrown at the problem. And so it goes, year after year—like a scene from the movie Groundhog Day.

The detrimental effects of this cycle are considerable. Members of the campus community do not know from one year to the next where their next computers are coming from. It also wastes the time of administrators, who must agitate for funds to replace aging equipment. Faculty are distracted from conducting research and teaching, students from learning, and staff from supporting both. The multiple generations of hardware and software in the user base present a major support challenge. This is a classic illustration of IT cost dynamics—one in which cost avoidance for desktop computing equipment results in higher cost for support.

Desktop computers, not unlike other higher education IT investments, are commonly purchased out of “miracle money,” “patchwork financing,” or “budget dust.” These terms refer to funds that are left after other expenses have been covered. In many cases these funds represent one-time payroll savings accrued from vacancies. They do not show up in formal financial plans or budgets. The result of this practice is not inconsequential. In the information economy, the computer is a fundamental tool. Without the assurance of a funding appropriation to set standards and to establish a coherent plan for the deployment of computers, Planning and aggregation make large-volume purchases possible and offer the potential for major savings. Furthermore, life-cycle funding ensures a stock of computers, enabling an institution to take full advantage of enterprise software licensing agreements. However, campuses are not businesses, and desirable and rational though life-cycle funding is, only a few universities and some small colleges have been able to implement some version of it. A principal reason for this is that colleges and universities traditionally lack the central direction and the appropriate mandate to carry out a task of this complexity.

Since higher education institutions pride themselves on being places where reason reigns, surely there is a rational solution to this problem. In fact, American business offers such a solution. The answer is to identify an appropriate “life cycle” for a piece of equipment—that is, a period of time after which it will be replaced (say, three years)—assign an appropriate replacement cost (say, $1,200), divide that cost by the number of years, and put this amount aside every year (for this example, $400). A life-cycle period set at three years aligns with the usual time limit for equipment warranties and thus eliminates the costs of making repairs out of warranty. In three years, enough resources will have accumulated to buy a new piece of equipment. This is called life-cycle funding and is, in principle, very simple.

Life-cycle funding enables an organization to set standards and to establish a coherent plan for the deployment of computers. Buying and aggregation make large-volume purchases possible and offer the potential for major savings. Furthermore, life-cycle funding ensures a stock of computers, enabling an institution to take full advantage of enterprise software licensing agreements. However, campuses are not businesses, and desirable and rational though life-cycle funding is, only a few universities and some small colleges have been able to implement some version of it. A principal reason for this is that colleges and universities traditionally lack the central direction and the appropriate mandate to carry out a task of this complexity.

Procurement Strategies: Buy or Lease?

Ensuring the continuous replacement of computers at the end of their life cycle can be achieved through buying, leasing, or a combination of both.

Choosing the right procurement strategy is an individual matter. In making the choice, an institution should examine its technology environment, financial resources and policies, asset management, disposal policies, and so on. The advantages and disadvantages of buying and leasing are discussed briefly below.

Buy or Lease?

Many campuses acquire desktop computers through a straight-purchase arrangement. If this is financially feasible, and assuming it is done in a planned and concerted manner, buying affords maximum flexibility. Unlike leasing, purchasing makes it easy to upgrade or add on to selected inventory without renegotiating a contract. The institution is not tied to any given vendor for long periods of time. Indeed, vendors can be selected several times throughout the year to take full advantage of rapidly changing market conditions. Leveraged buying can save a lot of money while allowing users flexibility within the technical standards set by the IT organization. Typically, however, various departments and schools of an institution make sporadic and disjointed
that is unable to fund the full modernization of its inventory or equip each person might consider such financing options. installment-payment plans or leasing from vendors or commercial lenders.

Leasing

A growing number of colleges and universities are discovering that leasing is an attractive option. Major vendors currently offer several leasing options. The following are some examples:

- **Operating Lease** (also referred to as **fair market value lease**). At the end of the lease term, this agreement offers the options of buying the equipment for its then-current fair market value, returning the equipment, or continuing the lease.

- **Capital Lease** (also referred to as lease purchase agreement). Under this agreement, the lessee owns the asset after making a series of payments. Under a variant of this, the lessee pays a pre-stated percentage of the original cost to own the asset.

- **Loan to Buy** (also referred to as **$1 buyout lease**). This agreement enables the lessee to buy the equipment for $1 at the end of the lease term. The payments in a lease-to-buy agreement are typically higher than in an operating lease.

- **Technology Renewal Lease**: This guarantees the replacement of leased equipment after a predetermined period during the lease term. Usually a longer term lease is set (such as 60 months) but a renewal option is available at 12, 24, or 36 months. In some cases, the lessor also has the option to buy the old equipment.

Leasing has its advantages. Most companies offer up to 100 percent financing and flexible payment structures—monthly, quarterly, or annually. Many lease agreements contain “fiscal non-appropriation” clauses. This is an important feature that makes security for the debt a contingency of the annual appropriation of funds and not a general obligation of the issuer. Leasing thus enables an institution to acquire equipment without making a major financial commitment. At the same time, the purchased equipment lingered far beyond its useful life, requiring increased technical support and repairs. The cost of such support and repairs tends to negate the cost avoidance of not buying a new computer.

Leasing has other advantages. You can avoid equipment obsolescence by determining an acceptable life cycle for your equipment and by scheduling its replacement. Leasing allows you to standardize equipment. This is important when it comes to supporting the equipment. Solving a problem for one computer means, in effect, that the problem is solved for all the resources that are configured along the same standard. This translates into significant cost savings. According to studies on the total cost of computer equipment ownership, the initial cost of hardware is only a small component of the overall cost; the larger portion of the cost is dedicated to supporting the equipment over its lifetime.

With leasing, an institution also does not have to deal with asset disposal unless it decides to buy and own the equipment. The vendor typically comes in to de-install and replace the equipment. Most companies also offer installation and support services. This is an advantage to smaller campuses that do not have in-house technical talent. But it also benefits larger institutions that find themselves strapped to retain the today’s highly competitive technical job markets.

Individual institutional practices can affect how well a given strategy works. For example, one campus used both leasing and buying. In March 1998, institution’s financial policies required two-year leases to avoid having to categorize the equipment as a capital lease, subject to attendant requirements. The result was that the leased computers turned over too quickly while the purchased computers remained in use too long. The rigid installation and de-installation cycle of the leased computers, which were being cycled out at about the prime of their useful life, caused considerable disruption. At the same time, the purchased equipment lingered far beyond its useful life, requiring increased technical support and repairs. The cost of such support and repairs tends to negate the cost avoidance of not buying a new computer.

Central to the funding model was the assumption that on average, the schools were already spending around 50 percent of the annual amount that was required for life-cycle funding. Though arguably some, if not all, of these funds came from year-end cash surpluses and were not in the schools’ base budgets, sustained annual cash surpluses meant that there was room in the budget for this level of spending for life-cycle funding. Thus, the schools were required to recast their budget in the first year of implementation. To bring the total base funding level up to 100 percent, the schools were also required to gradually increase their commitment to 75 percent over five years, with each gradual increase being matched dollar for dollar by IUITS. However, to ensure that the full, annual life-cycle funding amount was available starting in the first year, IUITS also provided diminishing amounts of one-time funds to bridge the gap while the annual base was being built up.

Implementation of the program began in the summer of 1998 and was completed in the fall of 2002. It covered 15,000 computers, of which 10,000 required immediate modernization. The replacement value of the inventory was calculated at $20 million, with an annual life-cycle funding requirement of over $6 million.
Initial Assessment of the IU Program

The faculty, staff, and administration response to the IU program has been overwhelmingly positive. Without worrying about where their next computers will come from and under- terred by obsolete technology, the faculty, staff, and administrators can concentrate on the work of teaching, research, and service. UITS sets the technical standards for the university without mandating a “one size fits all” platform. Rather, the standards enable the mass customization of three basic categories of desktop platforms—PCs, Macintoshes, and high-end workstations. This leads to more realistic, coherent, and cohesive overall technology planning and deployment. Of course, departures from the standards can be made if there is good reason to do so, but in practice they have proved to be uniformly applicable across the full range of the university’s academic enterprises. Thus the schools retain the freedom to choose their desktop platforms while UITS is still able to set standards.

In collaboration with the Purchasing Department, UITS periodically solicits bids from multiple hardware vendors. UITS does not specifically require the schools to purchase from the bids awarded, but the majority do so because of the very attractive pricing that results from the high-volume, aggregated bid solicitations. This system has saved the university approximately $5 million in the first two years of the program. Faculty, staff, and students benefit as well by being able to take advantage of the university’s negotiated pricing for their personal purchases. Thus the institution as a whole has benefited economically.

Contrary to popular claims, a careful scrutiny of higher education finances will likely reveal that there is indeed money available for life-cycle funding of desktop computers. The formal budgets may not indicate it, but in most institutions some amount of recurring funding is already being spent on computers. Estimating the amount of this funding, however, involves calculations based on inventory figures. With the rapidly falling price of computer hardware and the rising thresholds of the cost of capital assets, computer purchases are rarely tracked in an institution’s capital asset management system. This is unfortunate, since most higher education institutions do not have good inventory tracking systems for non-capital assets. Thus, it is often impossible to determine the total number, the age, and the technical specifications of an institution’s stock of desktop computers. Moreover, unless the campus procurement system is able to code and generate reports on desktop computer purchases, the institution cannot determine its total investment in this piece of technology. Colleges and universities must address this need whether or not they plan to implement a global solution to life-cycle funding of their desktop computer inventory.

Another issue concerns governance. Some of the questions often asked by faculty and staff when discussing the segregation of annual life-cycle funding for their desktop computers are: “How do you make sure that those funds are actually set aside and used only for life-cycle funding of our computers?” and “What if my dean needs the money for something else?” These are excellent questions. Given the mounting financial challenges faced by today’s colleges and universities, it may seem impossible to guarantee that resources will always be used as intended. In dire times, institutional leaders have to make difficult decisions. But it is possible to set up a financial structure and mode of governance for life-cycle funding that will ensure the test of difficult circumstances. An institution can segregate the funds into well-defined account groups, budget the funds in specific computer-purchase expense categories, and have oversight from central administration, departmental/school administration, and the IT unit, assuming that the IT unit plays a major role in the design and implementation of the plan.

Critical Success Factors and Future Challenges

The successful implementation of such a large-scale program relies not only on securing the necessary funding. The program also needs to be managed in a comprehensive manner, with careful attention paid to every critical success factor. The program must have the support of key administrators. The financial model must be feasible and realistic, even for departments or schools with fewer resources. Computer users must immediately experience the benefit of...
Future changes in technology will necessitate the continuous assessment of any life-cycle funding program.

Implementation should thus rely on three key strategies:

- First, promote the plan initially to campus administrators, who can then be recruited to help promote the plan to others.
- Second, solicit early adopters to help jumpstart the implementation. Select the early adopters from among the financially disadvantaged departments or schools to help illustrate the feasibility of the financial model.
- Third, ensure adequate local technical support.

Future changes in technology will necessitate the continuous assessment of any life-cycle funding program that a college or university chooses to implement. The changing nature of the end-user devices (from desktops to laptops, to personal digital assistants [PDAs], to new evolutions of ubiquitous integrated communication and computing devices) and the changing technology of how and where computing power and storage are located and accessed will make such reassessment inevitable. But this will be a manageable problem. Colleges and universities that have life-cycle funding programs in place will have resolved a fundamental issue: the recognition that investment in information technology is not finite but is a recurring, ongoing commitment.

Notes
2. A repair not covered under warranty would have to be paid for by the institution, which will be simultaneously channeling funds into its life-cycle replacement funds. Opting for a three-year cycle would limit this double drain on the technology funding stream.
4. For a more detailed discussion of financing options for higher education institutions, see Debt Financing and Management (College and University Business Administration, 2000), 10–17. Examples of lease offerings from the major desktop vendors can be found at the following Web sites:
7. In our experience, the hourly labor cost for computer repairs ranges from $12 to $124 per hour depending on required response time and location of service. For extensive information on computer repair service companies, see American Teleprocessing Corporation, Hargadon Guides: Hargadon’s Directory of Used Computer Dealers and Repair, Parts, and Service Companies, October 1999.