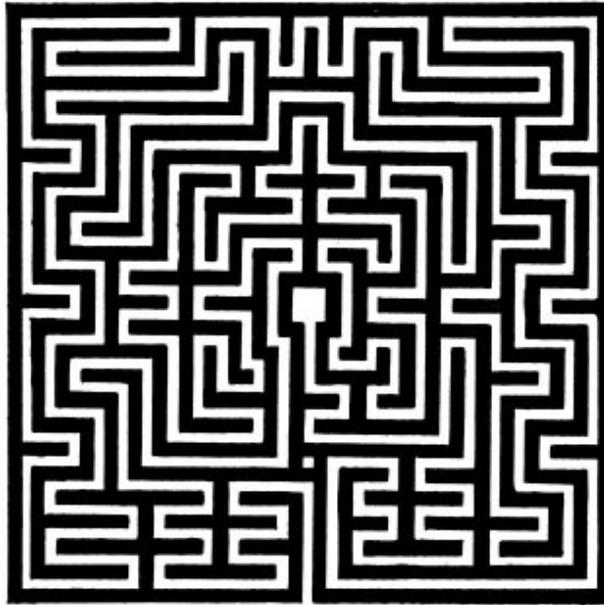


breaking



the **box**

restructuring computing across the university

BY JAMES J. O'DONNELL

A time will come when it is no longer possible to do what a dedicated band of Penn patriots did this fall: Come together to take the long view of the state of “computing” at Penn and draw from that view a coherent strategy for the future. “Computing” is like a virus that has been incubating for the last five decades since the ENIAC’s first media event. It began to be widely infectious a bit over a decade ago with the introduction of the personal computer, and now it explodes into ubiquitous use in every aspect of daily life. “Ubicomp” is what the wizards of the future at Xerox’s Palo Alto Research Center call it, and the evidence was perhaps in the greeting card playing “You are my Sunshine” that Vice President Gore showed us in his speech here on February 14—the tiny chip that held every bit as much computing power as the thousands of vacuum tubes of the original ENIAC.

After the explosion has had another decade to run, it will not be possible or desirable to think of “computing” as a single function that can be plotted and coordinated

throughout a complex institution. For the moment, it is still just possible to do that, and as we worked this fall, it was clear that we had come upon our task at a fortunate time. One of the first pieces of news we had on convening in September was that all measures of demand for computing service at Penn were up not just sharply but almost exponentially. First Call was struggling to handle its flow of reported problems even while the modem pool was setting new records for connectivity and reliability (20,000 connections on a day is now typical) while still giving too many busy signals.

Such booming demand for a service in an environment of level to constricted budgets looks in one way like very bad news. If the University’s budget is a zero-sum game, then every enhancement of computing service is a disenchantment of some other service. For an institution committed to taking its place as “the leading university of the information age” (President Rodin’s words in her keynote speech on ENIAC day), such tradeoffs are painful to imagine. *(continued on page 15)*

But a better perspective is possible if we let ourselves see and feel the power of the electronic information technologies for transforming what we do and how we do it. The most immediate and transforming such tool will be available this summer, when FinMIS, the new financial management system, comes online. If we fear change, there is plenty to fear in FinMIS—why rock the boat? Because FinMIS is not just a new software package, it's a new way of doing business. It ties

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responsibility and authority closer together than ever (good news in our responsibility center management economy) and gives us more, and more timely, financial information about more of what we are doing. Thus—if we are canny users—it extends our power to manage our resources effectively and creatively, while spending less time on the bookkeeping and more on pursuing our central missions of teaching and research.

Let that example stand for many. The central message of the restructuring task force was that in myriad ways, “computing” will be that kind of strategic and transformative tool for shaping the future of the University. The model we propose is one that begins the shift away from thinking about “computing” per se by resolutely putting the user at the center. How do users (student, faculty, librarian, or staff) take up their responsibility not merely to do their job but to revitalize the University? No member of the Penn community is merely a custodian of a University that has been handed to us. The University is us and its excellence consists of what we do. Our task force worked hard on “computing” but came away with a model that puts those boxes and wires firmly in the service of the creativity and the energy of the members of the wider community. There is

a clear call here at the same time for leadership that takes seriously the need for innovation across the board—innovation starting now with our financial accounting system, happening already in the Provost’s Classroom Committee’s first steps to create the high-tech classroom of the 21st century, and sprouting up hydra-headed all across the University. Ours is a model that places a high value on technology not for its own sake but for its protean capacity to lend itself to the vision and the imagination of Penn’s best people. (see sidebar on next page)

Professor JAMES J. O’DONNELL, who has taught in the Department of Classical Studies at Penn since 1981, took up appointment as interim Vice Provost for Information Systems and Computing on March 1. In the fall of 1995 Professor O’Donnell served as co-chair (with outgoing Vice Provost Peter Patton) of a University-wide task force on restructuring computing services.

task force to restructure computing services across Penn

In the fall of 1995, Provost Stanley Chodorow and Executive Vice President John Fry appointed a University task force to make computing services easier and more cost-effective for those who use them. The task force comprised more than 30 members of the Penn community, ranging from computer support personnel to administrative staff, faculty, and deans. Its charge was to design a new structure for organizing, staffing, and funding computing services across Penn.

Next steps

Consultation with leaders of Penn’s units continues. Pilot projects will test the new model. A steering group will guide and coordinate the pilots, drawing lessons and laying the groundwork for transition. ISC and other units are beginning the internal restructuring that will help make the model work.

Comments invited

Please send suggestions and comments to Linda May (may@isc.upenn.edu; 215/898-0005). For a fuller version of the text of the model, contact Linda May or see the task force Web site (<http://www.upenn.edu/restruct>).

a new model for computing services across Penn

A University-wide task force has produced a new model for computing services that will guide organizational change over the next few years. It's no magic bullet or guarantee of success. It offers instead a way of doing business that gives members of the community the chance to make Penn better and exposes each of us to the costs of bad decisions and the benefits of good ones. The model values organizational self-reliance even as it encourages confederation for the common good.

The user

The user is at the center of the model. Each person ideally has a local computing "home" and takes all computing questions there.

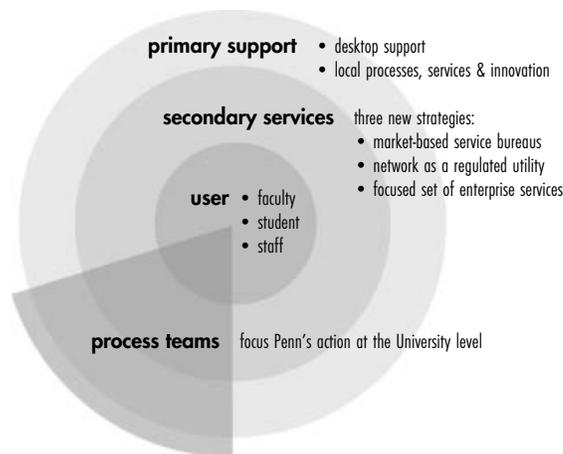
Primary support

Schools and administrative divisions are responsible for primary support. This includes frontline customer support and support of local processes, services, and innovations. Units can provide primary support themselves or buy it from other schools, from the central computing group, or from outside Penn. The task force urges that guidelines for basic primary support levels be set and that Penn institutionalize ways to keep those levels moving up.

Secondary services

Beyond this circle of primary support are expanding circles of secondary services—provided by schools, by ISC, or by outside vendors. But the map of services is irrelevant to the user: The primary support person navigates that landscape.

- **Market-based service bureaus.** Small businesses, or "service bureaus," will be set up where feasible. Not all secondary services will be delivered on a market basis; the intent is to establish, over time, enough of a marketplace to help control costs and encourage a focus on the customer. Service bureaus already exist at Penn. Wharton Reprographics is well known; Information Systems and Computing sells support-on-site, training, application development, and integration services and will scale up these businesses. A market may exist for additional services such as multimedia production or local area networking; any unit is invited to set up a service bureau in Penn's evolving economy.
- **Network as a regulated utility.** The task force recommends running Penn's network as a regulated public utility—with service-level agreements, campus-wide standards, and a "Public Utility Commission" or governing board, to keep it responsive. The principle here as elsewhere is to let the common business of the institution be managed in common as far as possible. As a utility, the network would be funded by a mix of allocated and direct charges, with specific funding strategies to be taken up by the PUC.



- **Focused set of enterprise services.** Some services help make the whole greater than the sum of its parts. Into this category the model puts standards and architecture, second-tier support, core administrative systems, data administration and information security, site licensing, and communication at the enterprise level. These services will be performed by ISC and supported by allocated costs. ISC will review each of the services it now provides, eliminating some and concentrating more heavily on others.

Process teams

The model offers a potentially powerful way for Penn to take action at the University level. A few cross-cutting processes will be funded directly and managed across traditional organizational boundaries. For the moment, Penn will concentrate on two or three high-priority processes, such as "academic innovation" and "student services." These processes can be considered "institutional bets" with high potential payback.

Costs

Cost-effectiveness, targeted investment, and giving units more control over their costs are aims of the model. In an area where investment is sure to expand, Penn wants to see money saved in some areas and reinvested in others. For example, as ISC reduces the number of things it does for allocated costs and cuts costs in other ways, funds can be returned to the Provost's budget. The task force strongly urges that these particular savings be spent strategically on forward-looking computing activities. Process teams are a prime target for these funds. We freely and frankly say that we cannot tell whether this model will be seen by individual units as costing them more or less. Rather, in an environment of exploding demand, the model will give units more control over their costs. The model tries to unite responsibility and authority where they have grown apart, to reveal real costs where they have become obscured, and to return choice to purchasers where it has been eroded.