

**Using Information Technology to  
Achieve the Strategic Goals of  
Rutgers, The State University of New Jersey**

**Appendix 5: Report of the Governance Subcommittee**

## 1. Executive Summary

The ITSPC Governance Subcommittee has examined and developed recommendations in three main areas: IT Planning and Governance Structures, IT Budgeting and Funding Models, and IT Service Models. Recognizing the importance of IT to fulfillment of the research, teaching, and service missions of the University, and based on the best practices of other universities, the Governance Subcommittee proposes the establishment of an IT governance and planning structure that will continue strategic planning for IT at Rutgers after the completion of the work of the Information Technology Strategic Planning Committee. The key to the success of this governance structure is that it includes an IT policy and planning group that has approval authority for major IT investments and responsibility for setting funding priorities. In order to have approval authority for major IT investments, this recommendation requires that the highest level administrators of the University be members of this group or meet periodically with them. Details of a proposed committee structure are provided in the body of this report.

On the issue of budgeting and funding models, the key recommendations of the Committee are that (1) a replacement cycle be established for each of the different components of the technology infrastructure (hardware, software, wiring); (2) budgeting include ongoing operational costs as well as new implementations; (3) charges for IT services reflect actual costs and not include surcharges to fund other University initiatives, since this distorts the economics of IT decision making; and (4) hardware, software, services and support practices be standardized when it allows more effective and efficient use of resources and to achieve economies of scale, and not when it adds unnecessary constraints and complexity to unit IT decision making.

On the issue of IT service models, the main recommendations are (1) that the OIT work with the newly created governance committees to develop recommended approaches for system management, build communities of technical staff around appropriate topics, e.g., desktop management and server administration, and develop ways for its staff to work more closely both with technical staff in units and with unit leadership, such as deans, directors, and key faculty. We also recommend (2) investing in infrastructure for building distributed applications, and (3) paying particular attention to the increasingly important areas of security, privacy, and data integrity.

Finally, as a general planning and governance issue, the Governance Subcommittee strongly recommends that administrative data be considered an institutional resource, to be shared among all appropriate users (recognizing issues of confidentiality and privacy), and not the property of the office responsible for maintaining it.

## 2. Planning Process

The ITSPC Governance Subcommittee formed three subgroups, each responsible for initial proposals in the three main areas under discussion by the Governance Subcommittee. These subgroups were: (A) IT Planning and Governance Structures (L. Kennedy, C. Martancik, S. Rabinowitz, and J. Tricriaco), (B) IT Budgeting and Funding Models (R. Falk, J. Boyle, H. Szymanski), and (C) IT Service Models (C. Hedrick, W. Crown, H. Hirsh, and S. Russell). These initial proposals were then discussed and refined by the entire Governance Subcommittee, and this report represents the overall view of the Committee.

To learn what other universities are doing with respect to the issues of concern to this Subcommittee, the Governance Subcommittee first reviewed a number of Educause reports and case studies. Educause is a large nonprofit association (2,000 member institutions and 15,000 individual members) focused on information technology in higher education. The Educause Center for Applied Research (ECAR), which generated a number of the reports the subcommittee reviewed, conducts research and analysis on information technology topics and best practices across higher education institutions.

Through these reports and case studies, and also professional associations, the subcommittee identified three CIO's who are leaders in the field and prominently recognized for their best practices and expertise in the topics the committee was addressing. These individuals were invited to Rutgers for an onsite meeting and included Fred Siff, VP and CIO, University of Cincinnati (April 7, 2005), Marilyn McMillan, CIO, NYU (April 12, 2005), and Jim Davis, Associate Vice Chancellor IT UCLA (April 15, 2005).

The opinion of the Governance subcommittee was that, based on the needs of Rutgers, UCLA and the University of Cincinnati provided us with some of the best input on governance structures. Descriptions may be found at the following web sites [http://www.oit.ucla.edu/TestArea/it\\_governance.htm](http://www.oit.ucla.edu/TestArea/it_governance.htm) and <http://www.ucit.uc.edu/committees>.

As a result of these meetings, the Governance Subcommittee developed a series of recommendations related to the leadership of IT and the role that all parts of the University can play in setting strategic directions for IT at the University. Information about the results of the Committee's deliberations in each of the three main areas is provided below.

### **3. Description of Current State**

#### (A) IT Planning and Governance Structures:

There have been a considerable number of computer advisory committees at Rutgers. Some of the most recent are the New Brunswick Advisory Committee for Instructional Computing (ACIC), the New Brunswick Computer Advisory Committee (NBCAC), the Newark Instructional Computing Initiative Committee (ICI), the Newark Information Technology Advisory Committee (NITAC), the Camden FAS IT Committee, the Information Technology Project Governance Committee (ITPGC), the Information Technology Coordinating Committee (ITCC), the Computing and Information Policy Advisory Committee (CIPAC), and now the Information Technology Strategic Planning Committee (ITSPC). The Committee discussed the structure and some of the recommendations of these committees (both those that were implemented and those that were not implemented) in order to understand what does and does not work well at Rutgers.

The ACIC had been in place for many years, but with the new All Funds Budgeting process, there has been a decision to end the committee and distribute the funds directly to decanal units. Of the university-wide committees mentioned above, besides the ITSPC (scheduled to finalize a strategic plan in April, 2006 and thus complete its task), only the ITPGC is currently in place. The ITPGC has two subcommittees: student service systems and business and financial systems. The prioritization of student service systems is well under way. Twenty project requests have been reviewed and prioritized. The business/financial subcommittee will begin to prioritize projects after there is further clarification on the direction of an ERP system. The subcommittee chair and a subgroup of the business/financial subcommittee are in the process of investigating the next step in the adoption of an ERP.

With the creation of a new position for VP of Information Technology last year and the restructuring of Rutgers University Computing Services (RUCS), the Office of Information Technology took on a broader role of "ensuring the effective use of technology and the equitable implementation and integration of information technology (IT) resources across the university" (Office of Information Technology restructure announcement, June 24, 2004). Although this broader role was envisioned, the focus continued to be on the University's centralized IT needs while planning for IT needs in departments/units was left to the head administrator in each department/unit. There seems to be little coordination of IT planning among units across the University. A major problem in the past has been the lack of coordination of computer activities in departments with central efforts. Thus universitywide IT planning is disjointed rather than holistic where it can provide increased value and opportunities. More recently, there have been improvements in coordination in some areas, but this issue still remains a considerable challenge.

(B) IT Budgeting and Funding Models:

Using the Educause Core Data Service, the Subcommittee compared Rutgers central information technology funding to a peer group of 18 large public doctoral level institutions, including: Indiana University, Iowa State, Ohio State, Purdue, Texas A&M, UC Berkeley, University of Michigan, University of Maryland, and University of Virginia. While the mean central IT funding for the peer group was \$48,473,000, Rutgers central IT funding is significantly below this average at \$34,539,000 or 29% below the peer group. Although equivalent data for distributed IT funding is more difficult to obtain, based on the available samples, it appears that Rutgers is again below the average of our peer group of institutions.

Funding strategies for evergreening are also an increasing challenge for institutions as software, equipment, wiring, and electronics age. The renewal of the capital plant supporting the campus network is one such example. Using the same peer group, the subcommittee found that over half of the institutions (55%) had a funding model that included capital plant renewal for the network. This is not the case at Rutgers for the network or technology in general.

Currently, the OIT seems to be one of the few organizations/units with a specific budget for IT. IT spending in departments and units often relies on whatever funds are available after other needs are met and especially on onetime funding that is available through the University or externally through state initiatives such as ELF and unit fundraising efforts. Given the difficulty of finding lines and salary dollars for new staff lines, IT staff have been added to departments almost exclusively by converting other staff lines in the departments.

Because of the reliance on onetime funding and the uncertainty in budgets beyond the current year, there is little opportunity to plan for future IT expenditures, such as replacement of each of the different components of the technology infrastructure (hardware, software, wiring). Current budgeting does not include either ongoing operational costs or new implementations.

One result of the difficulty in planning for IT expenditures at Rutgers is that standardization of hardware, software, services, and support practices has been difficult to achieve, despite the fact that standardization can allow more efficient use of resources and the ability to achieve economies of scale. A subsidized computer purchase program was initiated to give incentives for standardized computer purchases, but it had limited effect since it was not sustained and did not include administrative units.

Although IT is a pervasive part of the University and the total dollars spent on IT are substantial, it does not appear to be a key part of general University planning. As a self-contained unit, planning within the OIT has been more successful. However, since about two-thirds of all IT expenditures and about half the IT staff lines occur in units outside

of OIT, the lack of incorporation of this activity in any general University IT planning is a significant problem.

(C) IT Service Models:

IT staff is equally divided between OIT and departments and units. In recent years, there has been considerable discussion about the proper division of responsibility for support of IT between central and departmental IT staff. As IT changes, the role of central services has and will continue to change. A major ongoing issue is the process by which IT priorities and services are determined. The ITPGC is a significant step forward in involving the University community in this decision making process. Previous advisory committees have also been consulted on this issue, but this consultation has had limited success. The coordination between central and department IT staff has also been a topic of considerable discussion. There are various user groups that facilitate meetings between OIT and department staff to discuss issues of common concern (e.g., microcomputer and Linux/UNIX support). However, only a small fraction of department IT staff attends these meetings. Across departments, there has been some limited cooperation of IT staff, mostly on an ad hoc basis (e.g., involving Mathematics, Computer Science, and DIMACS). A number of years ago, based on a support model developed at Indiana University, the University initiated the Livingston Pilot Project to test a two-level support model in which department unit computer specialists were assigned a specific person within OIT (then RUCS) to deal with higher level IT problems they could not solve by themselves. The OIT staff member then took ownership of the problem until it was resolved. An evaluation of this project found it to be very successful, and the possibility of expanding it to other units and campuses was discussed. However, lack of IT staff resources prevented this from happening.

#### **4. Description of Future State**

(A) Planning and Governance Structure:

Since IT is so crucial to the effective fulfillment of the mission of the University and the funds spent on IT are so substantial, it is clear that the University must develop an effective structure for planning and prioritizing IT expenditures.

Based on the best practices of other universities as detailed in Educause reports and especially the detailed information provided by the visits of the CIOs, the Committee developed a proposal for an IT Governance and Planning Structure for Rutgers. A key element in developing this proposal was reaching a decision on the extent to which an important recommendation (cf. Funding Information Technology: An Educause Executive Briefing, December, 2003) should be incorporated into the governance structure, namely:

"The campus governance structure should include an IT policy and planning group with approval authority for major new IT investments and responsibility for setting funding priorities."

In order to have approval authority for major new IT investments, this recommendation requires that the highest level administrators of the University be members of this group. If key decision makers in the University are not involved in IT planning at an early stage, then advisory committees develop plans lacking buy-in from these decision makers. This often results in the lack of any high-level commitment to a project, and especially to a lack of funding for the project. Although the Executive Vice Presidents and Newark and Camden Provosts are not members of the committees proposed below, other high level administrators that report to them are members (and in most cases chairs of the committees), and the proposal recommends meetings of the EVPS and Provosts with the highest level IT advisory committee twice a year.

As a way of ensuring that the case for IT is presented in a forum where it receives executive scrutiny and is subject to the highest level of University planning, we recommend that the CIO be added to the President's cabinet. This recommendation is based on statements appearing in several Educause reports.

For example, the Educause Executive Briefing referenced above states

“The campus IT leader can be most effective if she or he has a seat on the executive cabinet or council.”

While perhaps an obvious statement, the Governance Subcommittee wants to stress the importance of ensuring that academic as well as administrative computing are both considered sufficiently at the highest level of the administration. Whatever structure is put in place to facilitate this must allow for direct input from the units and departments reporting to both the administrative and academic sides of the University.

Finally, as a general planning and governance issue, the Governance Subcommittee strongly recommends that administrative data be considered an institutional resource, to be shared among all appropriate users (recognizing issues of confidentiality and privacy), and not the property of the office responsible for maintaining it. Otherwise, departments and units will continue to try to maintain their own versions of the data they need to conduct their business, resulting in a huge waste of University resources.

### **Specific Proposal for an RU IT Planning and Governance Structure:**

Recognizing the importance of IT to fulfillment of the research, teaching, and service missions of the University, the Governance Subcommittee proposes the establishment of the following IT governance and planning structure, to begin after completion of the work of the ITSPC, expected in spring, 2006. This structure provides for the involvement of the University community in decisions about IT policies and priorities and ensures that recommendations to the University's highest level administrators on these issues have the backing of the University community. The involvement of key administrators on the relevant committees (especially as committee chairs) is necessary to ensure that

the activities and initiatives put forth by this structure are recognized as having the backing of the University community and the endorsement of the institution's senior administration. The overall direction will be set by a newly formed coordinating committee, four subcommittees that will operate under its direction, and a financial and budgeting support committee that will provide support in these areas to the coordinating committee and four subcommittees. These committees will have representation from NB/Piscataway, Newark, and Camden and will operate under the leadership of the CIO.

**IT Executive Coordinating Committee (ITECC):**

**Chair:** Chief Information Officer. In models presented by visiting CIOs from other universities, the CIOs had strong leadership roles in coordinating their advisory committees. We recommend that the CIO/chair of this committee present the strategic vision of the coordinating committee to the President's cabinet and bring their decisions back to the committee for deliberation and action.

**Membership:** The four subcommittee chairs, the four subcommittee vice chairs, the VP for Budgeting (representing the University Budget Committee), a representative of the New Brunswick Council of Deans, and senior administrators (with knowledge of campus priorities and budgets) from Camden and Newark (one each) to be appointed by the Camden and Newark Provosts.

**Reporting Relationship:** The ITECC reports directly to the two Executive Vice Presidents and the Newark and Camden Provosts. A joint meeting between these individuals and the ITECC is recommended at least twice per year.

**Charge:** To set strategic direction for IT and to make recommendations regarding prioritizing of IT spending and University IT policies, and the yearly submission of a proposed rolling 5year budget for IT spending, including both expenditures by the Office of Information Technology (OIT) and units outside the OIT. The committee will also take upon itself the task of examining areas that need attention within IT throughout the University, possibly then delegating responsibility for initial proposals to one of the subcommittees described below.

The CIO would have the responsibility of ensuring that (1) all important IT issues, both central and distributed, are part of the charge of at least one of the subcommittees; (2) there is coordination of the agenda and staff support for all subcommittees and the executive committee; (3) the President, the EVPs, and the Provosts are kept informed of committee activity; (4) all committee elements are provided necessary technical and budgetary expertise and comparative data (the budget/financial subcommittee should be established to aid in this task); (5) communication procedures are established so that ideas and proposed actions are shared among and between subcommittees; (6) there is

regular communication with decanal units and directorates so that their needs are considered by the committee.

**Subcommittees:** Four subcommittees reporting to the ITECC would be established, each with a Chair and a Vice Chair and subject area specialists. Membership on these committees would be decided by consultation among the two EVPs and the Newark and Camden Provosts with input from deans and center directors, the OIT, the University Librarian, and appropriate University bodies, such as the University Senate, Faculty Councils, and student groups. Selection of members will be based on interest and experience in IT issues with the aim of representing the institutional constituencies (administrators, faculty, staff, and students). It will not be possible to have representatives of all units on each subcommittee.

The four proposed subcommittees are: (1) Administrative, (2) Research, (3) Instruction and Academic Services, and (4) Infrastructure and Support. These committees would develop IT plans and policies, prioritize IT projects within their specific functional areas, and make recommendations to the IT Executive Coordinating Committee.

**Administrative Committee**

Chair: Associate VP Human Resources

Vice Chair: faculty or staff member representing distributed administrative activities.

We recommend that the ITPGC be integrated into the Administrative Committee.

Some issues that this committee is expected to discuss and make recommendations about are: Enterprise/supplemental systems in all business (e.g., financial, human resources, grant accounting) and student areas.

**Research Committee:**

Chair: VP for Research

Vice Chair: faculty member

Some issues that this committee is expected to discuss and make recommendations about are: IT infrastructure for research, central vs. unitbased resources, library services for research.

**Instruction and Academic Services Committee:**

Chair: VP for Undergraduate Education

Vice Chair: faculty member

Some issues that this committee is expected to discuss and make recommendations about are: enhanced classrooms, wireless deployments, online courses, learning technologies, course management systems, online resources and libraries, public computer labs, instructional microcomputer labs, department computer labs, specialized

software for instruction, IT training, support services for faculty and students, and accountability for the student computing fee.

**Infrastructure and Support Committee:**

Chair: CTO of the University

Vice Chair: faculty or staff member from outside OIT

Some issues that this committee is expected to discuss and make recommendations about are: Network (wired and wireless), security, privacy, and data integrity, voice and video, desktop computers, system management, and infrastructure for distributed data applications. Because some of these areas require substantially different expertise, we anticipate that it will be appropriate to set up further subcommittees to deal with separate issues such as system management, infrastructure for distributed data applications, and security, privacy and data integrity.

In addition to the four main subcommittees discussed above, we recommend the formation of an additional committee, whose role is to provide support for the other committees.

**Budget/Finance Support Committee:**

Chair: VP for Budgeting

ViceChair: Associate Provost, Dean, or faculty member

The intent of this committee is to provide support to the ITECC and four main subcommittees on the issues of budget and financing of IT projects, investments, and services including alternative models and strategies.

**Benefits of this Committee Structure:**

1. IT policies and projects will be decided based on the needs and goals of the University, not just the needs and goals of the Office of Information Technology.
2. Decisions about IT projects will be made with a holistic view of the University in mind, since the committee members provide a broad representation of the University, including both academic and administrative and all three campuses.
3. The Committee structure involves key administrators with knowledge of budgets and finance at all levels of the planning and prioritization process. Thus, the final recommendations of the ITECC are made with knowledge and awareness of budgets and funding and with a high level of University backing and support.
4. By having the full backing of a representative IT advisory structure, the CIO and IT Executive Coordinating Committee will be in a much better position to build a business case for the funding of IT projects.

## **(B) IT Budgeting and Funding Models:**

1. The Committee makes the following recommendations in the area of budget and funding models.
2. A replacement cycle needs to be established for each of the different components of the technology infrastructure (hardware, software, wiring). Leasing should be investigated as one mechanism for achieving this goal.
3. Budgeting needs to include ongoing operational costs as well as new implementations. The cost of staff to support technology must not be underestimated, and should be an essential consideration for any new implementation strategy.
4. There is a need to have realistic assessments of university-wide changes required to leverage IT investments.
5. Standardization of hardware, software, and support practices allows more efficient use of resources and the ability to achieve economies of scale.
6. Charges for IT services should reflect actual costs and not include surcharges to fund other University initiatives, since this distorts the economics of IT decision making. Currently, this does not seem to be the case in University charges for phone systems.

## **(C) IT Service Models**

The Committee makes the following recommendations in the area of IT service models.

1. The Infrastructure and Support subcommittee should develop recommended approaches for system management. Because of the diversity of needs in the University, a single approach will probably not work for all units. However a small number of approaches would work as models for most areas. Examples would be use of "terminal servers" an approach that places most applications on a small number of servers and use of automated tools such as standard images for administering desktop systems. These approaches should be documented and supported through training and consulting.
2. The technical work resulting from recommendation 1, together with changes in management resulting from All Funds Budgeting, are likely to result in changes in the distribution of responsibility among individual units, central IT, and intermediate units such as colleges and vice presidential areas. Because it is not yet clear how this will develop, rather than making specific recommendations for change, this committee recommends that the CIO together with the Infrastructure and Support committee be charged with monitoring this area, and making recommendations for the proper relationship among various levels responsible for IT support.

3. We recommend that OIT work with the Infrastructure and Support committee to build communities of practice for technical staff around appropriate topics, e.g., desktop management and server administration. In particular, the Committee recommends the creation of a framework for developing technical architecture, involving a set of working groups that have both OIT and distributed staff. It is noted that several communities of this sort already exist. However, participation is not as high as it needs to be. OIT and members of the governance structure will work with technical staff and their managers to make sure that activities of the communities are relevant to all staff and that management understands the importance of having all staff participate in them.
4. We recommend that OIT, working together with the new governance structure, develop ways for central IT staff to work more closely both with technical staff in units and with unit leadership, such as deans, directors, and key faculty. Specific OIT staff should be responsible for maintaining contact with each academic and administrative area. The term "area" is intentionally ambiguous. Ideally every unit, down to the departmental level, would have a central IT liaison person familiar with their needs. This is probably not practical with current staff. Thus it may be necessary to focus on decanal units and vice presidential and provostial areas, as well as clusters of disciplines with similar needs. There are several goals, including providing better channels for support, helping OIT make sure that its services are relevant to its customers, and providing guidance for units in the use of IT.
5. We recommend investing in infrastructure for building distributed data applications. This includes areas such as services to provide secure access to data for distributed applications, identity management, authentication, and distributed security. Efforts should be guided at the policy level by the Infrastructure and Support committee and at a technical level by an architecture committee consisting of senior technical staff from OIT and key administrative and academic units. It is critical that all departments and units that need central data are able to obtain it. Otherwise, they will continue to maintain their own duplicate databases, an extremely wasteful approach that is now the norm.
6. Because of the increasing importance of security, privacy, and data integrity, we recommend that the Infrastructure and Support Committee pay particular attention to these areas, with the assistance of a technical architecture committee for security, privacy, and data integrity.

### **Issues Needing Further Discussion:**

1. How will the 5year proposed rolling budget be determined? What expenditures outside the OIT will be included? While central review may lead to economies of scale and avoid duplication of effort, this needs to be balanced with local control of some local expenditures.
2. There is a lack of formal relationship between IT committees and other committees and groups at the University. How can duplication of effort be avoided?
3. How should distributed IT be planned (e.g., should all departments and units be asked to file IT plans)?
4. What are the sources of IT funding at Rutgers, how is it distributed, and how does this compare to our peer institutions?
5. How much are we spending on administrative computing, research computing, and instructional computing (both central and departmental/unit) and how does this compare to our peer institutions?
6. Which IT areas should be funded/planned centrally, and which should be funded/planned at the department or unit level?
7. What is the impact of "All Funds Budgeting" on IT funding?
8. What are other possibilities for IT funding (e.g., fee for service, central fundraising)?