

The strategic plan for North Carolina State University identifies ten critically important areas for investment in the next five years. Excellence and leadership in information technology will be critical to the success of all ten institutional priorities, especially “Develop a faculty and staff of the highest quality,” “Build research and graduate and professional programs aggressively in proven and emerging areas,” and “Strengthen the university’s core infrastructure.”

Unfortunately, NC State currently lacks coherent goals for information technology. There are no comprehensive, coordinated plans or principles in place to develop and pursue such goals, no individual charged with overall responsibility for information technology, and few university-wide mechanisms to promote the coherence, effectiveness and efficiency NC State needs in this domain. Two questions arise:

- Is it time for NC State to create a central position overseeing its information technology (IT) efforts?
- If so, what should the scope of the position be, and what kind of individual should occupy it?

At Chancellor Oblinger’s request, Provost Nielsen and Vice Chancellor Leffler appointed an IT Scoping Team to address these questions based on the data, experience, and knowledge team members brought to the table. The team comprises Zachary D. Adams, an undergraduate Senior; Kristin A. Antelman, Associate Director for the Digital Library; Samuel F. Averitt, Vice Provost for Information Technology; S. Keith Boswell, Director of Information Technology, College of Engineering; John M. Blondin, Professor of Physics; Barbara L. Carroll, Associate Vice Chancellor for Human Resources; Kenneth Esbenshade, Associate Dean & Director of Academic Programs, College of Agriculture and Life Sciences; Steve W. Keto, Associate Vice Chancellor for Resource Management & Information Systems; Tom K. Miller III, Vice Provost for Distance Education & Learning Technology Applications; and Robyn Render, Vice President for Information Resources and Chief Information Officer, University of North Carolina System.

Two external consultants guided the team’s deliberations: Greg Jackson from the University of Chicago and Jack McCredie from the University of California.

### Findings

1. *Information technology plays an increasingly central role in the institutional eminence and effectiveness of NC State.* This stems partly from the university’s aspirations to be an IT leader within the UNC system, partly from the direct importance of IT to the research, academic, and outreach activities of a university with a strong science, technology, engineering and math focus, and partly from the central role IT plays in the day-to-day work of the university community.
2. *The efficiency and effectiveness of IT administration at NC State fall short of what the university requires.* NC State currently distributes responsibility for information technology across several central, college, departmental, and local entities. These have diverse reporting lines, staffing, and resources. General good will and collaborative spirit prevail among IT entities and staff across the university. However, divergent goals, reporting, resources, and cultures impede coherence. Divergence induces more duplication, inconsistency and incompatibility than the university can afford. Campus constituencies appear generally satisfied with NC State’s IT capacity, especially given limited resources. However, IT has evolved organically, opportunistically, and in silos, rather than grown strategically over

time. As a result, the university has opportunities to deploy and use its IT resources more efficiently and effectively.

3. ***Most NC State units and users believe overall budgets and resources for IT are inequitable, and perhaps inadequate.*** Campus units and constituencies perceive inequities in the allocation of IT resources. Central IT groups, college units, researchers, students, and general users all think that others – or someone else’s services – are getting more resources. Some also believe that the university under invests in IT. They ascribe all this variously to years of budget cuts and freezes; to administrative inefficiency, waste, and duplication; to state and system issues; or to the absence of an IT advocate at the senior level. We cannot tell which, if any, of these perceptions are valid. That doesn’t matter: the perceptions themselves translate into dysfunctional suspicion and circling of wagons.
4. ***Creating a central position risks centralizing activities better left decentralized.*** The chief worries are that centralization will disrupt activities that now function well, that it will bring rigidity and standardization to domains better served by flexibility and idiosyncrasy, or that resources will be diverted from those that have chosen to invest in IT to those that have chosen to invest in other areas.
5. ***Defining the boundary between centralized and decentralized responsibility is important and difficult.*** Infrastructure such as networks, machine rooms, shared servers, and mass storage clearly lends itself to centralization. The content handled by IT-based systems, such as who should be paid what or the substance of syllabi, clearly doesn’t. In some cases applications belong on the central side of the boundary, such as campus-wide email and calendaring support, but in many cases applications are also the stuff of administration, teaching, research or academic support. The border may be different for administrative and academic activities. It may even vary within those domains.

### **Recommendations**

1. ***Create a central position with general responsibility for information technology.*** This position should have direct management authority over a set of well-defined IT entities and activities. It should advise and coordinate IT activities outside its direct authority. It should represent the interests of the university IT community in central administrative, budget, and policy venues.
2. ***Rank the new position at a high level.*** For effective authority and influence, the position should carry a Vice Chancellor title. It should be part of the Executive Officers group that meets with and advises the Chancellor. It should play a formal role in major resource-allocation and policy decisions at NC State, even those that do not involve IT. We suggest that the position be called “Vice Chancellor for Information Technology,” “Vice Chancellor and Chief Information Officer,” or some variant on these. As a shorthand placeholder, we call the new position “VCIT”.
3. ***Assign extensive direct management authority to the new position.*** The Information Technology Division (ITD), which currently reports to the Provost; Enterprise Technology Services and Support (ETSS) and Enterprise Application and Database Services (EADS), which currently are part of Resource Management and Information Systems (RMIS) under the Vice Chancellor for Finance and Business; and Communications Technologies (ComTech), which straddles the line between ITD and RMIS, should all report to the VCIT.
4. ***Discuss additional responsibilities, services, and entities that might usefully be centralized.*** These collaborative discussions must focus on value propositions. They should explicitly

consider why other activities and services have been kept distinct (for example, some IT efforts in DELTA, Human Resources, the Libraries, Registration and Records, or the Colleges), and whether those reasons remain compelling. It is important to evaluate the benefits that may accrue to the university community as a whole *vis à vis* the costs centralization may impose on current constituencies.

5. ***Merge central IT units into a single organization.*** To the maximum extent possible, ITD, ETSS, EADS, ComTech, and other centrally-managed entities should rapidly become one organization, rather than separate groups reporting to the same person. Implementing this will entail considerable reorganization across units differing in priorities, organizational culture, and many other ways. Reorganization must be done with a great deal of sensitivity to existing differences.
6. ***Give the new position strong influence over substantial IT entities and resources that fall outside its direct authority.*** These include the IT activities of other central entities that either serve the campus at large or form part of the campus IT infrastructure. Mechanisms for strong influence might include university-wide IT advisory groups and/or specific oversight or consultation requirements associated with budget, hiring, or procurement processes. The success of the VCIT depends critically on how well the relationships with non-central IT entities are negotiated, described, and implemented.
7. ***Establish appropriate advisory and governance mechanisms to ensure productive interaction between constituents and customers and the new position.*** We recommend three formal advisory groups: a standing committee on IT for broad university representation (in effect a reconstituted University IT Committee), an IT-management team that establishes priorities for administrative application development (senior representatives from the Provost's Office, Graduate School, and Finance and Business), and an IT-Leadership advisory group comprising college and unit IT leaders. The VCIT should serve on the University Research Committee. Deans and Vice Chancellors should have regular meetings, perhaps including their senior staff, with the VCIT. Finally, the university's visiting committees or other external review processes should extend to IT.
8. ***Search nationally to fill the new position.*** It is important that the successful candidate have broad experience with the kind of integrated IT oversight and management we recommend, understand the mission and challenges of land-grant universities, and come into the job with a fresh perspective. To maximize the likelihood of success, current budget and resource levels should be clarified and concrete decisions made on the authority and scope recommendations above.
9. ***Review progress after a suitable period.*** The goal of the review should be to reassess the Scoping Team's findings in light of actual experience, not to evaluate the job performance of the VCIT. The review should include both internal and external expertise. Our recommendations represent a collective set of judgments and best guesses about how NC State should move its information technology forward. Within a year or so it should be clear which recommendations were sound and which not. It will be important to assess this formally, and to make corrections.

### **Search**

1. ***The successful candidate should have an appropriate advanced degree and at least five years of relevant IT management experience.*** He or she must have a broad and deep conceptual understanding of how technology can serve the multiple teaching, research, and out-

reach missions of research-extensive, land-grant institutions like NC State. The successful candidate will have experience balancing the IT demands of administration, teaching, research, and outreach; creating and promoting a clear IT vision that supports these missions; bringing together distributed, disparate and disconnected groups, resources and constituencies; implementing clear policies, processes, and accountability; leading creative, productive, and effective change in a complex, politicized organizational environment; generating and leveraging resources; establishing strategic partnerships and industry alliances; managing IT organizational infrastructure over a wide range of technological applications; addressing finance and business issues; and building and retaining a strong and adaptable IT staff.

2. *The successful candidate must approach the job in a collaborative spirit.* He or she must draw disparate entities together, provide a strong vision for future innovation and improvement efforts, perceive technical and organizational possibilities that others may not, and collaboratively motivate staff and manage processes to realize those possibilities. This entails leading campus-wide conversations to develop, refine and maintain principles and plans for IT progress; setting and sequencing priorities in a resource-constrained environment; setting, managing and influencing expectations; promulgating and selling ideas in a manner that promotes buy-in; following through on decisions even without complete consensus; communicating effectively in person and in writing; inspiring confidence, promoting and maintaining a strong service orientation among IT staff; engaging national organizations and initiatives in ways that benefit NC State; and appreciating broader IT developments while maintaining campus needs as the top priority.

### **Next Steps**

It is optimistic, we think, to expect that a new Vice Chancellor can be seated before January 2008. If the Chancellor, the Provost, and the Vice Chancellor for Finance and Business accept these findings and recommendations, the next steps are posting the job, organizing the search, and perhaps engaging a search consultant.

As the search gets underway, it will be important to assemble comprehensive data on current IT services, activities, infrastructure, staffing and budgets at NC State. These data should be widely shared among interested parties on campus and should be set against data from other institutions, for example through the EDUCAUSE Core Data Survey. This will enable the search committee to provide relevant information to candidates and enable them to make informed decisions regarding the likelihood of success.

We suggested above that about a year after the VCIT arrives will be a good time to review the implementation of the new position and correct its course if necessary. It is critical to understand that creating a senior IT position at NC State represents a dramatic and symbolic departure from the past. The scoping team's recommendations must be taken as guidance rather than prescription. Therefore, the appropriate metrics for the first-year review must center on progress rather than achievement.

We believe that these findings and recommendations fulfill the charge to the IT Scoping Team. We appreciate the opportunity to guide NC State in this important domain, and we stand ready to assist the Chancellor, the Provost, and the Vice Chancellor for Finance and Business with implementation.