Why Strategic Planning Matters

All planning occurs within the interstices of multiple contexts. Since our first five year plan was mapped out and approved (ITS Five Year Strategic Planning Framework 2002-2007) we have worked with three university Presidents, three Provosts, and two Senior VPs for both Finance and Development. In addition, we have seen nearly the entire cadre of decanal appointments turn over, along with changes in the office of budget and planning. In addition to the changes in senior administration at Case, the university has found itself oscillating between different management styles, shifting priorities, multiple fiscal challenges, and relatively little planning activity. And yet, from both a general strategic and IT-specific planning perspective, the broader parameters of engaging, planning, prioritizing, operationalizing, and setting milestones and outcome measures are more important than ever before.

Our Vision
re-imagine, re-invigorate, re-invent

Strategic Initiatives
structured innovation
engagement and collaboration
three c’s: core technology, continuity planning, compliance

Business and Operations
service lines and allocations
making it happen
financial metrics

Evaluating
our progress
Our Vision

ITS at Case Western Reserve University is committed to partnership with the Case community to provide robust, innovative, and collaborative information technology products and services; even this document was created with community input through a Case wiki. Our ITS leadership and support enable Case to sustain its high standards in teaching, research, and outreach.

Building on the strengths of the past and fully aware of the challenges that lie ahead of us, ITS has entered into this dynamic process of re-imagining, re-invigorating and reinventing itself to best support the mission of the university and the faculty, students (including alumni), and staff who are our customers.

Re-imagine

Five years ago, almost no one imagined that a significant part of the dynamism and positive reality of our lives at Case would include switched gigabit Ethernet, pervasive wireless, wikis, blogs, P2P software, portals, voice and television over IP, productivity software delivered over the network, self service administrative applications, a help line that would answer with a human voice within 20 seconds 7*24*365, or supporting student learning and success with mediavision courseware, and countless other services that have become, for most people, simply “digital air”. If few could fully imagine what has been accomplished over these past five years, we suggest that there is a significant probability that the next five years are even more unknowable at this juncture. But the most important thing we can do in this 5 year planning effort so as to have no misalignment of expectations is to encourage a process of re-imagination. We want and call upon your help in that process of re-imagining what services and tools will make us all capable of contributing to the challenges and opportunities ahead.
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Re-invigorate

ITS, together with the rest of the university community, has had to confront profound negative impacts of recent transitions at Case; the fall-out from those changes has hurt real people and stressed our fragile working environment. Today, Case has fewer dedicated IT professionals supporting the research university environment than any other university by a factor of nearly 100 percent. The budget environment for ITS is equally challenging. A research university committed to a 21st century scholarly agenda must re-invigorate and rededicate itself to investing in those enabling platforms that will support strong research proposals, collaboration, and productivity. Information technology is an indisputable driver of research innovation and a critical success factor distinguishing our ability to recruit world class faculty and the very best undergraduate and graduate students. It is vital that we use this five year planning horizon to reinvigorate those commitments and harness the resources provided through the fiscal allocation process to meet the requirements of our faculty and continue to invest in people and technologies.
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Re-invent

From an organizational perspective, the next five years are likely to involve further re-invention. Technology drivers demand a continuous updating of skills, tools, and knowledge. Agility is a much-used term in management text books, but the reality is that ITS will need to continue to reinvent itself and embrace new organizational strategies in order to be positioned to respond to growing customer expectations against a highly constrained resource environment. While we continue to advocate for further investments in talent to support core and functional requirements like analysts, database specialists, engineers, and programmers, we are, in parallel going to move to a portfolio approach managed by a program management office. The initiative to create a sustainable project management office represents one of our core insights as to how to meet and exceed customer expectations and to remain responsive to what will almost certainly be constant and shifting priorities and demands. Our strategic planning framework attempts to balance our commitments to both mission critical services and a differentiated service offering to extend the university's long tradition of distinction in the area of technology in the 21st century. Our approach over the next five years can best be described as a cross-boundary (ITS + Schools + Central Business Operations) portfolio approach.
20 Strategic Initiatives

The three broad themes of this five year strategic planning framework are outlined on the next pages. They are: structured innovation, engagement and collaboration, and what we are calling the ‘three c’s’: core technology, continuity planning, and compliance.

Each theme includes a discussion of the initiatives, key concepts, an indication of what makes it strategic and how implementation will benefit the university, along with recommended strategies.

At any given time, ITS supports a portfolio of more than 250 projects associated with its role in operations, security activities, decision support, instruction support, leadership initiatives, and customer service. This framework is focused on twenty initiatives that are mapped back to the three themes.

Structured Innovation
1. The impact of new technology on learning.
2. Learning spaces (physical and virtual) that engage and develop learners and lead to student success.
3. Faculty and staff development.
5. Advanced network research support.
6. Mobility and converged platform for collaboration.

Engagement and Collaboration
1. Best of class web 2.0 collaboration solutions: email, calendaring, file sharing, instant messaging, meeting spaces, dynamic media, web, video and audio conferencing, blogs, wikis, course management, forums and search tools.
2. ITS Program Management Office.
3. Space Plan.
4. Renewal of IT Governance.
5. University Circle Innovation Zone.
6. Cleveland 2.0.

Core Technology, Continuity Planning, and Compliance
1. Case IT Architecture 2.0.
2. Upgrade key administrative systems.
3. Focus on Data Warehouse enabling decision support.
4. Expansion and Improvement of Enterprise Data Centers.
5. Sustainable plan for production, development, and redundancy of IT equipment.
6. Continuous upgrades and renewal of fiber backbone infrastructure and related electronics.
7. Contingency planning.
8. Augmentation of information security services.
**Strategic Initiatives:**

**Structured Innovation**

**Discussion**

Over the next five years, ITS proposes assessing how students use technology in their learning, research, work, and play environments. This will be the foundation for our work and investments in structured innovation technologies that align to the starting point of our students and engage them in the process of discovery and the love of learning.

Higher education has long talked about a new generation "who will have grown up with technology and who will come to the university with a different set of expectations." Those undergraduates, graduates, post-graduates are here now; the challenge is to meet their expectations of technology related to their scholarship. These people multi-task, use technology for social networking and entertainment, and quickly and efficiently access and analyze information to solve problems. They come here with high technological skills and experiences, and they expect these technologies to be readily accessible, reliable, transparent, portable, and easy to use in support of their learning and teaching experience.

Faculty have an array of skills, needs, and abilities in using technology to support learning. The university must provide appropriate technologies to meet their needs and also provide evidence of technology’s effectiveness in promoting student learning. Case has supported efforts such as MediaVision Courseware, Blackboard, and more than 170 technology-enhanced classrooms. In addition to providing the technologies, Instructional Technology and Academic Computing (ITAC) plans to provide extensive faculty development and support in the use of technology. Finally, we will evaluate and provide information to faculty on the educational effectiveness of these instructional technologies.

New skill sets, abilities, and knowledge empower students to develop academically; ITS and ITAC will continue to develop and support that effort with instructional technologies such as MediaVision Courseware, Blackboard, Case Blog and Wiki, new media initiatives, and desktop videoconferencing.

ITS, with support from the Office of the Provost, has since May 2005 provided a limited set of services in the area of computational and advanced network-based research computing. In that
Strategic Initiatives:

Structured Innovation
(continued)

Discussion (cont.)

time, 80+ members of our research community have taken advantage of the high performance computing services; high utilization rates demonstrate demand that exceeds the current supply of computational power. In addition, researchers have found ITS services in database hosting services and ultra-high bandwidth networking to provide needed support for their work.

Consultation with users confirms the importance of these resources to their research and to the university. Analysis of peer institutions shows that many are centralizing high performance computing resources to achieve economies of scale and be able to tackle very large computational problems. ITS must be responsive to the demonstrated demand, and be proactive in providing readily accessible advanced research computing services to the university research community.

The examples of structured innovation in this section represent investments either previously made or made by others (mobile phones, etc), and we can selectively leverage those investments to continue innovative, creative, and transformative learning experiences.

By FY2012 we will add more than $1m to the annual operating investments to support structured innovation, and provide continued capital investments in areas like technology enhanced classrooms, and research computing. This will be the first time in the history of the university where these core services will enjoy core funding. ITS also commits to working with vendor partners, commercialization activities, facility use, and other entrepreneurial activities to bring $1m of documented in-kind contributions of goods and services associated with the six structured innovation initiatives by FY2012.

Key Concepts (cont.)

Virtual worlds present an extraordinary platform for innovation and engagement that are effectively limitless. Our hypothesis is that virtual worlds will be this generation of students’ “birth of the Internet” experience. It stands to be a transformative experience supporting scholarship, research, experiential learning, discovery, interaction, and play, and we propose to exploit it.

Use of the Case Wireless network has continued to grow. This trend will continue as new wireless devices are invented, and wireless data and communications converge. ITS will continue to support our existing wireless network and new wireless technologies, as well as continuing expansion to campus and community areas where the Case community chooses to work.
Recommended Strategies in Structured Innovation

Support Learning:
- Formalize relationships with academic deans, associated deans for research, the office of research and technology transfer, and the provost's office.
- Identify, recommend, and disseminate information and insight on technologies that support the university's mission.
- Refine a funding model to maintain and sustain investments of both research-oriented and academic technology.
- Maintain expertise in emerging technologies through professional development and collaboration.
- Create an ongoing culture of assessment, and an active research agenda promoting and improving use of academic technology.
- Development more learning spaces (physical and virtual).
- Develop and expand e-learning and dynamic digital media technologies.

Support Faculty and Staff Development:
- Work with the Provost and the President to establish faculty and staff development as a “leadership priority” worthy of resource investment.
- Support incorporation of structured innovation in the tenure, promotion, and upward development of faculty and staff.
- Create a “distributed” series of lectures and workshops involving both Case and external researchers using high performance computing in cooperation with existing departmental and school-based seminar/colloquium series.

Support Research:
- Provide pre-award consultation and assistance to researchers in securing external funding related to use and growth of high performance computing.
- Engage in post-award participation in funded proposals requiring high performance computing and hosted database services.

Strategic Initiatives:
Structured Innovation
(continued)

What makes this strategic?
Implementing recommended strategies in structured innovation will:

- Provide broad institutional support for successful teaching and for learning.
- Free prime campus space in favor of hardened university data centers.
  - Attract world-class people and opportunities, dramatically increase external funding and grow partnerships.
- Establish the university competitively in one or more computationally-intensive research areas.
- Enable the identification, evaluation, application and communication of emerging technologies.
- Maintain the “world class” technical capability, expertise, and reputation that differentiates Case from other institutions.

its@case
Recommended Strategies in Structured Innovation (cont.)

Support Research (cont.):
- Increase the awareness among faculty of ITS potential to support their research computing needs.
- Support faculty through shared, cooperative investment by schools, colleges, departments, research centers, and individual researchers.

Support high performance computing and advanced network research activities:
- Establish baseline services and resources for a “core facility” including hardware and software, executive leadership, technical operations staff, and infrastructure services.
- Create a shared-ownership model to permit/encourage investment of external funding to grow the resource to its optimal sustainable level.
- Increase awareness of potential uses of high performance computing in research via a series of lectures and workshops.
- Formalize governance of the core facility using the Advisory Committee on Research Computing, the Faculty Senate Committee on Information Resources, a technical advisory board, and an ownership board representing university investors in the shared, cooperative organization.

Continue upgrades and expansion of wireless data network:
- Working with partners such as OneCommunity, Case’s ITS will continue to lead in the area of mobile computing, both on and off campus.

Continue improvement in cellular coverage on campus:
- Continue team efforts with our partner Sprint on the performance management of the Sprint / Nextel PCS wireless network throughout the campus and surrounding communities.

Improve access to mobile applications and services:
- Support cellphones and other small form factor devices, including the ability to format web pages to the size of the device display; support applications-users interactions via SMS (Short Messaging Service) and other mobile specific protocols.
**Strategic Initiatives:**

**Engagement and Collaboration**

**Discussion**

While ITS made customer service job #1 in the first 5 year plan, we also had a significant infrastructure rebuild effort to carry out, with considerable effort of both human and capital resources, and we need to continue to invest in that.

We rebuilt the university’s data network, transformed the telephony infrastructure, implemented VOIP, and installed both pervasive wireless across campus and the university’s first enterprise class servers. Over five years our bandwidth consumption went up 15 fold without adding a dollar to our internet access budget through our leadership and collaboration with OneCleveland (now OneCommunity). We committed ourselves to a single production database platform, machine room standards for hardware, a common platform for clients, and launched the university’s Enterprise Resource Planning (ERP) application on new hardware on top of a new network.

However, we did not complete everything on our original list (for example, the university still does not have an enterprise class data center and this places the entire university at risk). Moreover, we must systematically plan for the replacement of core facilities that are now as much as 12 years old. In this strategic framework, IT infrastructure and related capital investments are a consideration in how we measure success in the next five years.

IT as thought leaders and partners helping faculty, students, and staff to engage in and make use of collaboration tools will be an important differentiator for Case Western Reserve University. Communication and experience are the foundation upon which ITS aspires to add more value in 2007-2012. Our communication has been basically one-way: how much and how well did we communicate and our measurements are around reliability and up-time measures. We have lacked the capacity to ask how our customers are experiencing our services and what we can do to augment that experience.

ITS’ goal is to develop capacity and focus to induce the campus community to participate; we believe technology can significantly contribute to the development of a platform for engagement and collaboration.

**Key Concepts**

ITS is committed to an engagement with our various customer constituencies to identify priorities, and to evolve into a collaboration-enabling service organization.

A central goal is to work collaboratively to create the first capital planning process in the history of the university enabling annual capital investments in its aging infrastructure plant.

Successful IT organizations within higher education will be measured upon the extent to which they provide collaboration tools in support of a university’s academic, research, administrative and outreach missions.
**Key Concepts (cont.)**

Emerging into a competitive institution for students and faculty requires a serious commitment to reimagining and reinventing the way we conduct daily business and the delivery of our core mission in both the research and learning enterprises.

Establishing a Project Management Office is an integral part of ITS’ operations.

The ITS Planning and Advisory Committee and its sub-committees (Council of Technology Officers, Faculty Senate Committee on Information Resources, Academic Research Computing Advisory Council, Data Warehouse Advisory, Academic Advisory, ERP Liaison, and Student Advisory Committees) will be re-engaged for efficacy of the governance process.

**Discussion (cont.)**

In addition to thought leadership and business process improvements, ITS will respond to the articulated needs of the university community for engagement and collaboration tools. As we develop and introduce these, we will need the human and financial capacity to meaningfully engage the university community so that the tools will be embraced by the faculty, staff, or student.

An important informing principle of this framework is that the university’s platform will likely remain only one of a number of platforms supporting engagement and collaboration tools. As we advance university-wide services we will interoperate and keep our systems as open as possible to support major clients. In calendaring, email, telephony, video conferencing and other collaborative services, we will support as much easy to use self-service as the university community is prepared to accept and embrace.

In this second five year plan, ITS embarks upon a renewed effort to support project activities through a portfolio based Project Management Office (PMO). Our PMO effort is a model of internal and external communication, assisting with the prioritization of projects, developing a full life cycle costing model for each, and the PMO will play an important role in aligning customer expectations with IT resources. Managing cross boundary portfolios of projects, including the all important ongoing re-engineering of business processes, represents an important new skill set and challenge for both IT and the rest of the university service provider community.

Our capacity to evolve as an organization and sustain the forward-looking initiatives of this Strategic Framework is based on leadership, direction, and organizational dedication, but also on a nurturing workplace. ITS space and workplace activities are locked in an architecture and space reality of the mid-20th century. Innovations such as the flexible telecommuting program known as CASEworks is an important but insufficient condition to building a workforce and workplace of the future. We propose re-engaging with the university architect and ITS staff to locate, build, or refurbish a 30,000 square foot working environment (based upon current and projected staff and work-related needs).
Key Concepts (cont.)

With the support of the university architect, ITS proposes engaging in a formal 5 year space planning effort. This effort will be informed by ITS’ vision of supporting an innovative, inviting, and collaborative work environment where the self-direction of the ITS staff in creating their own work environment will model a new university space planning philosophy.

ITS has been a significant contributor to recent activities to define and support University Circle as a declared “Innovation Zone” by the City of Cleveland and the County Commissioners. Beyond the designation, University Circle is a connected community with an unprecedented “sandbox” opportunity for solutions providers seeking proofs of concept and entry into the high tech marketplace. Another initiative, Cleveland 2.0, places the university at the center of a provocative effort to re-imagine and re-engineer Greater Cleveland; dozens of civic leaders from private industry, the tech industry, banking, media, and the public sector are partnering and leveraging technology to attend to community priorities.

Discussion (cont.)

Advancing a culture of engagement relevant to the university extends to the innovation activities in University Circle and beyond. ITS’ leadership in the birth of OneCommunity (formerly OneCleveland) is an example of the university's ability to leverage its resources to provide both the university and the community around us with value, opportunity, and distinction. ITS has contributed to recent activities to define University Circle as a declared “Innovation Zone” by the City of Cleveland and the County Commissioners. Beyond the designation, University Circle is a connected community with an unprecedented “sandbox” opportunity for solutions providers seeking proofs of concept and entry into the high tech marketplace. Another initiative, Cleveland 2.0, places the university at the center of a provocative effort to re-imagine and re-engineer Greater Cleveland; dozens of civic leaders from private industry, the tech industry, banking, media, and the public sector are partnering and leveraging technology to attend to community priorities.
What makes this strategic?
Implementing recommended strategies in engagement and collaboration will:

- Support the university’s distinguished reputation as an attractive environment for world class researchers, inspiring teachers, and the most innovative and creative students.
- Support open and transparent communication, and availability of reliable and robust services.
- Provide the university with a strategic road map to meaningfully invest in and support collaborative services.
- Enable the university to maintain its position as a technology innovator in support of its teaching, research, and outreach missions.
- Enable teaching strategies that leverage technology aligned with student expectations around collaborative tools in their learning environments.
- Attend to the explicit articulated demands of faculty.

Recommended Strategies in Engagement and Collaboration:

Re-invigorate:
- Renew the IT governance model.
- Work with key governance bodies to develop an open-ended portfolio of engagement and collaboration technologies.
- Comprehensively review IT skills and job classifications to support the goals of these initiatives and the broader goals of the Strategic Framework.

Focus human, financial, and technical resources on engagement and collaboration technologies.
- Those that support communication and the transmittal of information (email, calendaring, instant messaging, file sharing, word processing, spreadsheets, search tools, etc.). As these tools become commodified, determine where services are core or where we might re-direct resources to support value-added services (such as those outlined below) and look to others to provide basic collaboration services.
- Those that enable co-production, or that blur the line between consumers and producers of learning, teaching, research, and knowledge itself. While such tools exist in the consumer marketplace, how the university frames these enabling tools is at the heart of the call for inducing the university community to participate. Enabling technologies are the essential character of the next generation of Internet tools; they will combine collaboration, communication, and creation of value.
- Develop professional skills to support engagement and collaboration technologies.
- Support the proposed Institute for Faculty Development, which will facilitate early adoption and use of engagement and collaboration tools.
- Develop an engagement and collaboration platform to foster and support trans-disciplinary participation.
- Identify and support active collaboration research endeavors to leverage and innovate on these platforms.
Strategic Initiatives:
Engagement and Collaboration (continued)

**Recommended Strategies in Engagement and Collaboration (cont.)**

**Project Management:**
- Educate ITS staff in basic project management; consistently use the same terminology; provide support, mentoring, tools, and prioritization to the project managers and ITS staff.
- Create and maintain a consistent project management methodology and create processes for all IT projects; manage IT project portfolio to ensure projects are within the strategic framework.
- Prioritize projects and process improvements under the key strategies with a combination of short, medium, and long term projects; build in time for unexpected projects that will push prioritized projects further down the list; provide tools to easily monitor the status, requirements and risks of a project.
- Add depth to the breadth of the organization; just as the infrastructure requires redundant hardware, we need depth on the human resource side as well.
- With technology partners (Sprint, IBM, Cisco) ensure the university is on the leading edge of innovative technologies for higher education.
- Increase customer satisfaction with project-related work through increased communications, collaboration, training, and awareness; work closely with PerceptIS to coordinate response times on trouble tickets.
- Launch a campus wide effort to investigate and, if appropriate, develop a university project management office.

**Support Community Efforts:**
- Elevate the university’s engagement with University Circle Incorporated Innovation Zone to a leadership priority.
- Explore shared service models with other UCI institutions.
- Co-sponsor an annual UCI-wide IT-Innovation Zone event.
- Offer an organized, regular training schedule related to emerging new technologies to UCI member organizations.
- Induce UCI institutions to become the driving force behind Cleveland 2.0.

**What else makes this strategic?**
- Provide direction on key staff resources to be hired as part of ITS' comprehensive staffing plan.
- Enables the deployment of platforms that will support open source research and entrepreneurial activity.
- Supports key administrative system goals associated with providing tools for both decision making and the decision making process.
- Structures the insatiable demand-side requirements against a finite amount of supply-side talent and resource.
- Focuses attention on the relationship and interdependency of the university and its neighbors.
- Introduces a replicable and scalable model for managing cross-boundary projects.
- Provide a framework for expectation setting for ITS staff regarding the challenges.
Strategic Initiatives:
Three C’s: Core Technology
Continuity Planning
Compliance

Discussion

The university has a responsibility and requirement to judiciously review risks and develop a core technology capital investment plan, including a process of identifying priorities, developing a business case, and allocating resources so as to maintain baseline activities in information security. These core services and the capital allocation process constitute ‘must have’ offerings.

Significant, irreplaceable portions of the university’s core business operations rely on robust, reliable, and dependable “uptimes” of applications and databases. The first step toward assuring that is to complete a sign off on data center requirements. The second is to identify and sign off on our secondary data center strategy so as to have built-in redundancy. Finally, once the facilities are identified, we must move to these new facilities and support warm data and basic server/storage arrangements, so as to allow the university to recover from a catastrophic event in our primary facilities.

No engagement and collaboration-centered service organization is possible without sustained investments in core technology, vigilance with respect to compliance requirements, and an unwavering support of continuity planning as a risk mitigation strategy in support of the core business of the university.

Today, there is an earned expectation that core technology will work. Period. This perception emerges from five years of systematic investments transforming network services into reliable transportation supporting everything from productivity tools and gaming to advanced research and collaboration tools. The core utilities that customers have come to expect like the ERP system, email, calendaring, web services, and the Blackboard course management system have all reached such a level of reliable service that we are both caught by surprise and disconcerted when services fail to provide the expectation of ‘always on’.

However, the current server rooms are overutilized and have exhausted resources such as power, cooling and space. And, these spaces were designed without the redundancy which

Key Concepts

ITS is committed to improving our capacity to attend to information security, regulatory requirements, disaster recovery, and business operations for both risk mitigation and to identify 'must have' strategic investments.

Core technologies require systematic investment to maintain the level of service to which the university has become accustomed over the past five years. Yet, there is an historic gap in funding and supporting the university’s core technology environment.
**Strategic Initiatives:**

**Three C's:” Core Technology**

**Continuity Planning**

**Compliance**

(continued)

**Key Concepts** (cont.)

A smaller ITS staff is being challenged to support a larger, more sophisticated set of core technology tools. Over the next five years, ITS proposes an incremental directional strategy for building both technical and human capacity to support the expectations of an aspiring modern 21st century research university.

The strategic call for these initiatives belongs to the university’s executive and to the business owners, but the operational responsibility belongs to ITS. We will work together in an explicit manner to meaningfully engage with the executives and management of the university to gain traction in managing the risk portfolio.

**Discussion** (continued)

would contribute to maximizing uptime of mission critical services. Nearly 45% of our production servers are over three years old and out of warranty; of these, more than half are over five years old and repair parts are non-existent or costly. A number of critical services rely on single points of failure; a fundamental component of our network is the fiber backbone infrastructure; a large portion of this fiber optic cabling is approaching twenty years old, and due to be replaced or supplemented.

Identity management at Case currently is a combination of loosely vetted policies, privacy (FERPA) rules, various middleware services (kerberos, AD, LDAP, SSO), and access services (badging, parking, CaseOneCard). A coordinated concept could better achieve identity vetting, user access credentials, person registries, encryption key management or PKI as appropriate, access and authorization controls, and chain of trust.

In the aftermath of 9/11 and scandals in the accounting world, the university must execute on the systems that support checks and balances on our financial and administrative systems, and on reporting associated with the security, safety, and compliance realities of our world. At Case Western Reserve University, the Chief Information Security and Policy Officer has been asked to assume that role, in addition to a portfolio of operational duties. In order to balance the daily fire fighting that goes on in a complex and sophisticated user environment like ours, and at the same time attend to the growing importance associated with our various compliance activities, ITS has prioritized building capacity in this area so as to support the various officers of the corporation, as well as staff and faculty of the institution.

An enterprise organization must attend to critically important, comprehensive, integrated business continuity and contingency planning. In reality, it is not a matter of whether systems will fail, but only a matter of when. When we do experience operational interruptions it is critical that we have a tested and well architected recovery plan, which ITS assigns to be a very high priority. Central to ITS’ embracing this as a key initiative is our equally significant conviction that ITS will need to partner with the business units of the university to specify all the requirements associated with this plan. Business continuity planning is too important to be left to ITS alone.
Recommended strategies in core technology, compliance, and continuity planning:

**IT Architecture:**
- Expand, improve, and provide redundancy for critically important Enterprise Data Centers to serve for at least the next ten years.
- Build a sustainability plan for production and development of IT equipment.
- Consolidate and systematically renew production servers.
- Work with the budget office and the senior executive of the university to establish an ITS capital budget.
- Implement new technologies and redundancy in production systems.
- Upgrade fiber backbone infrastructure; incorporate redundancy through the addition of new fiber pathways.
- Develop contingency plans for business continuity, business recovery, continuity of operations, disaster recovery, and incident response, and integrate information technology plans with campus contingency planning efforts for non-IT.
- Evaluate middleware architecture and vendor platforms, identify non-ITS stakeholders (academic support, research computing, special projects) for impact or possible requirements conflicts, identify infrastructure constraints, make trade-off decisions. Investigate migrating to Oracle Fusion, and create a methodology and timeline for keeping systems up-to-date with patches, bundles, maintenance packs and versions.

**Identity Management**
- Improve identity management; define and implement an architecture that will meet the current and future needs of our IT environment. Measure value propositions in time to implement a number of constituent IT systems that have transitioned to ID Management support across campus and slightly beyond to the federated environment. Transition...
Recommended strategies (cont.)

from using social security numbers as a key identifier. Use a standardized approach interfacing with external systems (e.g. shibboleth, external vendors, etc.).

- Identify core identity architecture to support: user access to Case IT enabled resources, integration with standards-based federated identity management capabilities (Shibboleth and SAML), support for loosely affiliated persons (affiliate IDs), compliance with university policy regarding SSN or other personal identifiers that may bring a risk of loss or disclosure.

- Create an incremental delivery program aligning identity management needs. A basic phase approach can be to first create policies to apply to common IT resources, then begin core infrastructure development on the basic identity architecture, and then deliver key requirements to supported stakeholders.

- Evaluate the possible unified approach to physical access controls and logical access controls in a common badging/authentication system as a capability.

Improve support for administrative services:

- Improve business intelligence analytics with the continued development of the data warehouse and reports; train end-users on their use.

- Create views of integrated data from the ERP systems, Financials, Research, Student and HCM.

- Investigate data sources outside of ERP critical to the university.

- Implement the Student Information System.

- Re-engineer business processes (the analysis and design of workflows and processes within and between organizations).
In Fiscal Year 2007, ITS is the steward of an operational budget of $15.6m. In addition, the university is paying off some $6m per year in internal loans to support project activity, including a network upgrade that began during the first five year plan, and ERP for Finance and Student. We estimate the investment of the university’s decentralized IT organizations from schools and other units like Student Affairs and Enrollment Management totals another $12 million per year. And, in collaboration with University Facilities and Planning, we jointly plan a refresh of the core fiber plant over a ten year period with an annual allocation ranging from zero to $1 million per year.

Note: The allocation of ITS’ budget is in the pie chart below and the accompanying breakout of business lines of service (that cross our organizational boundary). These allocations include both our salary (including benefits) and our investments in goods and services.
Making IT Happen:

ITS budget as a percentage of total university expenses:

According to Educause’s Core Data Project, the average IT Budget as a Percentage of Total University Expenses is between 3.6% and 4.8%. As the accompanying table suggests, Case Western Reserve University will need to stretch to achieve this level of investment. The data includes both ITS’ operational budget and the internal loan for capital investments.

We propose that by Fiscal Year 2012, the ITS budget represent 3.11% of the total university budget. Based on a conservative assumption that university expenses will be $1 billion, with a 0.5% additional allocation to IT we estimate the additional investment required would represent $5 million per year over the current $26 million.

### University’s Total Expenses (000s)

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<tr>
<td>Revenue</td>
<td>602,560</td>
<td>683,033</td>
<td>744,558</td>
<td>803,031</td>
<td>815,728</td>
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<tr>
<td>Student Services</td>
<td>10,571</td>
<td>11,714</td>
<td>13,394</td>
<td>15,669</td>
<td>15,698</td>
</tr>
<tr>
<td>Plant</td>
<td>37,981</td>
<td>39,201</td>
<td>43,318</td>
<td>44,213</td>
<td>47,663</td>
</tr>
<tr>
<td>Information Technology Services</td>
<td>16,609</td>
<td>18,456</td>
<td>22,222</td>
<td>22,481</td>
<td>21,541</td>
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<tr>
<td>Library</td>
<td>13,217</td>
<td>13,661</td>
<td>14,897</td>
<td>15,149</td>
<td>15,597</td>
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<tr>
<td>Student Services</td>
<td>10,571</td>
<td>11,714</td>
<td>13,394</td>
<td>15,669</td>
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<tr>
<td>Plant</td>
<td>37,981</td>
<td>39,201</td>
<td>43,318</td>
<td>44,213</td>
<td>47,663</td>
</tr>
<tr>
<td>Total Indirect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Expenses</td>
<td>601,232</td>
<td>703,584</td>
<td>773,210</td>
<td>852,923</td>
<td>826,522</td>
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### ITS Percentage of Total Expenses

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<tr>
<td>Median Dr Int</td>
<td>2.76%</td>
<td>2.62%</td>
<td>2.87%</td>
<td>2.64%</td>
<td>2.61%</td>
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<tr>
<td>Median Dr Ext</td>
<td>4.21%</td>
<td>4.23%</td>
<td>3.60%</td>
<td>3.59%</td>
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<tr>
<td>Median MA I</td>
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<td>4.84%</td>
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<tr>
<td>Median MA II</td>
<td>4.68%</td>
<td>4.71%</td>
<td>4.50%</td>
<td>4.52%</td>
<td></td>
</tr>
<tr>
<td>Median BA LA</td>
<td>4.52%</td>
<td>4.53%</td>
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</table>
Making IT Happen: (cont.)

Ratio of central ITS staff to students to be 60:1 by fiscal year 2012:

According to our peer review, the ratio of central IT staff to the size of the student body is among the very highest of the doctoral extensive universities. In FY2007 our 99.5 FTE produced a ratio 78:1. If we include the 10 staff under the supervision of PerceptIS Help Desk and Call Center the ratio drops to 70:1 which is still the third highest ratio among our peers. By FY2012 we aspire to reach 60:1 which is still high for our peers set (currently at 50:1).

Distribution and quantum of fiscal resources will reflect the portfolio approach and key initiatives by fiscal year 2012.

As a result of the metrics above, we anticipate that in FY2012 the university will allocate $26.6m to ITS. Of that, we propose that $6.6m be part of the ITS permanent Capital portfolio reflecting recurring capital investments in the university network, servers, storage, media services, and enterprise software services that can be capitalized. The remaining $20m in operations are reflected in the business service lines and the strategic direction outlined in this planning framework.

Investment Targets for IT Operating Funding FY2012 ($20m):
- Teaching, Research, and Learning $3.8m
- Enterprise Applications and Decision Support $6.2m
- Core Technology $7.0m
- Customer Support and Service $2.4m
- Leadership and Outreach $600,000

Core Capital Investments for IT Funding FY2012 ($6.6m)*:
- Network Capital Investments $3,600,000
- Server Farm Depreciation and Refresh 700,000
- Storage Farm Depreciation and Refresh 900,000
- Technology Enhanced Classrooms 200,000
- Research Computing 300,000
- Business Continuity 500,000
- Dynamic Media and Broadcast 400,000

*Note: The proposed capital Investments outlined on this page do not include capital expenditures in the backbone infrastructure refresh and build out; that remains associated with University Facilities and Planning. In addition, the capital investments noted here do not include internal loan payback for the PeopleSoft ERP implementation.
Making IT Happen (cont.):

IT Planning and Goals for Case Western Reserve University’s Schools/Colleges/and Distributed Units:

Like most research universities, Case has investments in dedicated and skilled IT staff in multiple schools and administrative units outside of ITS. Through the strategic planning process, ITS invited these individuals and organizations to share their key initiatives, planning activities, service line offerings, and strategic initiatives. There are numerous important technology initiatives underway across the university, and we hold a deep conviction that as an IT service community, we have an obligation to maintain structured dialog and operational planning alignment with all the IT professionals at Case Western Reserve University.

Both central and non-central IT investments need to evolve demonstrable changes in the value chain. With continuing financial pressures and growing customer expectations, we can deliver more as a cadre of IT professionals to the university if we align our activities. This will reduce redundant service lines, re-direct spending at the distributed unit level, and enable innovation and customized solutions at the school and administrative unit level. And, services that were core, like desktop support or school-level network services, are largely commodified today.

Information technology spending outside of central ITS amounts to at least $10 million a year. While this is a significant investment, as a whole the distributed units across the university are significantly undercapitalized. Over the next five years, ITS proposes systematic dialog with the school and college deans and senior administrative leadership to develop plans to raise the level of investment in IT services at the unit-level by no less than 3% a year, leading to at least $12 million per year in non-ITS technology spending in the schools. We hasten to add that the most desirable outcome would be to see those marginal new dollars dedicated to value-added services and investments in new specialized content specialists and technically proficient decision support analysts.

In addition, ITS proposes that over the next five years, IT leadership in the schools and units systematically identify an aggregate 3% each year of services that are no longer ‘value-added’ and enter into service level agreements with ITS to provide those services (assuming that ITS receives the resource funding outlined in the financial planning section of this plan). This two-part effort would lead the schools and colleges to increase value-added services by 40% over the next five years. The impact of this ‘new investment’ will be significant, and propel the distributed IT organizations across the university into valuable partnerships and leadership positions across the university.

As we review the major initiatives of the IT organizations in the schools, colleges and administrative units, it is our hope that their decision-makers will work together with both their own IT staff and the central IT organization to realize the value of leveraging technology and IT services to meet the support needs of our faculty, students, and staff colleagues over the next five years.
Evaluating Our Progress

Measuring Outcomes:

We've identified tasks (the bulleted items to the right and on the next two pages) whose achievement will serve to measure progress as we work through our Strategic Initiatives over the next five years. Together with the financial metrics cited in the Business and Operations section, they will be the basis of real time reporting on our service portfolio.

Of course, we hope to achieve all of the recommended strategies outlined in this Strategic Framework. The tasks listed in this section are selected samplings for measuring outcomes.

Structured Innovation

1. The impact of new technology on learning.
   - Publish and incorporate information gathered from assessments into technical innovations.
   - Create a Faculty Development Institute for the purpose of deeper and broader understanding of teaching and learning with technology.

2. Learning spaces (physical and virtual) that engage and develop learners and lead to student success.
   - Invest in and support the university’s technology-enhanced classrooms; equip all university learning environments with appropriate technologies.
   - Develop an explicit strategy for inducing participation in virtual worlds in support of research, teaching, and the student experience.

3. Faculty and staff development.
   - Create a series of lectures and workshops involving both Case and external researchers using high performance computing in cooperation with existing departmental and school-based seminar/colloquium series.
   - Institute monthly brown bag meetings in collaboration with PerceptIS and other university and vendor partners, to share practical tips on collaboration tools.

   - Grow processor to optimal sustainable level
   - Establish Technical Advisory Committee and Establish High Performance Computing Ownership Board

5. Advanced network research support.
   - Achieve an ongoing direct contribution from research grants and/or other external sources to $1M, with total associated grant funding in excess of $5M
Evaluating Our Progress
(continued)

Measuring Outcomes (cont.)

By the very nature of the work and service supported by ITS, it is particularly important to building an engaged and collaborative organization that we maintain measures of outcome in a transparent and readily available manner.

We look forward to feedback from our customers on these measures of progress on the twenty strategic initiatives, but also on any of the more than 250 projects in our portfolio.

Structured Innovation (cont.)

5. Advanced network research support (cont.)
   - Distributed operation of campus research computational and storage grid.
   - Be actively involved in experimental efforts in emerging technologies as determined by research investigators.

6. Mobility and converged platform for collaboration.
   - Partner with mobility vendor to create a university research and development facility for mobility-based learning and research activities, including an annual activities agenda.
   - Annual surveys and procurement records, and records of rates of usage are generated to determine the availability, level of performance, and support for mobile devices distributed throughout the Case Community and supported by ITS.

Engagement and Collaboration

1. Best of class web 2.0 collaboration solutions: email, calendaring, file sharing, instant messaging, meeting spaces, dynamic media, web, video and audio conferencing, blogs, wikis, course management, forums and search tools.
   - Engage in an open planning process to establish quarterly goals with respect to the delivery of collaboration tools; follow those goals.
   - Promote demonstrations of collaboration tools through the proposed Faculty Development Center, and by active conference presentations between ITS and other university staff, faculty, and students.

2. ITS Program Management Office.
   - Provide basic training in project management using the same project terminology across the division; define best practices in project management.
   - Evaluate and purchase Project Portfolio Management software tools; implement centralized portfolio management.
Evaluating Our Progress
(continued)

Engagement and Collaboration (cont.)

3. Space Plan.
   • Plan, design, and occupy an innovative, inviting, and collaborative work environment.
   • Create a new, dynamic media production facility for professional video and rich-media production.

4. Renewal of IT Governance.
   • Formalize governance of the core facility using the existing Advisory Committee on Research Computing, the Faculty Senate Committee on Information Resources, a technical advisory board, and an ownership board representing University investors.

5. University Circle Innovation Zone.
   • Co-host with UCI partner institutions (and others) a quarterly forum on collaboration tools and their relevance to the UCI Innovation Zone.
   • Co-sponsor an annual UCI-wide IT-Innovation Zone event.
   • Offer an organized, regular training schedule related to emerging new technologies to UCI member organizations.
   • Concept of a shared services agreement between the university and University Circle organizations has been explored.

6. Cleveland 2.0.
   • Cleveland 2.0 emerges as a sustainable innovation practice and platform.
Evaluating Our Progress
(continued)

Core Technology, Continuity Planning, and Compliance

1. Case IT Architecture 2.0.
   - Periodic replacement and maintenance of all production IT infrastructure equipment and software as defined in the CASE ITS Business Continuity Plan is budgeted and executed.

2. Upgrade key administrative systems.
   - Upgrade EPM (data warehouse and budgeting), financials, and HCM to Version 9.0
   - Refresh hardware
   - Students system implemented.
   - Human Resources: Employment applicants and employee evaluations.

3. Focus on data warehouse enabling decision support.
   - Student data from new system available in data warehouse.
   - Workforce analytics (HCM) implemented in data warehouse.
   - New data marts in version 9.0 EPM available in data warehouse.

4. Expansion and Improvement of Enterprise Data Centers.
   - A fully implemented Center exists on or near campus housing all of the primary IT infrastructure equipment necessary to support the CASE IT Business Continuity Plan.
   - A fully implemented Center exists off campus housing all of the redundant equipment and data necessary to support the Case ITS Business Recovery Plan.

5. Sustainable plan for production, development, and redundancy of IT equipment.
   - Plan in place
   - Rate of uptime is established as the primary indicator of success.

Measuring Outcomes: (cont.)

We have included as an Appendix to this document some of the measures by which we evaluated our progress through our last Five Year Strategic Framework: 2002-2007.
6. Continuous upgrades and renewal of fiber backbone infrastructure and related electronics.
   - A fully redundant network of fiber backbone exists from the Core out to the distribution level of the Case network.
   - Continually upgrade fiber backbone Infrastructure to distribution level of Case network.

7. Contingency planning.
   - Operational budget for periodic replacement and maintenance of all production IT infrastructure equipment and software as defined in the CASE ITS Business Continuity Plan is executed.
   - A formalized and practiced contingency plan for all information technology services is provided to the Case Community.

8. Augmentation of information security services.
   - ID management requirements and priorities have buy in from key stakeholders.
   - Five possible solutions to known requirements by the end of summer 2007.
   - Three limited scope pilot projects implemented.
   - Delivery of a solution optimistically timed to support the deployment of the PeopleSoft Student System.
Evaluating Our Progress
(continued)

2002-2007 Outcomes:
In 2002, Information Technology Services published their first Five Year Strategic Planning Framework. Periodically over that five year span, we undertook to measure a variety of changes in service and our customers' perception of service.

The charts and graphs in this section comprise our Scorecard for that 2002-2007 Framework. They represent the sort of Outcomes Measures you can anticipate seeing as we progress through the 2007-2012 Five Year Strategic Planning Framework.

2002-2007 Overall Satisfaction With ITS

Question: On a 1-5 scale with 1 being lowest and 5 being highest, what is your overall satisfaction with the services, program offering and support offered by ITS? Score 4+5 (Satisfied+Very Satisfied) reflected in chart as noted.

n= 2089-3064 respondents with no significant difference by user type

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<th>Year</th>
<th>Satisfaction</th>
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<td>2003-04</td>
<td>57%</td>
</tr>
<tr>
<td>2004-05</td>
<td>74%</td>
</tr>
<tr>
<td>2005-06</td>
<td>75%</td>
</tr>
<tr>
<td>2006-07</td>
<td>77%</td>
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2002-2007 Key Indicators

Email Services Uptime (calendar year)

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<th>Year</th>
<th>Uptime</th>
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<tr>
<td>2004</td>
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<td>2005</td>
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<td>2006</td>
<td>99.93%</td>
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<tr>
<td>Jan to March 2007</td>
<td>99.99%</td>
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Evaluating Our Progress (continued)

2002-2007 Key Indicators (cont.)

Number of Technology Enhanced Classrooms

- 2003: 36
- 2004: 80
- 2005: 110
- 2006: 150
- Jan to March 2007: 160

Average Simultaneous Wireless Users on the Case Network (average month of March for each year)

- March, 2004: 800
- March, 2005: 1180
- March, 2006: 1425
- March, 2007: 1825

Projects Using the Academic Research Cluster HPC

- 2005: 10
- 2006: 33
- Jan to March 2007: 37

MyCase Portal Sessions (total log-ins in calendar year)

- 2005: 1,440,500
- 2006: 7,300,000
- Jan to March 2007: 2,100,000
Evaluating Our Progress
(continued)

2002-2007 Key Indicators (cont.)

Average Call Answer Time at Help Desk [PerceptIS]
(seconds by live human being, average month of March for each year)

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<tr>
<th>Year</th>
<th>Time (seconds)</th>
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<td>2005</td>
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<td>2006</td>
<td>27</td>
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<tr>
<td>2007</td>
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Bloggers at blog.case.edu

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<th>Year</th>
<th>Total No. of Bloggers</th>
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<td>0</td>
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<tr>
<td>2006</td>
<td>1180</td>
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<td>1720</td>
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Total Commodity Bandwidth Consumption Mb/s

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<th>Consumption (Mb/s)</th>
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<td>36</td>
</tr>
<tr>
<td>2003</td>
<td>54</td>
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<td>2005</td>
<td>250</td>
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<td>2006</td>
<td>350</td>
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<tr>
<td>Jan to Mar 2007</td>
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Software Center Downloads

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</tr>
<tr>
<td>2003</td>
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</tr>
<tr>
<td>2006</td>
<td>79,000</td>
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<tr>
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