Strategic IT Review and Improvement Strategies

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Contents

- **Project Methodology**

- **Stakeholder Technology Needs Assessment**

- **Technology Infrastructure and Organization Assessment**

- **Peer Institution Analysis**

- **Improvement Strategies**

This Strategic IT Review report provides the findings of the current state stakeholders needs and IT infrastructure assessment and our strategies for improving the IT environment at NMSU.

"Where Are We Today?"
The Assessment

Step 1: Project Startup / Planning

Step 2: Assess NMSU's Information Technology Environment

    A. Assess the Institution's Stakeholder Technology Needs

    B. Assess the Institution's Technology Infrastructure (Desktop, Servers, WAN/LAN/WLAN, Software)

    C. Document Current IT Assessment

Step 3: Identify IT Improvement Strategies

We conducted a large number of stakeholder interviews to better understand New Mexico State University's IT environment.

- Library
- Financial Systems Admin
- Registrar, Admissions & Fin. Aid
- Auxiliary Services
- ACANS
- HR
- Student Tech Advisory Committee
- **NMSU Student, Faculty and Staff Focus Groups**
- Distance Education
- IT Directors
- Research and PSL
- Faculty Advisory Board
- Community College Presidents
- ICT Managers
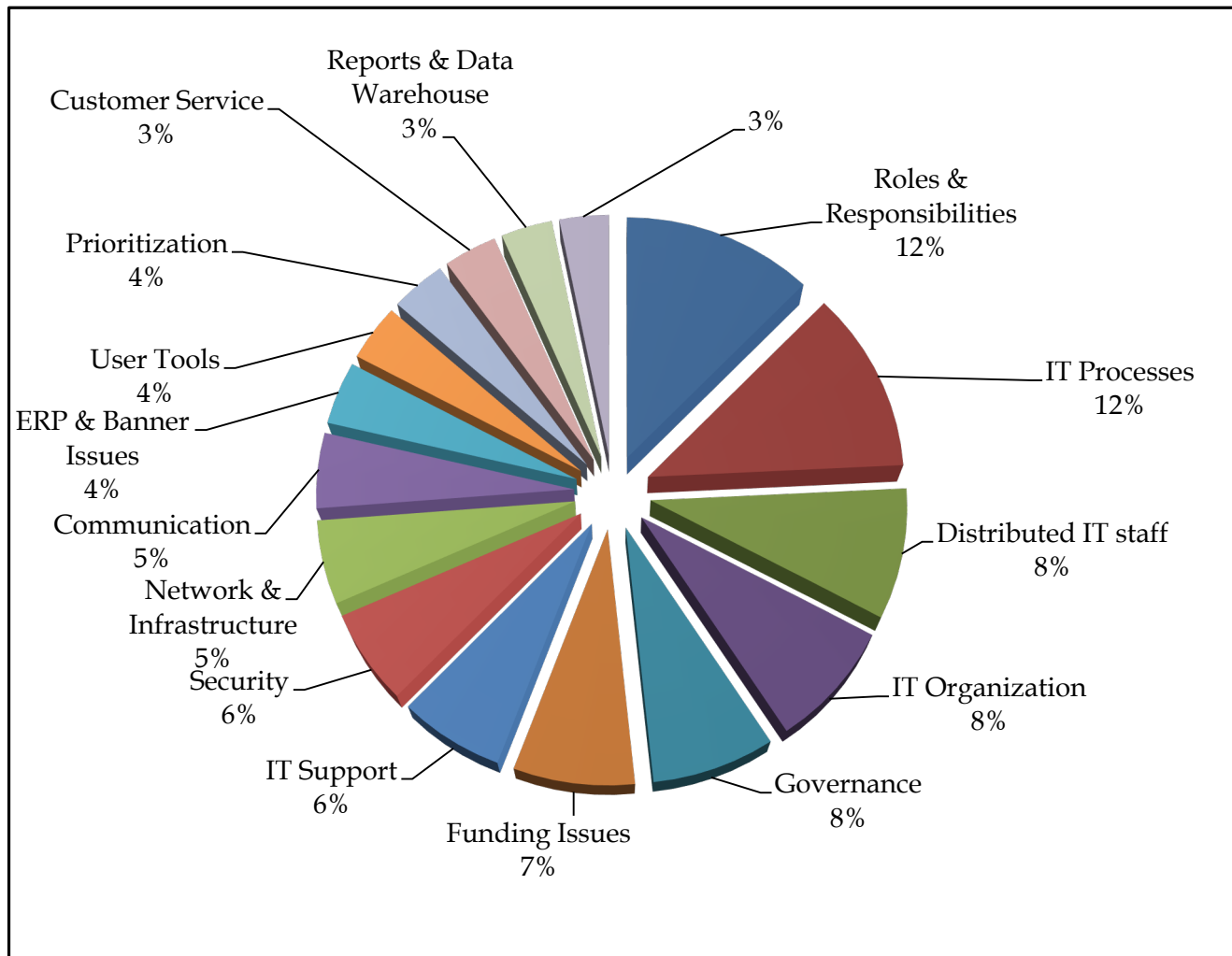- Student Information Mgmt.
- Admin. and Finance
- IT Security and Audit Services
- Facilities
- ICT Staff

We collected and analyzed over 1,000 interview comments, covering a wide range of potential issue areas.

Pie chart of issue areas:
- Roles & Responsibilities 12%
- IT Processes 12%
- Distributed IT staff 8%
- IT Organization 8%
- Governance 8%
- Funding Issues 7%
- IT Support 6%
- Security 6%
- Network & Infrastructure 5%
- Communication 5%
- ERP & Banner Issues 4%
- User Tools 4%
- Prioritization 4%
- Customer Service 3%
- Reports & Data Warehouse 3%
- 3%

NOTE: User comments tend to discuss technology challenges without a focus on the owning organization for a particular technology or support service.

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NMSU's commitment to and investment in technology would be strengthened by a more formalized technology vision and plan.

Challenges

- NMSU presents a unique vision challenge because of the diverse components that make up the University – they include a traditional 4-year University, 4 Community Colleges, a strong research community, the Physical Science Laboratory (PSL), a growing distance education program, etc.

- The University is not planning a consolidated technological future for ALL of the systems it's using (i.e. library, student administration, learning management system, finance, human resources, etc.).

- "There is no real plan to get to the goals of the (University) vision".

- There is no alignment of the IT department's goals with the University's goals (it's not clear that either group knows each other's goals).

- NMSU has no long-term IT Strategic Plan to focus IT spending and staff on high-value / high-priority projects.

- There appears to be no unifying long term vision for focusing technology resources.

The lack of a working IT governance structure or a stakeholder-driven long-term strategic IT plan prevents NMSU from focusing its IT resources and investments on NMSU's highest priority needs.

Strengths

- NMSU has 2 relatively new collaborative groups in the FACT and STAC, although the model has not been integrated into ICT's planning.

- NMSU used to have a project prioritization committee that had some success before it fell apart due to executive overrides and loss of committee input/empowerment.

Challenges

- NMSU stakeholders and IT personnel seem to agree that no true IT governance model exists to help identify, prioritize and manage IT investments and projects.
  - This gap puts ICT in the position of having to constantly prioritize user needs.
  - ICT doesn't say "no" (unclear if it is allowed to say "no") nor are they always willing to explain why something might be "too hard" to get done in a timely manner.
  - Project requests are not centrally aggregated or prioritized into an overall project delivery plan.
  - NMSU is in the process of identifying a "project list" but there is no model as to what to do with the list once it is developed.
  - Users call ICT staff directly to solve problems – management has little/no visibility to this workload.

- NMSU has no long-term IT Strategic Plan to focus IT workload and investments on campus-prioritized high-value projects.
  - There appears to be no unifying long term vision for focusing technology efforts or resources.

NMSU lacks an effective way to communicate with students, faculty and staff about technology changes.

Strengths

- Many staff and faculty users feel that communication about planned maintenance has improved recently. More notification of server downtime have been communicated to users. Conversely, there are still some users who think this type of communication is still lacking.

- Some communication channels exist through the STAC and FACT groups but it's not clear that the information is disseminated widely enough via those groups, nor is it clear that the groups have a planned role as communicators of what they learn/decide.

- A significant improvement in student IT communications has been seen in the past year.
  - In the past, students were bombarded with University emails, this year events/information has been posted to a site that students can subscribe to – significantly lessening the number of email messages that students receive – this has been very successful and appreciated by students.

Challenges

- There are a variety of issues with IT communications:
  - Internally within ICT;
  - Between ICT and the rest of the University (including the community colleges); and
  - Between ICT and key groups (other non-ICT IT departments, etc.)
- There is no one person or area responsible for ICT communication so its appears random and spotty.

IT roles and responsibilities are not well defined nor are they well understood by department and University staff.

Strengths

- Many of the departments feel they are somewhat self-contained from an IT support perspective, not really requiring ICT to make their business operations successful.

- Most people would agree that ICT has responsibility for networks, most servers, and enterprise applications.

Challenges

- Stakeholders really want to understand ICT responsibilities better.

- There are many projects around campus that will have an impact on ICT, but ICT is not even aware the project is occurring.

- There are many opportunities to collaborate more effectively on campus but no one understands how to make this work – who do we talk to, when should they be involved, etc.? – there is no real process to engage the right people at the right time.

- ICT staff feel they are in a constant state of fire-fighting, making it very difficult to complete projects in a timely fashion. Departments are making hardware and software purchases which are then given, in many instances, to ICT for ongoing support.

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A variety of culture issues were identified - interestingly different departments mentioned the same things about each other!

Strengths

- During the course of the assessment, almost all people indicated that they are open to change and willing to do the right things to better the institution.

- There are good people with good intentions throughout the university.

- ICT staff are dedicated, committed and have a strong work ethic.

- ICT enjoys a significant amount of staff longevity.

Challenges

- Many people view IT at NMSU, and ICT to some extent, as a commodity and not as a strategic resource / partner.

- The continuing growth of the student body and the impending reductions in overall staffing levels from the restructuring are creating tension throughout the university.

- ICT is perceived internally and externally as being very 'silo'ed'.

- Within ICT, we saw little recognition, understanding or appreciation of other ICT department's workload, project schedules, staffing issues, timelines, etc.

- Younger staff are sometimes perceived as not respecting older staff and older staff sometimes don't respect younger staff.

- There is a common perception among all IT departments that THEIR department provides the best customer service, while the other departments do not.

NMSU's processes and decentralized approach to many things leads to bad data being entered into systems.

Challenges

- There are many decentralized processes that exist across campus that lead to bad data being entered into the system.

  - There are at least six different admissions points across the campuses, each using business processes, creating inconsistent data input – this combined with a lack of system edit checking within parts of Banner, leads to "garbage in / garbage out" when it comes to data and reporting

  - The hiring process is decentralized so each department does the actual data entry work and HR is the final approver. Many times HR needs to fix departmental data entry.

    - There are 4 or 5 different systems to get an employee hired into the school which makes training more difficult, leading to data inconsistencies.

- There are many items that need to be tracked by departments but the data fields do not exist in Banner and it's not clear how to make the changes needed to get them tracked.

Initial and on-going staff training and development are a big challenge for NMSU

Strengths

- Finance has a classroom training program that has worked well.

- There is a Training Center with Human Resources but it has been slow to add technical training to its offerings.

Challenges

- There is no formal training process or programs: all training is "on-the-job" or self taught.

- Cross-training is acknowledged as a key element that is desperately needed in ICT (both ICT and outside users made this observation) but it is currently non-existent.

- Staff skills assessments have not been done in ICT and most campus departments.

- Staff development funds (if there are any) are poorly understood by some business unit managers and staff are not often encouraged to utilize the funds for skills development. The lack of staff development hurts staff morale, particularly in ICT where the staff know that maintaining their technical skills is critical to their professional growth.

- Faculty do not attend scheduled training classes that may be available; they often request on-demand personalized service to get up to speed.

There are many challenges which impact the ability of NMSU to provide consistent classroom technology across the campus.

Strengths

- NMSU has 263 out of 400 classrooms that have a standard technology setup, a percentage that similar large universities would love to have.

- Clicker technology is available in many classrooms across the campus and the students find this technology valuable to their learning.

Challenges

- Only 100 of the 400 classrooms are centrally scheduled which leads to difficulty in providing the right room at the right time to the right faculty.

- While there may be a standard classroom technology setup, many departments either require or just add their own technology within a classroom, causing support issues when equipment fails or when faculty outside of their departments try to use the technology.

- Clicker technology is not standardized across the campus which causes great frustration amongst the faculty.
  - This caused some students to tell us: "NMSU is kinda crazy! Just pick one!"

The community colleges seem to exist fairly independently with little direct involvement with ICT.

Strengths

- Community colleges have their own internal ICT staff who take care of the labs on the community college campuses.

- The Finance System Admins also help the community colleges with some of their record and document management needs.

Challenges

- Some of the community college staff not have direct access to the operational data store (ODS) in order to produce the reports that are necessary to operate effectively.

- One campus expressed a desire to change their email domain name but the change requires ICT involvement which they have not been able to secure to date.

- Each campus is funded independently so they have to come up with a funding source for any significant projects they choose to do.

- Community colleges are often out of the loop when/if there are training sessions.

- Community colleges also don't feel like they need approval for IT projects, causing them to do things that may not fit in with the rest of the University and impacting ICT's ability to support them, if needed.

Even though the campus has been using Banner for almost 6 years, NMSU is still experiencing Banner growing pains.

Strengths

- The last major upgrade had better planning than previously upgrades.

Challenges

- With the arrival of Banner, the campus went from 400 student system users to over 2,000.

- There were no real functional requirements when Banner was selected. It started as an HR solution and ballooned to include Finance and Student.

- NMSU had a "vanilla" implementation with no modifications and NMSU completed business process analysis as best as it could. There are still a lot of shadow systems.

- It is unclear how new Banner gets deployed. The functional areas have taken the responsibility of looking at new functionality outside of big releases but it is unclear how something goes from new functionality all the way to actual utilization of the new functionality in production.

- Users feel the Banner system is very complex and that it takes significant time for a new user to understand it all.

- ICT does not document procedures, so every release relives many of the same problems.

- Finance does not even use Banner to produce bills; they gather all the information in Banner and then use a 3rd party product to produce the bill.

- There is no data warehouse; Cognos is really the reporting solution but training is limited, causing usage to be less than complete at this point.

Distance Education IT support is not well thought out, creating inconsistent support levels across the campus.

Strengths

- There is a program called Online Course Improvement Program (OCIP) which helps faculty teach faculty online capabilities. The students have provided the funding for this.
- The Teaching Academy has traditionally focused on face to face teaching but it is now moving to online teaching.
- There is a professional development fellowship which allows faculty to learn online capabilities. There is a requirement to "give back" to the University at the end of this fellowship.

Challenges

- Some people said there is an instructional designer on staff who is available to help faculty with the development of courses but there is a cost to using this person, providing a disincentive to getting any help. Others have said there needs to be some place on campus for faculty to go to learn how to develop online courses.
- There is a significant amount of distance education being done but many feel that it is poorly executed and not well supported.
- For much of the first month of a distance course, the problems are centered around "I can't get this to work on my computer!"
- There are 4,000 courses per semester that utilize technology with only 2-4 people to support them.

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Users are generally dissatisfied with the chargeback funding model used by ICT and choose alternative ways to get IT services.

Strengths

- The students pay a technology fee and the Student Technology Advisory Committee (STAC) helps decide how the fee is utilized by the University. University staff have been very pleased with how the fee is distributed.
  - o The student fee funds a significant portion of the cost of the Learning Management System (LMS).

Challenges

- There is a phone chargeback funding model. The chargeback rates have not gone up since 1997, but the expenses to maintain the phone infrastructure have increased.
- Departments are responsible for the costs of technology in the buildings and classrooms.
  - o It is unclear who "owns" some buildings so funding upgrades for these buildings has become a real problem.
- The chargeback model used by ICT is a huge disincentive for the departments to utilize their services. Many departments have just done things on their own instead of using ICT, which in turn drives up the cost for remaining users.
  - o There are charges for software, telecomm, and desktop support.
  - o ICT is going to begin charging for each podium in a classroom.
  - o The chargeback model creates additional spending at the university level

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While some areas within ICT regularly reach out to communicate with users, others areas do not. Internal communications (within ICT) is also a challenge.

Strengths

- Some ICT areas send emails to faculty, staff, and students regarding planned service outages.
- Some areas report that communications regarding server down time has started to improve recently.

Challenges

- There is no common strategy for communicating within ICT and between ICT and its users
    - Maintenance and support communications sometimes go out in simple email messages and other times via RT Tracker update emails.
    - Website updates and electronic digital displays are not consistently used.
- The website indexing and search tools are difficult to use and hamper communication effectiveness.
- ICT employees look to management to communicate project status, strategy and big initiatives to users, but many staff feel that it is not occurring effectively.
- Internal communications within ICT remain a huge challenge – some areas report that they feels as though they are working at cross-purposes with other ICT groups, due to ill-defined projects and lack of consistent communication.
- There are no clear lines of responsibility and accountability for communications, which frustrates both ICT staff and managers.
- The Help Desk does not use FAQ functionality in RT Tracker, leading to the perception that many issues are solved over and over again, with differing results and responses.
- There is a feeling that IT policies are not clear and not communicated, and many users feel that there is misunderstanding on what is policy and what is not policy.

ICT has created a new staff position in charge of security and compliance. Policies, procedures, enforcement and disciplinary actions need work.

Strengths

- ICT has previously conducted various penetration tests and security audits and is currently preparing for another round of testing.
- ICT has recently hired a new staff position to develop security and compliance policies and procedures.
- Other areas around campus, such as facilities and PSL are increasing their data and physical security procedures and tools.
- Formal processes currently exist between HR and ICT to grant system/data access to new staff.

Challenges

- Apart from the new compliance position, there was no previous person charged with security.
  - Staff from administrative and academic departments do not know who to consult about security or access best practices.
  - The new compliance position reports to the CIO, but has no independent links to internal audit.
- There are no consistently followed procedures for formally auditing and rescinding individual access to data, systems and facilities as they change positions or leave the university.
- There are several servers with shared access, some of which may contain student or other confidential information. Access policy and enforcement on these machines needs deeper scrutiny.
- Research and PSL are very concerned about the possibility of a security breach (external and internal) and are looking for greater university leadership for developing standards and processes.
- Several staff stated that there appears to be a lack of disciplinary action against security offenders.
- Data retention policies and archiving procedures need to be developed, disseminated and enforced.
- There are multiple, unsynchronized tracking systems, with no one coordinating who has access to what.
  - Need to create more automated triggers for changing physical access security.

Tech support roles and responsibilities are blurry within ICT and between ICT and distributed technology areas. Tracking tools are not consistently used.

Strengths

• Some areas within ICT are starting to use a central tracking system for support requests (RT Tracker).

• Some departments report having "go-to" and emergency contacts in ICT to help with pressing issues.

Challenges

• RT Tracker is the primary support ticket tracking tool, although many features such as FAQs, workflow routing and escalation functions are not used, or are not used consistently.
  - There is no expectation that a ticket submitted via RT Tracker will be looked at or assigned to a staff.
  - We were told that unassigned tickets often sit for weeks; the system will message the submitter after a long period of time and ask them to resubmit.

• Other areas use different tools (e.g. Pinnacle, AIMS, independent database, etc.).

• Some areas of ICT do not use any support tracking tools other than email and phone.

• There is no tiered support structure – escalation processes are unclear.

• There are no service level agreements with areas paying for ICT support.

• There are no published service level goals for general ICT support.

• Many areas report confusion on who to contact for support – some areas have departmental support for desktops, while ICT maintains telecom, servers and enterprise systems. Departments often spend a lot of time trying to figure out where to go for various support needs.

• Library and academic areas end up providing significant student desktop support when ICT helpdesk is closed, unavailable or does not respond.

Many ICT staff expressed frustration with ICT management. These frustrations span all levels within the ICT organization.

Strengths

- The current CIO seems to be held in high regard across the state based on some of the roles he has taken on and shown results.

- Everyone outside ICT seems to like the ICT employees (CIO, Directors, Managers, Staff) – "good people, working hard".

Challenges

- People feel that the CIO is never willing (or able) to say "no" – the answer always seems to be "yes" even when delivering results is impossible or difficult and may impact other efforts already underway.

- The department operates in a reactive mode, rarely thinking the solution through with detailed planning before delivering a solution that may be less than optimal.

- Users have been told repeatedly by ICT that "we shot ourselves in the foot" and don't seem to be learning from their mistakes.

- Many ICT employees believe their organization is weak within the university structure and is not able to communicate effectively with users who want something that is the wrong tool or that doesn't effectively work within the existing technology at the university.

Many departments around campus have developed their own decentralized IT support staffs to manage unmet user requests.

Strengths

- People new to the university expected to find a struggle between central and de-central IT support but they have not found that to be the case. Both groups seem to co-exist somewhat harmoniously – something that is 'rare' at most other schools.

- The decentralized staff has developed many solutions because they have the funding and the time, which ICT does not, to do most things that their users request.

- The decentralized staff often have the opportunity and time to better understand the business processes than ICT does or can.

Challenges

- There are business analysts in the functional areas that try to bridge the gap between ICT and the business units, but their role is not really defined completely, or may not be understood completely by all parties.

- Some decentralized staff also have their own ticketing systems to track support requests.

- Many areas have their own servers as well as Active Directory environments to manage system access.

- There needs to be a strategy that supports communication between the decentralized and centralized staff so that ideas, solutions, projects, status, etc. can be shared between the groups to eliminate duplication of effort and share information

Centralized data centers with common backup and security tools are gaining traction and usage, although the chargeback fees impact this.

Strengths

- Centralized monitoring and backup and configuration tools are being deployed to many of the servers that are managed by ICT.
  - Server consolidation and a move toward virtualized servers helps in configuration standards and support efficiencies.
- High capacity networking infrastructure shared between NMSU, UNM and NM Tech.
- The data center has a shared access room where departments can place their own servers and utilize ICT security and backup services. ICT also provides storage space on a fee basis.

Challenges

- The Santa Fe site, several community colleges and many rural sites struggle with to gain access to high-speed networking.
- The entire Networking and Telecom group is funded on a chargeback model, possibly discouraging some academic departments from utilizing ICT services due to cost.
- Service billing for all networking, server support and telecom is displayed as "Telecom" and appears as lump some charges to departments – causing great confusion and pushback on what's included, or should be included, in the fee.
- The secondary data center is cramped and prone to flooding, creating a risk of data loss.
- Rootkit scans are not currently being done.
- Capacity expansion and planning appears to be more reactive to the latest crisis, than proactive.
- Coordination and communication with administrative units on server freezes, refreshes and restarts is an ongoing challenge.

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ICT is plagued with low morale at many levels, distrust amongst each other and some level of distrust towards management.

Strengths

- Executives believe that ICT has handled the organizational changes well.
- An audit position was converted to the IT compliance officer position – this position has responsibility for rules and regulations and working with the security team.
- The basic ICT organization seems well structured, with clearly defined roles and we did not identify any obvious understaffing situations.

Challenges

- ICT staff have experienced a major drop in morale with a recent change requiring a dress code and new needs for approval of items that didn't previously require approvals.
  - Additional challenges that were often stated include lack of direction from above and poor communication amongst people at the same level.
  - One group stated that people are motivated more by personally doing a good job, than by doing right for the group or the University.
- Most managers don't feel empowered to control their groups – many feel they will be overruled and/or ignored with no recourse for getting their staffs to do the things they want them to do.
  - There is a lack of trust between many managers and their respective staff.
- The latest Mercer report continues to drive ill feelings in the staff – changes were made and then rolled back and many people were demoted in the process. No one has good things to say about that entire experience. Both managers and staff voiced issues with the process.
- There were many statements by managers that they needed additional headcount just to keep up with user support, but it was hard in our short project to make specific hiring recommendations.

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The Educause Core Data Survey was used to compare New Mexico State University to its Peers.

NMSU and its Peers that were used for our Peer Review:

- Colorado State University
- Iowa State University
- Kansas State University
- Montana State University Billings *
- New Mexico State University
- Oklahoma State University
- The University of Arizona
- University of Idaho
- University of New Mexico
- University of Texas at El Paso
- University of Wyoming

NOTE: Montana State is a very small institution compared to this peer list.

From 2011 EDUCAUSE Core Data Survey

Background Data for the Peer Review

General Institutional Comparison Information

Category	Mean*	Median*	NMSU
Student Headcount	21,492	22,845	18,497
Student FTE	18,365	19,158	15,944
Faculty and staff Headcount	5,262	4,995	4,361
Total campus expenses	$ 701,009,833	$ 615,479,581	$ 496,522,211

Includes NMSU

These general institutional data will be used to calculate IT support ratios.

From 2011 EDUCAUSE Core Data Survey

Central IT Budget / Spending Comparisons

2011 Central IT Budget and Central IT Spending Comparisons:

Category		Mean	Median	NMSU
Centralized IT Budget	$	21,082,866	$ 14,706,324	$ 13,755,219
Centralized IT Budget as Percent of Total University Expenses		3.0%	2.4%	2.8%
Doctoral Institution (DR EXT & DR INT)		3.0%		

Centralized IT Spending	$	18,536,335	$ 14,570,820	$ 12,689,881
Centralized IT Spending as Percent of Total University Expenses		2.6%	2.4%	2.6%

From 2011 EDUCAUSE Core Data Survey

Analysis: In 2011, NMSU's Central IT Budget appeared consistent with that of its peers as a percent of total University Operating Expenses.

NMSU, The University of Arizona, UT El Paso and Kansas State all experienced significant IT spending below their budgets.

IT Staffing and Service

Category	Mean	Median	NMSU	DR (Int & Ext)
Total central IT funding per institutional FTE (students, faculty, and staff)	$672	$764	$555	$981
Centralized IT Professional Staff FTE	132	118	100	
Centralized IT Student FTE	34	33	45	
Decentralized IT Staff FTE	160	113	120	
Total IT Staff (Centralized and decentralized, including centralized students)	283	224	265	
Student FTE Per Central FTE Staff	154	149	160	
Student FTE Per Total IT Staff	81	73	60	
Student Workers as % of Total Central IT Staff	23.6%	22.4%	31.1%	
Public Help Desk Hours Per Week	84	69	66	

From 2011 EDUCAUSE Core Data Survey

Analysis: NMSU Centralized IT Staff is smaller than many of its peers in raw numbers but in various support ratios, it's comparable. NMSU's relies more on student IT workers than do its peer schools.

NMSU's Help desk hours are 18 hours per week fewer than the average of its peers.

Campus Adoption of Technology...

Category	Mean	Median	NMSU
Number of Campus Owned/Leased Computers	15,016	10,000	11,000
Campus Owned/Leased Computers Per FTE Student	0.76	0.70	0.69
Computers Owned/Leased Computers Per Total Campus Headcount	0.76	0.70	0.59

Analysis: NMSU has, for computers per student FTE, 5% below the peer average and, for computers per student headcount, 15% lower machines than it's peers.

With the trends toward more student laptops coming to campus and campuses looking at virtual desktop initiatives, these numbers would not seem to be problematic. A study of student wait-times for a lab seat would provide more definitive data to see if these lower numbers are a problem.

From 2011 EDUCAUSE Core Data Survey

NMSU's Senior IT Officer reporting structure is typical of its peers.

Reports to:	Count	Percent
President, Chancellor, CEO	2	18%
Highest Ranking Academic Officer (Provost, Academic VP, Dean)	4	36%
Highest Ranking Business Officer (Business Officer, CFO)	5	46%

From 2011 EDUCAUSE Core Data Survey

President / Chancellor 18%

Highest Business Officer 46%

Highest Academic Officer 36%
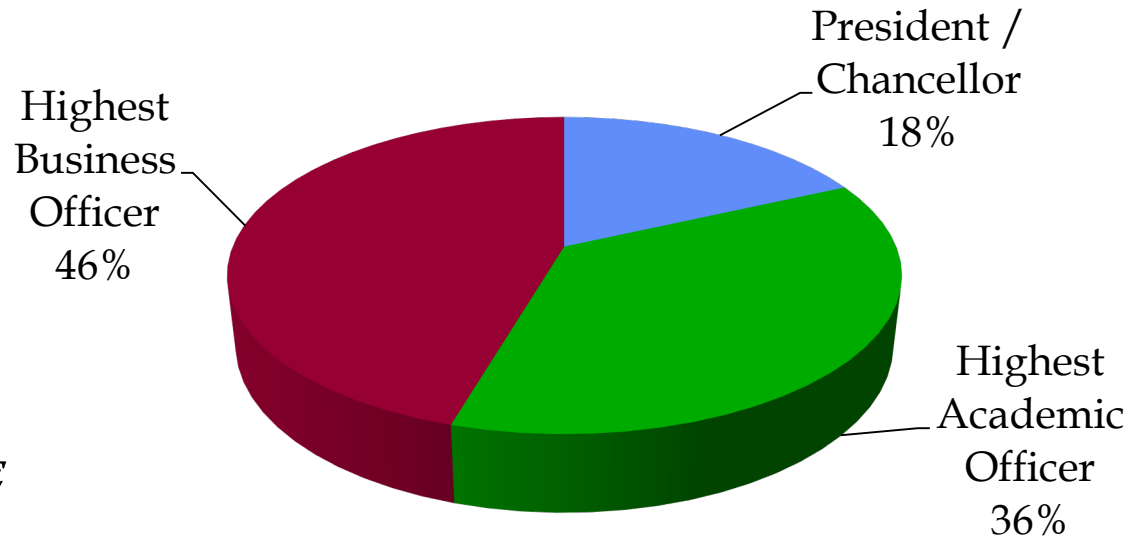
IT Strategic Planning and IT Security...

- 72.7 Percent of Peer Group include IT as part of the Campus Strategic Plan, unlike NMSU.

- 54.6 Percent of Peer Group have a stand-alone IT Strategic Plan, including NMSU

- 45.5 Percent of Peer Group have a dedicated Information Security Officer, including NMSU

From 2011 EDUCAUSE Core Data Survey

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The University and ICT need to take steps to try to improve the morale amongst ICT staff at all levels.

- Low morale within the ICT unit was evident in most ICT meetings during our visit. Many staff at different levels openly stated that low morale that exists within the department. In order for NMSU to effectively move forward, this issue must be addressed.

- Focus groups should be conducted by an independent party to clearly document the core of the reasons behind the low morale. Some of the things we heard as reasons for low morale were things like the change in dress code, the execution of the Mercer study (including the implementation of recommendations), the move of ICT to the finance group, and a sense of a lack of executive support.

- Most importantly, the independent party need to gather input from the ICT staff on what steps they think should be taken to improve morale.

- This study cannot be done by simply having some group run focus groups, take notes, and go off and develop a "solution". The ICT staff must be actively involved and feel they are part of the solution, not the target of the solution.

- There was a lot of discussion with managers about the 'demotion' of IT out of the university cabinet and the meaning of this action. Since most of the challenges that we saw were occurring before the reporting change, it doesn't seem that this made any difference. Effectively addressing the governance and planning needs that were identified will have a bigger impact on IT than changing its reporting manager.

Many of the issues that we encountered could be traced back to how the University funds technology and its support. We recommend that NMSU consider other approaches to funding technology.

- The network chargeback approach used at NMSU is outdated in this day and age.
  - Because network and telecommunications is a profit center, many users choose to do things so they don't incur a cost. The idea of departments sharing telephones may save a few dollars today but causes more work later on as people are taking / losing messages for others, etc.
  - Users may go off and implement their own networks, which could create many support issues down the road.

- The chargebacks that ICT has for application development causes stakeholders to look at alternate solutions for getting their work done. The money is being spent on technology, it's just coming out of a different bucket.

- NMSU should conduct a detailed study on its technology spending in order to get a better understanding for how much money is being spent on technology across the institution, including the community colleges.

- The University should establish a better way to fund technology in the future
  - Having the students help determine priorities is not a bad idea. The precedent has been established and will be difficult to change; however, having the University's LMS dependent on students funding it is not a good idea.
  - Taking the money "off the top" for basic infrastructure would cause short term complaints, but would, in the long run, stop actions that don't save NMSU real money.
    - A flat $/staff rate, taken off the top, should be established to cover basic IT services
    - A funding review committee could annually review the amount to ensure that it covers the actual costs and no more.

To start improving ICT's effectiveness as well as its reputation with its stakeholders, it's important for NMSU to develop and deploy an IT Governance structure and associated planning processes.

- This Governance model should cover all IT services across NMSU, including administrative systems, instructional technology, websites and intranets, and other technology-based services.

- An effective IT Governance model needs to be established to develop a Strategic IT Plan that prioritizes IT investments and to guide IT decision-making for all projects. At a minimum, this model should include the following:

  o Executive oversight for the strategic IT investments being deployed by ICT

  o A process for identifying potential future projects and prioritizing / scheduling them.

  o Tactical oversight from the representative departments to discuss and prioritize project requests in a collaborative fashion – this process needs to ensure that the needs of all NMSU departments are identified and prioritized.

  o An architectural review board which helps to identify new technology standards to be used across the University, particularly for enterprise systems.

  o Defined support roles and responsibilities for ICT and the departmental units.

  o Clear decision-making and escalation procedures to keep projects moving.

- The CIO is well-respected within the community and should be able to say "No" for requests that can't be done without reprioritizing other projects – they should be sent to the governance process for prioritization

  o The strategic project list should be built with the limited ICT staff resources in mind.

The IT Governance structure should focus on the major NMSU areas requiring focused IT investments and require broad-based stakeholder participation within Strategic IT Planning and IT investment oversight.

These committees should replace all current IT planning committees.

Executive Technology Committee

Focused on:
- Initiative Selection
- Budget Management
- Annual IT Strategic Plan
- Policy Review/Approval

Academic & Research Technology Committee

Institutional Management Technology Committee

Technology Infrastructure Committee

Focused on:
- Learning Technology
- Research Technology
- Teaching Technology
- Classroom Technology
- On-Line Learning Tech.
- Library Technology
- Academic Tech. Policies

Focused on:
- Student Information Systems
- Finance & HR/Payroll Systems
- Management Reporting Tech.
- Housing, Public Safety, …
- Institutional Tech. Policies
- NMSU Web Site

Focused on:
- IT Security
- LAN/WAN Resources
- Data Center Resources
- Security Tech. Policies
- IT Support Strategies
- IT Standards

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The composition of the Governance structure should include all appropriate technology groups, as well as having well defined roles.

Planning Committees	Executive Technology Committee	Academic & Research Technology Committee	Institutional Management Technology Committee	Technology Infrastructure Committee
Potential Members	• EVP & Provost (Chair) • VP for Research (co-Chair) • SVP for Admin (Chair) • VP for Academic Affairs • VP University Advancement • Faculty Senate Chair • Dean's Council Rep	• EVP & Provost (co-Chair) • VP for Research (co-Chair) • VP for Academic Affairs • Academic Deans • Library Dean • Academic Staff • Faculty / PI Reps *Ex officio:* • ICT Director	• SVP for Admin (Chair) • VP University Advancement • AVP, Institutional Analysis • VP for Student Affairs & Enrollment Management • University Registrar • Director, Human Resources • Director of Campus Facilities • Dean, Graduate School • Financial Aid Director • Library Rep • Faculty Rep • ICT Director	• CIO (Chair) • ICT Directors • Dept. IT Managers • Faculty Reps • Facilities Planning & Management Rep • Library Rep • Auxiliary Services
Size	8 - 9	12-20	8 - 12	7 - 9

- These committees are designed to set policy, prioritize opportunities and make decisions, where applicable - they are not intended to do all the necessary research and/or work
- It is critically important that meeting agendas be strictly controlled to ensure that discussion topics are at a level appropriate for the committee membership
- These are working committees with scheduled meetings, agendas and homework assignments
- Consistent participation by members is encouraged, substitutions (or sending replacements) must be strongly discouraged
- Committee chairs are expected to manage the interaction with the other committees as appropriate

NMSU should conduct an annual IT planning process that creates a prioritized IT investment/budget plan for the coming year.

The Strategic IT Planning Process should:

- Be managed by the CIO with participation by the entire NMSU community.
- Work with all major stakeholder groups, to ensure that a complete set of potential IT projects is considered.
- Prioritize potential projects based on their ability to support NMSU's strategic goals and initiatives.
- Schedule prioritized projects over a three to five year planning horizon.

- Be integrated into the NMSU institutional strategic planning and budget planning cycles with broad communications to the NMSU community about the funded projects for the coming year.
- Establish a deployment schedule that matches IT's ability to accomplish the projects.
- Carefully document goals, costs (on-going and one-time) and benefits for projects that will begin within the coming year.
- Guide IT to develop and publish its current portfolio of services to educate users on the types of services that are available to help them.
- Be revalidated each year by the NMSU Executive and Governance groups and reviewed in-depth every two years.
- Serve as an overall IT governance process to help make decisions about IT priorities, provide implementation oversight, and help improve technology-related communications across the entire NMSU community.
- This process will provide users with what they need, not just more tools.

	Yr0	Yr1	Yr2	Yr3	Yr4	Yr5
User-Facing Initiatives						

IT Infrastructure Initiatives

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IT needs to develop a sound and effective two-way communications plan to provide users with knowledge related to the activities of IT and to learn what users want and need.

NMSU should:

- Develop and communicate the 'catalog' of IT Services that it can provide and support.

- Work with the campus to Refine/Develop and communicate a set of clear IT Policies

- Work with the campus to Refine/Develop and communicate a set of processes for obtaining IT Services.

- Develop a communications plan to provide the right information to users at the right time.
  - The primary purpose of the communications plan is to define, drive and support appropriate actions needed to make the School successful through a variety of two-way communications channels to help IT management know where problems or needs exist.
  - Improving poor communication was one of the major complaints we heard across all the stakeholder groups. This is something that needs to be fixed.

- Regularly update the Communication Plan to reflect the changing IT communication needs of the School – the Plan should be seen as a living document and should focus on:
  - Who's leading each communications effort?
  - Who (stakeholder groups) needs to know what, and when do they need to know?
  - What is the best way to communicate with each stakeholder groups?
  - What are the messages that we want to communicate?
  - How do we communicate these messages in the most effective manner?
  - When should the messages be delivered?

NMSU should develop a unified approach to providing IT support to all users – this could create a cost effective environment for helping NMSU's stakeholders better utilize IT.

NMSU should:

- Develop a 'single point of contact' for IT Support for all stakeholders.
  - o Adopt the Help Desk system for all application related requests ;
  - o Develop formal problem "phone trees" for emergencies during off hours;
  - o Utilize all IT organizations in resolving and closing trouble tickets;
  - o Provide IT support within clearly defined timeframes for help desk, telephone, on-site response and repair support.

- Develop triage checklists for common processes (e.g., Banner access) to ensure quality support.

- Provide refresher training on Banner administration and operations.

- Provide functional training of NMSU enterprise applications, including Banner and the LMS, to Help Desk staff. This should allow the Help Desk to answer common how-to and/or access questions.

Next Steps….

- **Review / Selection / Prioritization of MTC Assessment and Strategies**

- **Establish Deployment Schedule and Assign Ownership Responsibility**

- **Begin implementing NMSU selected MTC Recommendations**