UNLV IT Master Plan
Board of Regents Audit Committee Briefing
June 2015

The UNLV IT Master Plan proposes a new structure for planning, collaboration, and communication that seeks to recognize the full capacity of IT resources across the UNLV community. The Plan is designed to help guide strategic IT priorities and inform critical decisions that support the University's strategic goals.

The Executive Summary from the current draft of the plan is attached. Also attached is a document containing the strategic technology initiatives and associated action items included in the Plan.

The Plan is in the final stages of development and will undergo additional revisions to ensure alignment with UNLV's Top Tier Vision, Mission, Goals and Strategies to be approved within the next few weeks. Consequently, the planning document is currently available only to select members of the campus community through a protected website.

Directions for gaining access to the website containing the most recent version of the plan are included below:

Instructions for Gaining Access to the UNLV IT Master Plan
If you would like to see the most recent version of the UNLV IT Master Plan, please send an email with your request to: lori.temple@unlv.edu You will be provided with a login and password to access the UNLV IT Master Plan webpage at: https://itmasterplan.unlv.edu/

Attachments

UNLV IT Master Plan Executive Summary
UNLV IT Master Plan Strategic Technology Initiatives with Action Items

UNLV IT Master Plan

EXECUTIVE SUMMARY

Purpose and Background

The University of Nevada, Las Vegas (UNLV) has created a University-wide Information Technology (IT) Master Plan. This effort was guided by the leadership of Executive Vice President and Provost, John Valéry White, and was developed with the broad engagement of students, faculty, staff and administration from across the University.

This planning project had multiple phases that included analyzing how IT services were delivered across UNLV, and conducting more than a dozen facilitated stakeholder work sessions to gain input on planning components to help envision what the Plan should achieve. In addition, subsequent planning meetings with senior executives and a cross-functional team of UNLV faculty, students and staff (Core Team) provided direction and clarification to the BerryDunn consultants.

This IT Master Plan proposes a new structure for planning, collaboration, and communication that seeks to recognize the full capacity of IT resources across the UNLV community. The Plan will help guide strategic IT priorities and inform critical decisions that support the University's strategic goals.

Strategic Initiatives in the Plan

The landscape for IT is changing rapidly not only at UNLV but across higher education and beyond. The IT Master Plan addresses opportunities to better align the ability of UNLV's IT service providers to meet the expanding demand for support and services. The Plan's 14 strategic IT initiatives focus UNLV's information technology efforts on supporting the University's three overarching Core Themes: promoting student success, advancing research, fostering inclusion and community engagement. Highlights include:

- Creating effective planning processes to sustain a culture of collaboration within the IT community and across the broader University

- Ensuring adequate resources and executive support for enterprise-level initiatives such as iNtegrate 2, single sign-on, data availability and document management

- Recognizing the need to strengthen information security procedures and practices that will reduce risk and protect data

- Establishing the office of a university-wide Chief Information Officer (CIO) to strengthen the University's IT leadership and ability to leverage the capabilities of approximately 200 campus IT personnel in support of the mission and vision of the institution

- Extending partnerships and utilization of external IT resources from the technology and business community

- Building the IT infrastructure to support a Top Tier research university by increasing mobility, access and scalability

An IT Master Plan Consistent with Trends in Higher Education

The areas of focus described above are consistent with needs and national trends in higher education. According to the 2014 EDUCAUSE Top Ten Issues less than half of all institutions claimed to have technology alignment among leadership (44%) or an effective IT governance structure (32%). In addition, only 37% had an IT Service Catalog. The role and expectations of higher education IT staff needs are changing as well. Third-party resources are being utilized more frequently than ever before to store data, house servers and build applications. This will change the way IT staff are deployed and the skill sets they need. However, these trends do not indicate a reduction in IT staff, rather a change in focus:

> The IT professional of the 21st century must be able to work in cross-functional teams to gain an understanding of the bigger picture and specific requirements… IT staff must be able to effectively communicate and quickly troubleshoot issues by working alone or tapping into broader communities of expertise.

The Plan addresses these fundamental challenges and suggests ways for UNLV to strengthen its multi-faceted IT community.

External Resources and Partners for UNLV

One of the key focus areas for the University and subsequently for technology will be extending UNLV's IT planning and awareness beyond the campus. Several opportunities exist to improve visibility in the community and to work more closely with businesses in the greater Las Vegas area and beyond. Taking advantage of these opportunities will require the University to be proactive in its planning for IT and to seek out relationships that serve the best interests of UNLV.

One example of an external relationship opportunity is the Switch SUPERNAP that provides world-class facilities for housing IT equipment in powerful technology ecosystems with unparalleled connectivity. Switch is active in supporting entrepreneurial activities and is seeking to partner with the local community while it expands its global industry and government customer base.

The proposed CIO position will be instrumental in providing the vision and leadership to nurture the most mutually beneficial external partnerships.

Moving Forward

UNLV has evolved significantly since the planning process started. The University has established the UNLV School of Medicine, is developing a Top Tier Vision, Mission, Goals and Strategy document to guide campus development, and is strengthening student retention, progression and completion (RPC). Meanwhile, technology continues to innovate at a dizzying pace.

The IT Master Plan will enable the University to adapt to ongoing change while taking advantage of new opportunities to move the institution forward. The Plan addresses the dynamic nature of UNLV's technology needs through an established planning cycle.

The Plan proposes 14 initiatives. For each of these, careful consideration should be given to implementation timeframe, financial and human resource requirements, and impact on existing

operations. Given the scale and complexity of the University, the resources this plan requires should not be underestimated. The University should realize a 'return on value' from these investments of time, energy and dollars.

Sustaining the Plan

Sustaining the IT Master Plan will require effective IT governance, coupled with continued executive sponsorship, broad campus engagement and ongoing communication. These elements will position the University to identify and implement new strategic directions as IT needs evolve and new opportunities are identified.

An overview of the annual IT master planning cycle is provided in Section 6: Updating the IT Master Plan. This annual planning cycle supports a proactive, intentional planning culture that responds to emerging opportunities, challenges and priorities.

UNLV IT Master Plan Strategic Technology Initiatives with Action Items

Section 1 - Governance and Planning			
1. Governance of IT	**2. Strategic Technology Planning**	**3. IT Leadership and Coordination**	**4. IT Projects**
Establish a governance structure for information technology that is informed by representative groups of campus stakeholders. The structure should facilitate decisions and establish priorities that support UNLV's strategic directions and provide an evolving technology vision that maintains alignment with those directions.	Create a sustainable strategic technology planning process that engages the campus community, adapts to evolving campus priorities, communicates key planning milestones, and aligns with UNLV's academic calendar and other strategic planning cycles.	Establish a University-wide Chief Information Officer (CIO) position at UNLV that leads IT service delivery, facilitates IT planning efforts across the University's community of central and distributed IT personnel, and aligns IT efforts with strategic initiatives.	Establish IT project review and purchasing approval processes that maximize UNLV's IT investments. These new processes will facilitate the deployment of new services, improve IT service coordination and provide transparent decision-making.
1. Communicate the IT governance model to the University 2. Establish Technology Advisory Committee (TAC) 3. Establish Technology Review Board (TRB) 4. Review and prioritize major IT projects and purchases 5. Annually assess the effectiveness of governance structures and modify as needed 6. Annually review recommended infrastructure and security priorities	1. Communicate the initial plan and the ongoing planning cycle to the University community 2. Create Advance Team to begin implementation of plan 3. Review IT Master Plan initiatives and set annual goals 4. Review funding requirements and identify funding options 5. Assess alignment with campus planning initiatives 6. Develop mechanisms for regularly collecting, assessing and implementing feedback	1. Secure Presidential approval for the CIO position 2. Identify permanent funding for the new position 3. Conduct a comprehensive search process to hire a CIO that will serve the UNLV community 4. Review IT services, policies and staffing for efficiency, coordination and collaboration	1. Implement an IT project review process 2. Implement a purchasing approval process that reflects new campus technology standards and expedites IT purchases 3. Review annually both the IT project and purchasing processes for continuous improvement 4. Implement a project portfolio management tool

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1

UNLV IT Master Plan Strategic Technology Initiatives with Action Items

Section 2 – Creating Sustainable IT Services			
5. IT Service Coordination	**6. Sustaining Technology Investments**	**7. IT Awareness and Training**	
Improve the provision of IT services by developing a University-wide IT Service Portfolio and a University-wide IT Service Catalog to optimize both distributed and centralized technology services.	Sustain IT investments in a manner that accommodates the needs of both distributed and central IT, optimizes technology refresh cycles, leverages technology standards and supports the introduction of new and emerging technologies. Design funding models to support the strategic approach to sustaining technology.	Increase awareness of available IT services, strengthen technology training and provide timely, targeted communication about technology.	
1. Create a catalog of all IT services available to campus users 2. Determine mechanisms to coordinate IT services and meet specialized department needs 3. Improve the delivery of complex IT services by defining the roles of the service providers 4. Annually update the IT Service Catalog 5. Establish Service Level Agreements to document the details about available services 6. Assess the effectiveness of the IT Service Catalog in improving awareness and usability of services 7. Improve ability to align IT resources to meet changing customer and University needs 8. Consolidate services to reduce duplication of effort.	1. Institute a strategic approach for replacing outdated technology 2. Develop funding models to refresh technology in ways that support changing needs, evolving standards and new technologies 3. Reduce the percentage of UNLV IT assets that have exceeded their recommended replacement cycle 4. Assess IT investments to determine when to decommission services, consolidate services and introduce new technologies 5. Determine how the use of personal devices impact technology refresh cycles 6. Re-architect the technology infrastructure to keep pace with student expectation, academic innovation and research needs 7. Provide access to backup services that protect campus documents and data 8. Leverage community partnerships to provide off campus data center services 9. Provide self-service access to applications and infrastructure through cloud services	1. Improve awareness of IT services and IT training options 2. Annually update technology training options to align with UNLV's technology roadmap 3. Increase student access to technical training 4. Expand training around UNLV technologies commonly used by students 5. Provide multiple approaches for IT training that support active learning 6. Create a comprehensive IT security education, awareness and training program that emphasizes collective responsibility for protecting campus data 7. Deliver technology orientation programs for new students, faculty and staff 8. Increase professional development opportunities for the IT community (e.g., user communities, cross training, workshops, EDUCAUSE, Internet2, etc.) 9. Develop topic and audience-based communication mechanisms for timely notifications regarding technology services	

2

UNLV IT Master Plan Strategic Technology Initiatives with Action Items

Section 3 – Foundation for Growth and Agility			
8. Information Security	**9. iNtegrate 2**		
Elevate the role for security planning and management beyond IT by creating a University-wide Cyber Security Team and CISO position empowered to implement a comprehensive security strategy designed to mitigate current and anticipated future risks.	In collaboration with NSHE institutions, assist with the selection and implementation of a new suit of integrated finance and human resource systems. Once implemented, the new systems are expected to be more user-friendly than the current systems, reduce labor-intensive manual processes, decrease duplication of effort, improve tracking and increase self-service options for faculty and staff. The new systems will also introduce new functionality, integrate well with existing systems, improve data integrity and enhance security allowing better access to information for decision-making and reporting.		
1. Create a UNLV Cyber Security Team 2. Develop, implement, and regularly assess a comprehensive security strategy 3. Maintain a prioritized list of security initiatives 4. Create a Chief Information Security Officer (CISO) position 5. Establish ongoing risk assessment efforts 6. Implement education, awareness and training to assist users in protecting information technology assets 7. Adopt a tiered classification system for UNLV data that considers criticality, sensitivity and regulatory requirements 8. Provide University leadership with recommendations regarding audit findings, compliance requirements and IT security improvements 9. Implement data encryption and data loss prevention solutions 10. Create an IT Security Liaison team of unit-specific representatives to work with the Cyber Security Team 11. Develop and regularly review IT security policies and processes 12. Assess the effectiveness of IT security efforts	1. Implement new finance and human resources systems 2. Hire new UNLV staff to assist with the implementation 3. Develop interfaces between iNtegrate 2 and existing campus systems 4. Provide documentation and training on system functionality 5. Create a process for requesting and prioritizing on-going system enhancements and alternatives for functionality that cannot be duplicated in the new system		

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3

UNLV IT Master Plan Strategic Technology Initiatives with Action Items

Section 3 – Foundation for Growth and Agility			
10. Identity Management and Single Sign-On	**11. Mobility**		
Establish an identity management program to improve the efficiency of user account administration, increase information security, improve collaboration, and simplify access to resources and data.	Develop a mobile strategy that fulfills the growing expectations for mobile access to information and services in a manner that is expeditious, secure, sustainable and focused on improving University services. Accelerate cost-effective delivery of user-friendly mobile access to a wide-range of university data and services by coordinating the development and acquisition of mobile applications, support services and security in accordance with the mobile strategy. Expand wireless coverage and increase bandwidth to meet existing needs and accommodate future growth.		
1. Complete installation of the identity management infrastructure 2. Provide single sign-on to UNLV applications (e.g., WebCampus, MyUNLV, Google Apps, iLeave, computer login) 3. Expedite the provisioning of credentials for access to University applications and data 4. Implement role-based authorization to support collaboration, application and data access based on role and or group identities 5. Facilitate cross-institutional collaboration by providing federated credentials for authorization and access to shared academic resources through national organizations (e.g., InCommon, HathiTrust, eduroam) 6. Collaborate with appropriate campus entities to define the data and access privileges for individuals and groups within the identity management system 7. Develop and implement procedures to audit security, accuracy and appropriateness of access privileges	1. Develop a mobile strategy 2. Re-architect UNLV's wireless infrastructure for campus-wide coverage that meets current and future needs 3. Replace the current wireless authentication solution 4. Provide state-of-the-art wireless and cellphone coverage in the Thomas & Mack Center 5. Establish the direction for mobile application development and acquisition 6. Increase mobile access to major campus applications 7. Develop security standards for mobile application development 8. Provide incentives to encourage innovation in the development of mobile applications to meet both enterprise and unit needs 9. Coordinate support for commonly used mobile devices and mobile applications at UNLV 10. Support faculty developing and/or acquiring mobile applications 11. Secure ongoing staffing resources to implement the mobile strategy		

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4

UNLV IT Master Plan Strategic Technology Initiatives with Action Items

Section 4 – Information Sharing and Collaboration Tools			
12. Enterprise-wide Document Imaging and Workflow	**13. Data Management for Institutional Effectiveness and Decision-making**	**14. Communication and Collaboration Tools**	
Establish a university-wide approach to digital document storage, records retention, and secure disposal of archives that will support the University's goal to improve process workflows and increase administrative efficiency.	Build upon the institution's university-wide support model for improving access, utilization, and governance of data that recognizes the strategic value of using information as an institutional asset.	Provide more effective communication and enhance collaboration through the use of state-of-the-art technologies including a converged voice and data communications environment.	
1. Create a cross-functional steering team to facilitate a full campus rollout and ongoing support of document imaging and workflow services 2. Align document imaging procedures with state and NSHE legal requirements for business processes (e.g., records retention, electronic signatures, data security) 3. Expand use of the document imaging solution to meet prioritized needs 4. Coordinate deployment of the document imaging solution with delivery of the new finance and human resources systems 5. Ensure campus data management efforts include data generated by the document management solution 6. Develop interfaces between the document imaging solutions and other major campus systems	1. Hire staff sufficient to support new reporting requirements (e.g., funding formula, iNtegrate 2, Top Tier) 2. Establish an institutional-wide policy for data ownership 3. Separate data management from data governance at UNLV 4. Create service agreements between Decision Support and OIT to support both the enterprise data warehouse and business intelligence activities 5. Develop a plan to prepare for changes in Oracle support for EPM and address the need for an upgraded ETL solution 6. Create a Business Intelligence Project Plan	1. Complete the Google Apps migration to provide enhanced email features and new collaboration tools 2. Increase the strategic use of social media in internal and external communications 3. Adopt a web-conferencing solution with desktop and mobile support 4. Implement campus-wide digital signage with emergency notification capabilities 5. Implement a Customer Relations Management tool for targeted communication 6. Develop portal for students 7. Develop a portal for faculty and staff 8. Standardize official UNLV web pages to improve information access and branding 9. Provide additional assistance for webpage development in academic departments 10. Expand the use of the campus course management system to assist with recruiting, orientation, committee work, training and professional development 11. Merge the units that provide the infrastructure for voice and data services	

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5

UNLV IT Master Plan Strategic Technology Initiatives with Action Items

Enabling the UNLV Mission			
A. Advance Research, Scholarship and Creative Activity	**B. Promote Student Learning and Success**	**C. Foster Inclusion and Community Engagement**	
Provide technology services to advance and support research, scholarship and creative activity.	Provide technology services to promote student learning and success.	Provide technology services to foster inclusion and facilitate community engagement.	
1. Incorporate research technology services in the IT Service Catalog 2. Add more research programming staff 3. Partner with Switch Communications to provide high-speed access to supercomputing resources 4. Broaden UNLV's involvement with research-related technology consortia (e.g., InNEVation, Internet2) 5. Regularly update the UNLV IT Master Plan to align with the evolving plans for the UNLV School of Medicine and the upcoming Research Master Plan 6. Create a Research Technology Group 7. Implement research administration tools to improve support and integration of the activities of standing research committees (e.g., Animal Care, Biosafety, IRB) 8. Implement additional Visual Compliance modules to track export control, foreign travelers and visiting investigators 9. Provide more technological resources to support data scientists (e.g., high-speed connectivity, analytic tools, programmers, statisticians)	1. Implement a Customer Relations Management tools for targeted student communication 2. Expand professional development opportunities around commonly used instructional technologies 3. Create a technology sandbox environment for exploring new technological innovations in teaching and learning 4. Regularly update the UNLV IT Master Plan to align with the upcoming Academic and RPC Master Plans 5. Facilitate technology user groups to connect faculty and others at UNLV using similar technologies 6. Create an Academic Liaison program to provide discipline-specific technical support 7. Provide database support for department-specific needs 8. Implement a solution to route, approve and retrieve academic documents 9. Provide a comprehensive video streaming solution including captioning 10. Complete the implementation of Digital Measures, the faculty annual activity reporting application	1. Hire a CIO to serve as UNLV's chief liaison and the principal point of contact for NSHE, local and state government, and key regional constituencies 2. Work with appropriate campus departments and local and state leaders to develop academic degree programs and technical training to meet IT workforce needs 3. Increase wireless capacity and support for mobile access at conferences, public events and entertainment venues at UNLV 4. Provide course management resources to expand community outreach through in-person and online continuing education offerings 5. Increase UNLV's social media outreach and mobile access to University resources 6. Implement a Customer Relations Management system for targeted communications with community groups 7. Provide IT security consultation for grants and contracts providing community services 8. Provide training on the new collaborative tools available in Google Apps.	

UNLV IT Master Plan Strategic Technology Initiatives with Action Items

A. Advance Research, Scholarship and Creative Activity Continued	B. Promote Student Learning and Success Continued	C. Foster Inclusion and Community Engagement Continued	
10. Develop research-specific data management solutions (e.g., archiving, curation, accessibility, rights management, security) 11. Develop funding models for maintenance and renewal costs for grant-funded equipment 12. Improve grants and contracts fiscal management with the new iNtegrate 2 finance modules 13. Include a research representative on the Cyber Security Team and provide additional assistance to investigators in identifying and mitigating data security risks 14. Expand the use of tools that facilitate research collaboration (e.g., Google Apps, Redbooth - formerly Team Box) 15. Add research data to the campus data warehouse to allow cross functional reporting	11. Complete the creation of uniform academic departmental web pages to support accreditation, recruitment and student engagement 12. Implement additional tools to support RPC efforts (e.g., EAB Student Success Collaboration, Blackboard Learning Analytics, e-portfolio) 13. Incorporate requests for enhancements to MyUNLV and WebCampus into the IT project request process to improve alignment with educational objectives 14. Create computer lab environments accessible by students from off campus 15. Develop campus IT internships to support information technology disciplines	9. Include within the campus storage and server strategy the unique needs of University units engaged in community collaboration 10. Optimize the technology services required for community partnerships 11. Support collaboration with non-profits by improving access to University resources through more granular identity management services 12. Implement a campus-wide digital signage solution that facilitates emergency notifications 13. Foster stronger collaborations between the UNLV IT community and local IT professionals to deepen regional IT expertise 14. Determine interest in forming a chapter for alumni interested in technology 15. Expand UNLV's IT community involvement in the InNEVation Center's mission to diversify the economy through innovation	

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7