Information Technology Strategic Plan

2014-2020

James Madison University

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Introduction

In 2012, prior to his official inauguration, President Alger charged the Madison Future Commission, a group of 160 or so faculty, staff, students, alumni, former Board of Visitors members and representatives from our local community, with laying the groundwork for a the university's next strategic plan. The JMU Board of Visitors reviewed the Commission's work in January 2014. The plan reaffirmed the Mission, established new Vision and Values statements for the university and laid a new strategic roadmap for the 2014-2020 timeframe.

Several Information Technology (IT) leaders participated in this process and reaffirmed with others that use of information technology resources is key to fulfilling the aspirations and mission of nearly any university constituent or unit, and further, that information technology supports the vision and success of James Madison University.

Building on the process and outcomes of the Madison Future Commission's (MFC's) work, Information Technology began a similar strategic planning process in December 2013. The intent was to further integrate tenets of the university plan into IT and assure its future efforts are focused appropriately. This resulting strategic plan aims to:

- share with the university community and others, IT's strategies and goals for 2014-2020;
- focus attention on the engaged and effective use of information technology resources in support of the university mission, vision and values; and
- establish a basis for further dialog regarding our progress.

James Madison University

MISSION

We are a community committed to preparing students to be educated and enlightened citizens who lead productive and meaningful lives.

VISION

To be the national model for the engaged university: engaged with ideas and the world.

VALUES

Academic Quality: *We are dedicated to exemplary learning experiences because they are the essence of our mission.*

Community: *We thrive when we collaborate, respect and serve others, and appreciate our interconnectedness.*

Diversity: *We strive to be an inclusive community that values the richness of all individuals and perspectives.*

Excellence: *We seek to be innovative and to perform at the highest levels.*

Integrity: *We pursue ethical reasoning because it is essential to meaningful citizenship.*

Student Focus: *We provide experiences that challenge and support students.*

http://www.jmu.edu/jmuplans/

IT Mission:

Deliver a technology environment and services that enable the university community to learn, innovate, collaborate and provide excellent service.

IT Vision:

Enhance learning, collaboration and service delivery through application of strategic technologies and secure universal access.

IT Values:

We value **collaboration**—both within IT and with those we serve—because it helps us understand and support the technology needs of the entire university community.

We value **innovation** because it helps us solve technology challenges and meet the needs of our diverse university community.

Being **trustworthy**—ethically delivering reliable services—is a non-negotiable in how we serve the university community.

It is important that we focus on **service**, meeting the JMU community's technology needs and providing strong customer support.

We value **responsiveness**, always working effectively and reliably to meet the needs of the university community.

We will be **forward-looking** because it helps us anticipate and adapt to the ever-changing business and technology environment.

Key Strategic Approaches

Over the next six years, Information Technology will focus on the following key strategies:

1. Enhancing technology infrastructure including universal wireless access

To preserve and extend the free flow of information and ideas, the level of engagement required by outstanding scholarship, and breadth/quality of university services, Information Technology manages JMU's technology infrastructure as a continually renewing resource. Ongoing monitoring and investment are necessary to meet growing demand.

For example, burgeoning use of video streaming, IP-based voice and data communications, and multi-device expectations of our user population all require more bandwidth. Embedded fault tolerance and high-performance computing and storage solutions are also necessary to assure acceptable levels of service. Of particular significance is the ability to meet needs for wireless and remote access in support of new learning and service delivery paradigms. To this end, IT considers continued growth and reliability of our technology infrastructure as a strategic priority. IT will place special focus on wireless expansions to achieve universal coverage.

2. Enhancing communication strategies

To stay connected and extend their reach, individuals and work units of the university are exploring new forms of electronic communications. While informational web pages, broadcast

email and course-specific communications are generally available, there is increasing desire for immediate, easy and adaptable means of sharing/receiving updates. To help inform and involve the variety of constituents JMU serves, IT will broaden its support and use of new communication technologies. By using social media and integrating Chat, Twitter, Facebook, and other such tools in our services, individuals will be able to select the frequency, means and level of detail appropriate to their needs and interests. They will be equipped to organically form and follow digital conversations and information flows as they choose. In addition to supporting university efforts, IT will incorporate these forms of communication in its outreach efforts to bolster easy access and interaction with IT staff and information resources.

3. Improving processes and systems

Investment in technology over the years has enabled significant improvements in university processes and allowed new levels of workflow and engagement. However, as new tools become available and new needs arise, IT will continue to support process and system improvements. By applying new data management techniques and leveraging data across various systems, IT will support new levels of productivity and insight for many areas of the university. In addition, IT will focus on internal process and system improvements. Implementing new systems and processes, will help streamline IT service workflows, provide greater transparency for IT staff and users and provide for better decision making.

4. Implementing dependable and seamless, secure access across our various internal, remote and cloud services to provide for safe access anywhere, anytime

As JMU's use of remote access, federation and cloud services expands, the technology infrastructure directly managed internally is being coupled with myriad other devices, networks and systems. IT works to integrate these external resources seamlessly into the university's technology ecosystem while maintaining the level of quality, reliability and security its users expect. Though generally effective in addressing specific requests, IT seeks to raise the playing field by further developing identity management and federation techniques, remote access capabilities, virtual environments and cloud service standards that will allow more uniform results and place less burden on individual users. Our customers should expect to use their approved access to university information resources from anywhere, anytime and with an appropriate level of security.

5. Enabling engagement though continued identification and implementation of collaboration tools, development of identity and access management and new technologies such as unified communications (combined voice, data, video)

To support these needs and offer greater flexibility and functionality in the communication services offered students, faculty and others affiliated with the university, IT will implement unified communication technologies that more seamlessly combine voice, data and video communications capabilities. We will also integrate these technologies into a variety of university offerings and assure their availability from local classrooms/offices/homes, a preferred outdoor space or from a hotel or hallway elsewhere in the world.

6. Expanding support for use of mobile devices as a means of access and productivity for university constituents

As individuals adopt unconventional schedules and workplaces they increasingly use mobile devices to remain engaged and increase productivity. Though pervasive, consumer-oriented devices such as cell phones and tablets provide specific challenges when designing enterprise systems, enabling access and providing for security. Consequently, they have not traditionally been a recognized priority for IT when selecting and implementing new services. IT plans to address this gap for its customers by expanding support for mobile access. By developing or adapting service interfaces that are mobile-friendly, providing guidance regarding information security and data management and further developing internal information resources and expertise, IT plans to more fully embrace use of mobile devices.

In keeping with these strategies, Information Technology has identified a number of short-, mid- and long-term objectives that will guide our work. These objectives align with and support the various core values and goals of the university. By achieving our objectives, IT will contribute significantly to accomplishment of JMU's goals and mission and its overall success.

Key Short-Term IT Objectives (July 2014-June 2016)

1. Set standards for the deployment of cloud services, identify potential offerings and vet according to established standards

2. Implement Virtual Desktop Infrastructure (VDI) and Multi-factor Authentication (MFA) to enable universal access from any location to university technology services for all approved constituents

3. Continue to provide identity management functionality by upgrading the Oracle infrastructure to Version 11g, Release 2 laying the groundwork for expansion of the common login page and added potential for multi-factor authentication to other key resources

4. Provide mobile access to key MyMadison functions beginning with support for current students and expanding to support all constituencies served by MyMadison

5. Continue to support efficiencies for the university community through automation and workflow; Complete rollout of the Electronic Personnel Action Request (ePAR) to Academic Affairs including key functionality to support ACA compliance; Evaluate other projects such as travel authorization for Finance and grades change for the student community

6. Continue support for faculty, staff and student collaboration in SharePoint and SharePoint Online; Emphasize use of SharePoint Online as a means to support informal collaboration among students and between students and faculty

7. Begin implementation of master data management using the Higher Education Hub by working with campus stakeholders to determine appropriate data governance around key biographical and demographic data shared between the student and human resource systems

8. Expand wireless service into the Hillside and Lakeside Residence Halls and designated academic and administrative buildings identified from the Wireless Master Plan that targets universal wireless by 2018; Implement a self-service guest wireless solution

9. Monitor Internet bandwidth and plan for upgrades when reaching an 80% threshold; Upgrade all Internet edge components and continue to explore all Internet Service opportunities within the city to ensure maximum capabilities and redundancies

10. Continue to provide storage and backup services to maintain and preserve our data; Evaluate the many cloud storage options

11. Upgrade existing network distribution components to provide 10GB bandwidth to the core and 1GB bandwidth to downstream buildings; Also includes upgrade of the existing core routers to 40GB, expanded failover capabilities and upgrade of the existing remote access (VPN) gateway

12. Support continued growth of telepresence collaboration services across campus; Upgrade all hardware to the latest code versions; Plan for and implement additional telepresence facilities

13. Continue to fine tune the correlations within the new Security Information and Event Management (SIEM) system to enhance monitoring, detection and alert capabilities

14. Identify and implement guidelines, standards and software tools for better documenting work requests, projects and infrastructure; Use this work as basis for acquiring an Information Technology Service Management (ITSM) system to replace the Remedy call logging/tracking system; Use the RFP process to evaluate and select a qualifying ITSM solution; Define a phased implementation approach and complete the first phase consisting of at least three process components

15. Procure and begin implementation of a GIS-based Infrastructure Management System (IMS)

16. Review voice Common Channel Interoffice Signaling (CCIS) network to identify bottlenecks that have potential for undue failure due to routing pathways; Recommend corrective action as required

17. Review options for replacing manufacturer end-of-life, end-of-service products and recommend course of action as required

18. Complete Pinnacle Version 6 implementation and use it as a basis to review and adjust Monthly Recurring Charges (MRC) and Other Charges and Credits (OCC)

19. Upgrade SV8500 telephone system and voicemail platforms to current software levels

20. Monitor and evaluate emerging technologies and trends to help plan for Layer 1 infrastructure changes as required including review and upgrade of fiber infrastructure to support wireless communication and traffic routing for both voice and data

21. Monitor and evaluate unified communications technologies such as Voice-Over-IP (VoIP) and other trends in order to formulate migration strategies as required for the university, with specific focus on pilot implementations of unified messaging, audio conferencing and IP phones

Key Mid-Term IT Objectives (July 2016 -June 2018)

1. Identify long-term funding needs for information technology and work with senior management to ensure the availability of such funds

2. Evaluate and implement federation solutions that support collaboration and access to resources/constituents outside the university

3. Building on the work completed in the short term (2014-2016) objective, continue to expand wireless access into the Bluestone Residence halls and to the next group of Academic and Administrative buildings identified in the Wireless Master Plan with a goal of universal wireless access; Also, continue to monitor the decrease in student wired connections to help plan for the evolution of the university's physical wiring infrastructure

4. Monitor Internet usage and plan for bandwidth upgrades when peak thresholds reach 80%; Upgrade all Internet edge components and continue to explore local Internet Service opportunities to ensure maximum capabilities and redundancies

5. Using the guidelines, standards and software identified in the short-term efforts (2014-2016), combine existing individual unit processes and service delivery mechanisms to provide a consolidated and consistent view of existing process workflows automated through the Information Technology Service Management (ITSM) system; Identify/define additional process components and continue the Information Technology Service Management (ITSM) system implementation by enabling additional process components as defined by the various project plan phases

6. Expand and upgrade Identity Management (IdM) functionality to provide secure access to university technology resources by:
    a. expanding the common login page to incorporate all web-based university systems;
    b. providing infrastructure required to support multi-factor authentication on-campus through wired and wireless connections;
    c. providing options for certifying identity to support access for former students;
    d. evaluating ways to provide access to parents through self-registration; and
    e. using federation to extend some services to non-JMU constituents

7. Continue efforts to support efficiencies for the university community through automation and workflow; Evaluate additional processes that may be automated through workflow

8. Expand data governance and master data management through the Higher Ed Constituent Hub for systems that receive data from SA and HR

9. Continue to evaluate cloud services as an opportunity to decrease operational overhead, provide more flexible storage and backup services and expand service offerings to meet needs of the JMU community

10. Review and recommend options for securing the university's physical wiring (fiber and copper) infrastructure

11. Continue implementation of the GIS-enabled Infrastructure Management System (IMS) identified in the related short-term (2014-2016) effort

12. Evaluate emerging trends and monitor fiber infrastructure capabilities to support wireless expansion, expedite traffic routing, and allow for continued evolution of JMU's physical infrastructure to provide voice, data and video capacity as required

Key Long-Term IT Objectives (July 2018 -June 2020)

1. Using the intelligence gained through previous monitoring and piloting efforts, develop a unified communication environment that lets individuals easily select or combine voice, IPTV, data, video conferencing, email and other messaging technologies to perform their work

2. Work with various internal partners to establish university-wide data governance; Consolidate duplicate data management processes , work flows and systems to assure accurate and timely coordination of data updates and to free resources that can be used to enhance shared foundational components and facilitate real-time integration across applications

3. Expand and upgrade Identity Management (IdM) and Virtual Desktop Infrastructure (VDI) services to provide secure access to university technology services

4. Analyze future of University Advancement system due to retirement of the Ellucian Advance application and favoring a CRM-based application approach

5. Continue to support automation and workflow efficiencies for the university community by evaluating additional processes that may be streamlined using technology

6. Complete remaining wireless installations for academic and administrative buildings on the Wireless Master Plan expansion list

7. Evaluate ongoing Information Technology Service Management (ITSM) system enhancements that further enable functionality, service engagement or efficiency for the university

8. Continue to evaluate emerging technology trends and upgrade fiber infrastructure capabilities to support wireless implementation and effective traffic routing; Identify opportunities for management efficiency and to further evolve physical and virtual network infrastructure

9. Complete GIS-enabled Infrastructure Management System (IMS) and establish methods to assure on-going maintenance of timely and accurate infrastructure records

Information Technology looks forward to working with various strategic business partners and members of the university community to fulfill this plan. We will share additional project information/updates as we go along and look forward to upcoming collaboration. Meanwhile, to share questions/comments or discuss any of the items in this plan, please contact the Assistant Vice President for Information Technology at (540)568-7063 or hulveydb@jmu.edu.