

University of New Mexico

UNM Digital Repository

HSLIC Strategic Plans

Administration

11-1-2012

UNM HSLIC Strategic Plan for Knowledge Management and Information Technology, FY2008-FY2010

Holly Buchanan

Follow this and additional works at: <https://digitalrepository.unm.edu/hslic-strategic-plans>

University of New Mexico

UNM Digital Repository

Historical and Administrative Collection

Administration

11-1-2012

UNM Health Sciences Center Strategic Plan for Knowledge Management and Information Technology, FY2008-FY2010

Holly Buchanan

Follow this and additional works at: <https://digitalrepository.unm.edu/hslic-historical-administrative>

**UNM Health Sciences Center
3-Year Strategic Plan for
Knowledge Management and
Information Technology
FY2008 – FY2010**

Table of Contents

1.0 Introduction	3
1.1 Background	4
1.2 Governance	4
1.3 Updates and Evaluation	5
2.0 Mission	5
3.0 Goals	6
3.1 Planning Goals	7
3.2 Technical Infrastructure Goals	7
3.3 Academic Support Goals.....	7
3.4 Research Support Goals	7
3.5 Clinical Support Goals.....	8
3.7 Collaborative Efforts Goals.....	8
3.8 Evaluation and Budgeting Goals.....	8
4.0 Policy Principles	8
4.1 Overview.....	8
4.2 IT Architecture	9
4.3 Information Assurance	10
4.4 Services and Systems.....	11
4.5 Network Infrastructure	11
4.6 User Support and Training	12

1.0 Introduction

The purpose of this document is to provide the University of New Mexico Health Sciences Center's Knowledge Management and Information Technology (KMIT) councils and committees with near-term and long range operational goals for FY2008 - FY2010 that support the mission of the Health Sciences Center (HSC) and the University of New Mexico (UNM) as a whole. Specifically, they support the development of an IT infrastructure for statewide outreach and the continued development of state-of-the-art technology to enhance educational and research programs.

Since the FY2005 – FY2007 KMIT 3-Year Strategic Plan, there have been significant changes to IT governance at UNM. In 2004, UNM's executive leadership created a Chief Information Officer (CIO) position within the university, and a new IT governance structure was developed. In 2005, the CIO established an IT Governance Council, consisting of the Executive Vice Presidents of UNM, Vice President for Research and the CIO to provide direction on IT issues, review and approve the IT Strategic Plan, and provide a conduit for communicating IT issues throughout the University. In addition to the IT Governance Council, 3 other groups inform the UNM CIO on IT issues as well as serve as conduits for communication with the university at large:

- IT Cabinet: advises and informs the CIO on IT strategic and technical issues for the University
- IT Managers Council: made up of managers from central IT service providers who recommend IT standards, guidelines and procedures.
- IT Agents Networking Group: made up of representatives from (Banner Level 3) organizations across campus who participate in IT governance processes and collaborate on regional and local service provisions.

UNM's IT governance structure is governed by section 2560 of the University Business Policies and Procedures Manual.

A UNM-wide IT Strategic Plan was also developed in 2006 (<http://itsp.unm.edu/>). This plan represents an important beginning toward the integration of IT directions and projects throughout UNM with University directions and the budget process. The Strategies identified in this 2006 plan cover core IT processes provided by both central and distributed IT service units at UNM. The Strategies address:

- Technology in instruction
- Infrastructure for research
- IT security
- Sustainable funding for IT,
- IT capacity and collaborations in the state
- Coordinated IT governance and decision-making.

The purpose of the KMIT 3-Year Strategic Plan for FY2008 – FY2010 is therefore to define areas in which the HSC will align with UNM-wide IT governance processes to move forward University-wide IT issues as well as to differentiate those knowledge management and IT issues unique to the HSC. This document is the result of discussions with committees and stakeholders throughout the HSC. Progress toward IT goals must be routinely aligned with directions stated in this document and communicated to Health Sciences Center faculty, staff and administrators. The New Mexico Higher Education Department (HED) receives copies of this plan with legislative requests. The HED's Chief Information Officer (CIO) and the CIO for the State of New Mexico also receive information regarding the HSC's IT related initiatives

The organizational structure supporting HSC-wide IT planning includes the KMIT Operations Council and the KMIT Advisory Council who provide direct feedback to HSC leadership on IT related policy, initiatives, and priorities at the HSC. The planning process also includes the UNM Hospitals Information Systems Steering Committee and the HSC Information Systems Directors group. These committees include

representatives and stakeholders from across the Health Sciences Center such as the HSC Department contacts and research partners.

1.1 Background

The strategic goals in this document are designed to meet the near-term and long-range IT needs of the HSC as a reflection of the institutional mission and purpose. A major component of this document focuses on the continued implementation of an electronic medical record and the continued commitment to site-wide hardware, software and support standards.

1.2 Governance

The University of New Mexico HSC has adopted a centralized governance structure for KMIT with the following features:

Executive Vice President, HSC

- Oversees the academic, clinical, and research components that make up the HSC
- Delegates authority to the Associate Vice President for Knowledge Management and Information Technology
-

Associate Vice-President, HSC, Financial Services

- Assures appropriate distribution of funding and new resources
- Serves on KMIT Leadership Council

Associate Vice-President, HSC, Knowledge Management and Information Technology

- Coordinates long-range planning for HSC Academic and Research IT
- Ensures collaboration between HSC, UNM and statewide partners
- Serves as an HSC representative on the UNM IT Cabinet
- Serves on the KMIT Leadership Council
- Provides budgetary oversight for IT within HSC academic and research components
- Serves as communication link with main campus entities including the Center for High Performance Computing, Information Technology Services, Extended University, and University Libraries, and to the IT structures of the HSC components

Chief Information Officer (CIO), UNM Hospitals

- Coordinates long-range planning for UNM Hospitals and HSC Clinical Operations IT
- Ensures collaboration efforts between the HSC, UNM and statewide partners
- Serves as an HSC representative on the UNM IT Cabinet
- Serves on the KMIT Leadership Council
- Provides budgetary oversight for IT at UNM Hospitals
- Provides general oversight for UHNM IT centralized support model
- Ensures managed IT support for all UNM Hospitals and clinics including:
 - clinical applications
 - system operations, network and technology management
 - systems development
 - customer support and project management

Knowledge Management and Information Technology (KMIT) Committees

- **Leadership Council** - Plans and coordinates long- and short-range IT strategic planning and allocation of resources.
- **Advisory Council** - Faculty and administration from HSC components, the VA and UNM main campus provide direct feedback on specific policy and initiatives to help set priorities. Advisory Council members assist in identifying faculty needs in the information/telecommunication technologies and knowledge management resources supporting HSC Strategic Planning goals in education, research, clinical care, and

administration. Technologies and resources include those needed to support the curriculum, distance learning, continuing education, patient care, telehealth, research processes, outreach, training and professional development (including simulation), administrative services, workstation and network support, application support, web-based technologies for internet/intranet development, public access computing, classrooms, and audio-visual production.

- **Operations Council** - IT managers from the two centralized IT units (UNMH IT and HSLIC) work together to define specific initiatives and implement IT plans and guidance for the development of policy and procedures.

IS Directors

- The quarterly HSC IS Directors meeting facilitates discussion among IT managers from the major components of the HSC
- Provide direct feedback on policy and initiatives

Information Systems Steering Committee (ISSC)

- Co-chaired by UNMH CIO and the School of Medicine's Director of Medical Informatics
- Facilitates discussion among clinical managers regarding clinical IT related issues
- Provide direct feedback on prioritization and implementation of clinical systems

HSC Department Contacts

- HSLIC Manager of User Support facilitates monthly discussion about operational IT issues among academic/research components. This group works with day-to-day implications of policies and standards.

Clinical and Translational Science Center (CTSC)

- The CTSC will develop a research project approval process based on existing ones from the former General Clinical Research Center to ensure adequate IT planning and resources for approved research projects.

HSC Component IT Structures

- Many HSC departments also fund their own IT support staff to meet first-level user needs within the department. These support staff are invited to participate in the IS Directors and HSC Department Contacts meetings.

1.3 Updates and Evaluation

This plan is formally re-evaluated on an as-needed basis by the KMIT councils, and changes may also be made on an as-needed basis.

2.0 Mission

The mission of the knowledge management and IT components of the HSC is to meet the information needs of the center in order to facilitate the best possible service to its customers. Specifically, we strive to:

- provide timely, secure, and universal access to data and information for all of our users
- maintain all computer hardware to meet the performance needs of our users
- develop/obtain/maintain software to meet the functional needs of our users
- manage the collection, storage, and retrieval of Health Sciences Center data
- maintain the security, confidentiality, and integrity of data and information
- provide expertise to users in obtaining specialized computer hardware and software
- enable the capable and efficient use of systems with a comprehensive training program

- provide technical help-lines with adequate and timely trouble response

These activities will take place within the framework of the following KMIT guiding principles.

Knowledge management creates a user-centered environment that ensures easy access to and ethical use of appropriate information resources. Effective policy and training, as well as a ubiquitous and unobtrusive information technology infrastructure, are essential to a knowledge management program providing stewardship of the collection, storage, organization, retrieval, archiving and access to data and information.

Information technology supports knowledge management and includes a variety of devices and the connectivity that links them in order to enable all forms of electronic communication.

Accomplishing this mission fosters the creation of a knowledge management environment to maximize the power of information technologies.

Our current direction is shaped by the following intentions:

- Ensure that data gathering takes place once, accurately, and at the original source. Data are integrated and gathered in anticipation of future needs.
- Provide information in a timely, useful, and intuitive way to those with the need to know.
- Make certain that the UNMHSC KMIT environment enriches knowledge-based interactions and decisions and eliminates all process steps that do not add value.

3.0 Goals

HSC information management goals are based on the need to fulfill the mission for information management in the Health Sciences Center. The goals described below are intended to guide the information management activities of the Health Sciences Center during FY2008 through FY2010. They are divided into eight concentrations: planning, technical infrastructure, academic support, research support, clinical support, administrative support, collaborative efforts and evaluation and budgeting.

These goals are met and evaluated through the development and completion of tactical and annual objectives, among all the components of the HSC. The HSC KMIT Annual Planning Matrix includes a timeline list of resources and ownership for each objective. The status of these objectives is reported to the KMIT councils on a regular basis.

The information technology management goals discussed in this document include the following key themes:

- Efficient and timely delivery of information
- evaluation and integration of current and emerging desktop, mobile, server and network technologies that collectively provide a powerful set of electronic tools for research, education and clinical care
- training students, faculty and caregivers to use information technologies and telehealth to their fullest capabilities
- developing an institutional electronic medical record system that supports data mining and warehousing capabilities
- improving collaboration among all IT professionals throughout the HSC and UNM
- developing a robust informatics program
- planning for new HSC buildings and infrastructure projects

3.1 Planning Goals

- Envision the UNMHSC as the comprehensive, easily accessible, electronic healthcare resource and leader for the state of NM.
- Identify leadership and a planning infrastructure that assures continuous planning, evaluation, and process improvements for information technology, consistent with ongoing UNMHSC planning initiatives and partnering with key constituencies.
- Assess UNMHSC information technology infrastructure/systems readiness, especially those that support desktop collaboration and telehealth, to ensure that they properly support KMIT goals.
- Identify and assess information needs for patient care, research, education and administration.
- Periodically update the UNM HSC 3-Year Strategic Plan for Knowledge Management and Information Technology to serve as a guide for implementation and coordination of information technology.

3.2 Technical Infrastructure Goals

- Address current and emerging technologies that enable easy, secure, and universal access to a powerful set of automated tools for information management.
- Create standards (equipment, applications, and network) to reduce cost, improve quality of service and increase the HSC's ability to support users, applications, equipment, and network services.
- Expand technologies to support distance education, public access computing, and instruction using web-based and other interactive electronic curricular resources, including webconferencing, teleconferencing, videoconferencing, distributed virtual reality simulation, streaming media, and electronic learning management systems.
- Continue consolidation of decentralized resources, where feasible and appropriate, to reduce redundancy, take advantage of critical mass, and enable implementation of HSC-wide solutions.
- In collaboration with UNM ITS, continue network development including management and security, collaborative directory development, and improved in speed and connectivity for campus and remote users.
- Support a mobile workforce and work from remote sites.

3.3 Academic Support Goals

- Educate and prepare students, faculty, and health care practitioners to effectively use information technologies to perform their duties in a more cost-effective manner and to improve their utilization of health care resources.
- Incorporate informatics and evidence-based clinical decision-making into HSC curricula.
- Increase the amount of and access to health information resources (especially electronic and other library resources) available for students, faculty, clinicians, researchers, and citizens.
- Encourage the use of distance education and other technologies to provide education (curriculum and continuing education) for students, practitioners, and citizens throughout the state.

3.4 Research Support Goals

- Ensure sufficient computing capability to support the research needs of the HSC, especially as they relate to clinical, translational, community-based, and health outcomes research.

- Create knowledge-based resources to acquire, organize, make accessible, and deliver results of health-related research, especially those related to unique New Mexico populations and those related to the signature research programs and clinical and translational research commitments of the HSC.

3.5 Clinical Support Goals

- Enable effective use of the clinical patient data repository (data and multi-media) to improve medical management and decision-making, internally to the UNMHSC campus, at telehealth sites, and for other collaborative activities with statewide agencies or organizations.
- Increase breadth of data (e.g., multi-media) available in the electronic medical record through use of technology.
- Increase secure accessibility as appropriate to clinical systems from both on and off campus.

3.6 Administrative Support Goals

- In collaboration with other UNM units, incorporate information technologies into business, academic, institutional training, and research administrative processes and services.
- Participate in operationalization and support of UNM enterprise applications.
- Use information technologies to assess HSC processes, services, and products to assure continuous quality improvement.

3.7 Collaborative Efforts Goals

- Increase collaborative efforts within UNM and throughout the state that focus on information technologies and embracing new technology.
- Work collaboratively to ensure progress in the development of an integrated statewide health care information system, reduce redundancy, and ensure a uniform level of patient care throughout the state.
- Increase integration throughout the HSC of library, media, computing, and telecommunications services to better meet user needs.

3.8 Evaluation and Budgeting Goals

- Create evaluation and budgeting processes that align budgeting with priorities, encourage innovation, maximize windows of opportunity, and anticipate user and institutional needs.
- Develop performance measures to evaluate program impact.

4.0 Policy Principles

4.1 Overview

Programmatic support is provided to the three general mission areas of the HSC.

Academic: The Learning Design Center within HSLIC offers consultation and expertise in the areas of instructional design, course development, media production and evaluation for all forms of educational delivery, including online and face-to-face instruction. The HSC supports campus learning management tools including WebCT Vista (academic courses), Learning Central (training), and Moodle (delivery to

external audiences). The Center for Telehealth also offers access to the Telehealth network of networks for extension of health education and training throughout the state and region.

Research: IT in the HSC research community remains highly specialized and will remain somewhat decentralized so that specific, focused solutions are encouraged. HSLIC offers co-location and hosting support for research. In addition, HSLIC ensures that HSC researchers are provided with:

- high speed campus network connections
- access to Internet research networks and telehealth
- co-location space in data centers for research equipment
- desktop support
- a support bridge with main campus IT research services (e.g. supercomputing, emerging technology evaluation, conferences)
- access to appropriate clinical or administrative information systems / databases for the conduct of HRRC-approved research protocols
- provide timely access to de-identified clinical and administrative data to support the development of research proposals

Clinical: The IT strategy for clinical operations is based on the foundation of electronic medical records and the state and federal regulations that keep the information within the records safe and accurate. Of primary importance is to ensure that for clinical providers information within the records is accurate, current, and available on demand in a timely manner. An additional strategy is to pursue the integration of clinical decision support into current clinical systems. The end goal is to ensure patient safety. High-speed campus network connections and reliable security mechanisms are required. These approaches would be applied to the Telehealth activities and clinical encounters as well.

In addition, HSLIC and UNMH IT both provide support for administrative applications used at the HSC for a variety of specialized business functions.

With input from the HSC Leadership Council and the KMIT Advisory Council, the KMIT Operations Council establishes HSC-wide priorities using the Knowledge Management and Information Technology Planning Matrix, the Information Technology Management Plan, and the Joint Operational Plan as guides. The KMIT Leadership Council provides general guidance for overall resource allocation.

The KMIT Operations Council addresses administrative strategies, system integration priorities and industry best-practice decisions. The council also reviews strategies for complying with Health Insurance Portability and Accountability Act (HIPAA) IT security regulations.

Within the University of New Mexico Hospitals component an Executive Sponsor serves as champion for projects, delineates objectives, and defines success factors and budgets, ensuring that completed projects meet those factors. When a project is approved, the Administrative Project Sponsor and IT Project Manager responsibilities are established to shepherd the project through contracting or development, implementation, and evaluation.

4.2 IT Architecture

The primary goal of information technology services today is effective management of information. Within the strategic planning framework, client devices and systems are tools for the delivery of information, as well as communication and collaboration tools. The services and systems environment (both server and client) should efficiently serve the management of access and authorization for use of data and information efficiently.

The key principles to be used in attaining these goals are:

- emphasize the use of service oriented architecture principles and technologies

- utilize directory service technologies and directory enabled applications and services to aid in the logical grouping of users, resources and information needed to assist the organization in deploying and maintaining services in an orderly, efficient and flexible manner.
- continue supporting and updating a standardized set of tools and applications that can address a variety of needs including a business productivity suite and standard desktop utilities
- provide secure and reliable access to services and systems
- utilize an integrated and layered approach to securing and maintaining the integrity of data and information

The HSC Information Technology Standards document (http://hsc.unm.edu/library/kmit/it_standards.shtml) presents current standards for information technology hardware, software and support.

These principles focus upon the infrastructure and priorities that will permit integration of administrative objectives across the HSC and UNM enterprises. Among these objectives are standard application software, standard network infrastructure and network management strategy and standardized desktop hardware and software. The centralized HSC IT departments also work with their UNM counterpart (ITS) to assure that proper planning, collaboration, and lines of communication are in place.

4.3 Information Assurance

The University of New Mexico Health Sciences Center recognizes information as a vital medical, research, and business resource. Preventative measures necessary to secure the confidentiality, integrity and availability of Health Sciences Center information and to ensure compliance with all state and federal regulations are being taken. In this instance, Information Assurance includes efforts to guarantee and sustain data accuracy, security, currency, and availability. HSC administration is committed to the centralized development of campus security best practices so that they are distributed and maintained appropriately. Toward this end, IT security personnel in the academic, research and clinical components are working together to define a layered program that is centrally supported and maintained.

A continuous cycle that utilizes risk, business and impact management is the strategy used to develop, maintain, and improve Health Sciences Center information assurance. To meet HIPAA requirements, an HSC security official, appointed by the Executive Vice President for the Health Sciences, will ensure that policies are created and kept up-to-date, workforce security training is provided, annual reports of compliance with policies are performed and appropriate sanctions are enforced. This person will work closely with IT management, IT security technicians and departments to ensure compliance.

Clinical information in the medical record, whether it is paper or electronic, must be timely, accurate, reliable, secure, and accessible. All initiatives related to clinical information are evaluated on their ability to fulfill these goals. All state and federal regulations regarding the protection and use of patient data are adhered to. Furthermore, the Health Sciences Center is committed to a fully electronic medical record and strives for a single repository of patient and clinical data.

The Health Sciences Center has developed an Information Technology Business Continuity and Disaster Recovery Services Analysis Worksheet that provides a high-level analysis of enterprise level information technology (IT) services provided by the UNM HSC's two enterprise IT components, UNM Hospitals IT and the Health Sciences Library and Informatics Center. The purpose of this document is to address system failure within an IT service that affects core business services. It outlines the dependencies between the services for planning and in the event of an emergency. It will also be used to assess the overall disaster readiness of the enterprise-wide IT services across the HSC, per HSC HIPAA Security policy 9.3 – IT Disaster and Contingency Plan – ePHI, and to help inform leaders of areas where the system's criticality does not match the UNM HSC's the investment in equipment to support the system.

4.4 Services and Systems

We strive for all information management initiatives to be solution-driven not system-driven and service rather than technology-oriented. Services and systems must improve current processes and procedures and align with HSC systems and development architecture. Vendor reliability and stability must be assessed for all proposed purchased services and systems. Business processes and procedures should be carefully analyzed and improved before an automated solution is sought. Buy vs. build decisions should be based on the on cost-benefit analysis that includes factors such as timeliness of implementation, maintenance and upgrade considerations, and ability to be integrated into current environment and available resources.

System Management

The HSC's centralized information technology services must remain reliable, robust and agile. Trained staff are positioned to support each layer of the service stack (e.g. cable plant, networking, systems, business applications, collaboration systems, support, etc.). Upgrade and maintenance support strategies for IT services will include input from the appropriate stakeholders, including business process owners and end users. Upgrades, patches, and downtime will be publicized well in advance, and downtime procedures should be reviewed prior to any scheduled extended downtime.

Web Systems

HSC Web Systems is a service provided to the HSC community. Web Systems incorporates both informational web sites and web-based database applications. HSC web sites adhere to principles and standards for usability, publishing procedures, branding, navigation, graphics and content/application development tools. Responsibilities for development and maintenance of content will be distributed according to the roles defined in the HSC Web Policy.

Web application development is coordinated to assure consistent use of programming and security best practices and stability within the HSC environment. The overall goal is to provide key audiences with a maximally useful and navigable web system that presents a consistent message about the HSC and its components. The HSC Web Policy enables the HSC and its departments to meet this goal (see <http://hsc.unm.edu/library/kmit/policies.shtml>).

Services and Systems Selection and Development

Services and systems selection are supported by analysis that determine effective and efficient means of providing new service needs, as well as upgrading or replacing existing services and systems. Analysis includes conducting needs assessments, environmental scans, vendor analysis, as well as buy vs. build analysis where appropriate. A project committee representative of all primary constituencies that adheres to IT project governance best practices should be utilized to ensure that business process owners and IT systems' owners interests are represented.

4.5 Network Infrastructure

HSC-wide network management has been consolidated into a single group responsible for clinical, academic, and research areas. The HSC has recently formalized an IT Infrastructure Master Plan that formalizes the physical requirements for network and building connectivity. The Plan is being used as a guide for the nearly 1.7M square feet of new construction planned through 2020.

Currently, the HSC TCP/IP backbone (i.e. the network that connects buildings and floors) is a gigabit/second TCP/IP network with small pockets of non-IP protocols remaining in use inside buildings. Ninety-five percent (95%) of desktop ports are connected to the backbone using 100 megabit/second network switches. The HSC is progressing toward increasing the backbone network speed to 10 gigabit/second and increasing the speed of desktop connectivity to the backbone to 1 gigabit/second. Currently, wireless network access exists in most parts of the HSC. Future wireless networking goals include improving wireless network access quality and increasing wireless network coverage across the campus.

4.6 User Support and Training

User support and training recognizes that there are two necessary tasks to be accomplished to provide HSC students, faculty and staff with effective technology skills:

1. Training: Bringing end-users up to an acceptable level of proficiency with core services, systems, and devices.
2. User Support Services: Providing on-going support to end-users to maintain and increase proficiency

Proactive technology training is most effectively and efficiently accomplished in natural groups--such as departmental faculty and staff groups or administrative unit groups. Intervention to introduce new technology to a group should be timed to coincide with the group's connection to new services or systems or other significant event. Experience indicates that downstream, reactive user support resource requirements decrease significantly after a short period of proactive services and systems training.

Long-term Task II user support is provided in several different ways. The HSC provides a range of support, depending upon the requirements and resources of the unit. For example, we provide on-call support for individuals and small units while larger units have departmental experts whom we have trained to provide front-line, just-in-time support, with our organization providing backup and issue escalation services.

Finally, tracking and analysis of user support trends and recurring issues should be a significant factor in guiding the development of new training curriculum and modification of existing training curriculum to improve overall support and training efficiency and effectiveness. Training curriculum should also be coordinated with and utilize existing training services offered by other UNM IT training programs. This analysis should also provide effective feedback to HSC systems and development groups concerning systems effectiveness and usability.