



University Information
Technology Services

2016 Information Technology Plan

January 10, 2016

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Introduction

On January 13, 2014, Associate Professor Bob Beck began his tenure as UWM's Chief Information Officer and Associate Vice Chancellor. Beck's appointment brought to a close the four-year period in which three individuals had served as part-time or interim CIOs. Beck previously served as the College of Letters and Science's CIO (2003-14) and as Director of Academic Technology for UWM's Center for International Education (2000-11).

As first reported in UWM's *2013 IT Plan*, the University continues to examine its budget model for the entire institution and to engage in an institution-wide strategic planning process. Several members of UWM's University Information Technology Services (UITS) participated extensively in the strategic planning process that was led by professor of management Mark Mone until summer 2014 when Dr. Mone was appointed as Interim Chancellor, and subsequently, as Chancellor.

As of this writing, the *UW-Milwaukee Strategic Plan 2020* exists as a largely complete, but not yet final, draft. Because the *UW-Milwaukee Strategic Plan 2020* has not been finalized, UWM has not conducted a formal information technology (IT) strategic planning process tied to it. Nevertheless, the draft and materials that fed into the strategic planning process constitute a rich trove of material that UWM's IT Policy Committee (ITPC) has been examining with the goal of identifying quick wins and policy issues on which they can have an affect. This document captures the current state of those deliberations.

In his second year as CIO during 2015, Bob Beck was instrumental in a major undertaking for UWM - the chartering and creation of an *Integrated Support Services* project [<https://uwm.edu/issp-integrated-support-services/>.] Under the Executive Sponsorship of the Provost and the Vice Chancellor for Finance and Administrative Affairs, this project is an effort to design and implement a structure to provide administrative service excellence across UWM, focusing on the functions of Finance

and Accounting, Procurement, Human Resources, and Information Technology. Among other goals, the campus initiative seeks to accomplish long-term service efficiencies, to make better use of technology, and to enhance professional development opportunities in administrative areas.

The project is comprised of a steering committee, a project manager, and four functional teams, made up of staff professionals who serve in the areas of finance, procurement, human resources and IT at UWM.

This project is expected to provide benefits such as *cost reduction through simplification and standardization, concentration of resources on core higher value activities, increased service quality to the academic and administrative units, improved response to organizational changes, as well as facilitation of technology deployment.*

No projects meet the reporting criteria for UWM's High Cost and Vital IT projects as stipulated by Regent Policy Document 25-4.

University Information Technology Services Cabinet Members

Robert J. Beck	Associate Vice Chancellor and Chief Information Officer
Thomas Bunton	Network & Operations Services Director
David Crass	Research Computing Director
Mike Grypp	Chief Information Security Officer
Ed Melchior	Application Development Manager
Tony Quintero	Human Resources Manager for Finance & Administrative Affairs
Beth Schaefer	UITs IT Services Director
Wendi Steinberg	Budget Manager for Finance & Administrative Affairs

Overview of UW-Milwaukee Strategic Plan 2020

The major organizing constructs of UWM's draft strategic plan are four major goals and a set of associated strategic initiatives.

Strategic Goals

1. **Successful Students:** Graduate highly skilled individuals at all levels, from undergraduate to doctoral.
2. **Research Excellence:** Generate discoveries and scholarly outcomes recognized within the global research community and that impact society, locally to globally.
3. **Community Engagement:** Deepen our positive impact in the city and region through community and business partnerships.
4. **Inclusive and Innovative Culture:** Enhance a culture that embraces innovation, creativity and diverse perspectives within an inclusive environment for all faculty, staff and students.

Strategic Initiatives

1. *Milwaukee Experience:* Develop a "Milwaukee Experience" to make UWM a destination campus that engages students, supports their development, and deepens their pride in the University into their alumni years.
2. *Top-Tier Research:* Develop a top-tier research environment that promotes growing research impact, including focused research clusters.
3. *Community Engagement:* Deepen connections with the Milwaukee community by enhancing pathways for partnerships and collaborations with the local community and businesses.
4. *Academic Programs:* Deliver relevant, innovative, engaging and distinctive academic programs.
5. *Faculty and Staff:* Attract and retain the best faculty and staff to implement focused research and academic programs.
6. *Internationalization:* Strengthen UWM's academic profile and learning outcomes through internationalization of teaching, research, and the campus community.
7. *Climate of Inclusion:* Enhance and infuse diversity (in all its forms) throughout UWM's environment, workforce, student body, programs and activities.
8. *Support UWM:* Strengthen and expand UWM's support with the region and across the state.

Although none of the above goals or initiatives mentions "Information Technology" per se, the draft plan includes various references to the importance of fundamental "infrastructure" and the needs of a "top tier research university." Information Technology, of course, constitutes a critical component of both.

Work Products of the Strategic Planning Thematic Teams

The UWM strategic planning process was informed by the work of thematic teams that consisted of key stakeholders from across campus. The Technology and Research thematic teams in particular were focused on IT-related issues and goals. The UWM IT Policy Committee (ITPC), chaired by Associate Professor Mary Jo Baisch, has begun to examine the work and recommendations of the thematic teams in light of the draft strategic plan.

During the strategic planning process, the Technology Thematic Team focused on four major areas:

1. Infrastructure
2. Teaching & Learning
3. Research
4. Operations & Services

Infrastructure

The first recommendation of the Technology Thematic Team regarding the infrastructure area is to *Establish baseline functionalities, services, and capacities for the IT infrastructure of a top-tier research university of the size and disciplinary coverage of UWM*. Particular action items include:

1. Establish baseline budget and staffing requirements
2. Identify legal, procurement, purchasing, and/or other policies that impede the ability to act
3. Analyze staffing needs relative to baseline and launch hiring program
4. Ensure regular and sufficiently timely maintenance and upgrades
5. Establish quality standards
6. Have a disability expert audit UWM IT systems

The ITPC has focused on the second action item above, i.e., the impediments, and is willing to aid the University in the following tasks:

- a. Analyze and streamline processes (including delegation) that promote the university mission
- b. Advocate for expanded personnel with technological expertise
- c. Prioritize across research, teaching and learning, and operations
- d. Define “baseline” and identify priorities among current and new initiatives

The second recommendation of the Technology Thematic Team in regard to infrastructure is the *Establishment of a permanent budget line for IT infrastructure sufficient for maintenance, upgrades, replacement, and expansion as necessary in order to provide IT support on the level required by a top-tier research university.*

Particular action items include:

- 1. Develop a pan-UWM IT budget
- 2. Establish a practice of buyouts to backfill for staff who are assigned to new projects and services that are requested outside of the planned budgeting cycle.
- 3. Establish a transparent and open process for prioritizing major investments in IT infrastructure and the functions it supports (research, teaching and learning, and operations and services).
- 4. Establish a system of information collection, analysis, and decision-making that appropriately balances resources spent on each stage of the cycle.
- 5. Establish a contingency budget for emergency purposes sufficient to allow UWM to respond in a timely and effective manner to unexpected problems with any element.

The ITPC focused on number 2 above, staffing resources, and recommends:

- a. New IT initiatives/programs include an accounting of and allocation of resources that address all costs including personnel, i.e. departmental staffing. Additional work requires additional staffing.
- b. Streamline hiring processes for staff to avoid loss of faculty and staff with expertise required for the position.

The AVC/CIO has already engaged the AVC for Human Resources in proposals to address item b above, including:

- The hiring of a dedicated recruiter for UITS positions who would be embedded in the Human Resources department.
- The delegation of additional recruitment authority to the HR professional who works within UITS.

The third recommendation of the Technology Thematic Team in regard to infrastructure is to *Incorporate cyberspace into all spatial considerations when considering the footprint, structure, UWM employee work arrangements, potential student pool, community engagement, research context, dissemination, and reputation*. Particular action items include:

1. Treat the entire distributed campus of UWM, including sites in downtown Milwaukee, Wauwatosa, on Lake Michigan, and elsewhere as a single digital space for purposes of research, teaching, and service.
2. Ensure secure communications within UWM virtual space, irrespective of where faculty, staff, and students are geographically located when engaged in UWM business, teaching, and/or research.
3. Provide facilities, either fixed or portable, to enable virtual meeting rooms in each building on each campus so that people don't have to travel for many of their collaborative functions. Such facilities could significantly improve efficiency.

The ITPC is charged with focusing on policy issues and, in regards to #3 above, recommends determining the definition of a quorum for meetings that take place either partially or entirely in virtual space.

Teaching & Learning

The first recommendation of the Technology Thematic Team pertaining to the teaching & learning area is to *Use technology in support of teaching and learning to*

positively affect student access, engagement, learning, assessment, retention, flexibility, satisfaction, and success. Action items include:

1. Explore, evaluate, implement, and disseminate information about technologies that have the potential to positively affect student access, engagement, learning, assessment, retention, flexibility, satisfaction, and success.
2. Promote campus awareness of the teaching and learning units, services, and initiatives to the university.
3. Support students and teachers with informal and formal learning spaces throughout all UWM environments that enable a wide range of instructional and learning styles and formats.
4. Ensure that all course materials and learning environments meet or exceed legal standards for accessibility.
5. Support mobile teaching and learning, so that wherever a UWM student or teacher is located becomes, effectively, a UWM teaching and learning space.
6. Integrate technology support for teaching and learning into academic planning and into successful student initiatives.
7. Support digital data collection, storage, and analysis for student, course, program, and institution-level evaluation in ways that interoperate with UW System.
8. Improve ability to use data-based predictive analytics to better understand student success factors at UWM.
9. Meet or exceed UW System standards for technology enhancement of all classrooms.

Given the fundamental importance of teaching & learning to the University, the ITPC has numerous draft recommendations for making progress on the above action items, including:

- Coordinating use of software and training
- Determining the need for uniformity across uses

- Developing channels of information for support and training
- Identifying use of various hardware and software programs across campus
- Coordinating various services and available across the university; i.e. media, photography, software, costs, infrastructure
- Improving academic governance for WI-FI, and student response systems
- Developing administrative processes for coordinating channels of information
- Identifying technology use policies for classrooms
- Build a more robust search engine for the university website (this could be a quick win, in conjunction with the UWM Libraries)
- Provide support and training for new technologies offering early warning for students
- Planning and assessing the costs of various levels of technology

The ITPC has even more specific recommendations for some of the above points.

The second recommendation of the Technology Thematic Team pertaining to the teaching & learning area is to *Establish the following permanent budget lines for IT support for teaching and learning:*

- a. *Ongoing upgrade of teaching and learning specific investments on a 3-5 year cycle*
- b. *Ongoing maintenance, including personnel*
- c. *Annual expansion of teaching and learning-related technological capacities*
- d. *Continuation of the teaching and learning-specific IT support activities currently offered by LTC, staffed at an adequate level*
- e. *An emergency fund specific to teaching and learning-related technologies and technological support*
- f. *Support for faculty and IT staff ongoing training and development*
- g. *Development/incentive fund to support and stimulate experimentation with uses of technologies for teaching and learning processes in the UWM context*

Particular action items include:

1. Manage teaching and learning IT budget lines as efficiently as possible.
2. Explore and use open access alternatives as appropriate.
3. Centralize oversight of purchasing for teaching and learning related technology related expenditures in the CIO's office.

Because of the obvious policy and political implications, ITPC intends to discuss the third action item, oversight of expenditures, at an upcoming meeting.

The third recommendation of the Technology Thematic Team pertaining to the teaching & learning area is to *Ensure that all UWM students and teachers have the information and technology literacy necessary to succeed in the 21st century.*

Particular action items include:

1. Provide a checklist of information and technology literacy skills pertinent to UWM's technology environment, and provide relevant support materials for teachers, counselors, and administrators in K-12 education as possible.
2. Assess information and technology literacy skills at the beginning of the first semester for each UWM student, and provide each student with training recommendations based on assessment relative to a checklist of information literacy and technology skills needed for success at UWM.
3. Offer a summer information and technology literacy bridge program for those students wishing to ensure that they have the information literacy and technology skills needed for success before starting their classes at UWM.
4. Include introduction to technology resources and training on campus, along with checklist of information literacy and technology skills needed for success, during new student orientation.
5. Ensure that training in information literacy is universally available to UWM students and teachers throughout their involvement with the institution.

The ITPC recommends that the summer bridge programs called for in #3 above be coordinated with other University efforts for recruitment and retention. The ITPC recommends that the training specified in #5 above be offered at orientation sessions for new students and faculty. In particular, the training could focus on the channels for receiving information regarding the institution and the particulars that faculty and students need to know regarding the use of technology.

The fourth recommendation of the Technology Thematic Team pertaining to the teaching & learning area is to *Provide IT support for learning throughout every phase of a student's higher education experience at UWM*. Particular action items include:

1. Use technology to complement and enrich advising from the first semester through to graduation.
2. Develop a web-based toolkit for student researchers (single point of access to software, data storage, training, research assistance).
3. Offer walk-in clinics to support students' use of technologies.
4. Use technologies to support students in their life transitions when they leave UWM with e-portfolios, exit interviews, participation in an alumni community, and alumni tracking.
5. Create spaces for informal learning that encourage lifelong learning in all spaces through daily interactions and relationships on campus and in the community.
6. Improve the technological systems used to facilitate on-campus employment for students, making it easier for students to stay in school while they are working.
7. In addition to funding, are there any risks or barriers that are likely to preclude achievement

The fifth recommendation of the Technology Thematic Team pertaining to the teaching & learning area is to *Provide IT support throughout every instructor's professional lifecycle*. Particular action items include:

1. Include interview with IT teaching and learning specialist among orientation activities to determine what kinds of training, support, and/or specific pieces of equipment or software may be needed.
2. Provide recruitment and orientation through a technology-supported one-stop shop.
3. Continue practice of providing wide range of types of training opportunities for those developing or adapting courses or who wish to expand their range of technology-mediated teaching skills throughout their teaching years at UWM.
4. Provide technical support for preparation of course materials for online use that require advanced skills (e.g., preparing video clips for use in a course).
5. Provide training regarding the application of intellectual property rights, including those to course materials.
6. Provide training and necessary resources for course accessibility.
7. Ensure that all training in technology-mediated teaching and learning is proactively made available to those instructors who are not tenure track faculty members.
8. Support peer-to-peer learning in the area of technology-mediated teaching.
9. The adoption of 21st century technology in teaching should be viewed as a form of teaching innovation by relevant units on campus.
10. Develop common boilerplate language on instructional IT support so that researchers writing grants related to teaching and learning can easily and consistently address instructional support IT in their grant reports.

The sixth recommendation of the Technology Thematic Team pertaining to the teaching & learning area is to *Provide IT support for teaching and learning as requested at the academic unit level*. Particular action items include:

1. Facilitate departmental development of a culture that values instructional maximization of existing IT resources and use of related accountability systems.
2. Provide training and assistance for those units wishing to establish a standardized design approach across all of a unit's online and blended courses.
3. Promote cohort-based and individualized training plans for units.
4. Provide consultation to those units considering extending their uses of technology in new programmatic directions.
5. Maximize use of digital record-keeping of teaching and learning activities for the purposes of assessment.
6. Use IT to maximize use of resources, including classrooms, hardware, software licenses, and staff.
7. Support online student evaluations.
8. Provide incentives for faculty to teach niche courses across the institution.

Regarding the cohort and individual training venues recommended in #3 above, the ITPC has expressed concern as to who or what unit is responsible for the function. Regarding recommendation #8 for teaching niche courses, the ITPC has expressed concerns and recommends clarification surrounding:

- What is the system for piloting technology?
- When and how is the pilot institutionalized into the broader university?
- What is the incentive for institutionalization?

Research

In the strategic planning process, the technology needs in the area of Research were address by the Technology Thematic Team as well as a dedicated Research Thematic Team. Representatives of both Thematic Teams are on the ITPC working group that will be reviewing the draft strategic plan in light of the recommendations from the Thematic Teams later in 2015. Since that work has not yet been completed,

the following is simply a listing of the recommendations and action items without any additional feedback from the ITPC.

The first recommendation pertaining to the research area is to *Establish a stable and sustainable funding strategy to support a flexible cyberinfrastructure that can adequately meet the requirements of top tier research while incorporating efficiencies to maximize value*. Particular action items include:

1. Design a budget that includes stable funding lines adequate for IT support of top-tier research, including participating in trends such as big data, long-lived archives for data reuse, research collaborations from the local to the global, and reliance upon visualization for diverse research functions and regardless of disability. Include specific line items for the following:
 - a. ongoing upgrade of research infrastructural investments on a 5-year replacement cycle
 - b. ongoing maintenance provision of space, cooling, energy, and related costs as required by research computing
 - c. annual expansion of cyberinfrastructure capacities in line with institutional strategic priorities research IT support personnel staffed at a level sufficient to meet other objectives listed here
 - d. an emergency fund specific to research support for faculty and IT staff ongoing training and development
2. Incorporate record-keeping for cyberinfrastructure-related expenses at all levels of the campus so that expenditures in this area can be accurately monitored.
3. Establish procedures for prioritizing large-scale institution-level research IT investments.
4. Incorporate an optimum funding model for research IT in the new UWM budget design.
5. Develop shared service models for leveraging and sharing investments in cyberinfrastructure across the university.

6. Include consideration of research open access initiatives and open-source software when making cyberinfrastructure decisions.

The second recommendation pertaining to the research area is to *Establish coordinated mechanisms to ensure adequate research IT support across the university. Transition from current practice of faculty research IT self-support to IT support by dedicated research IT staff in order to maximize the ability of faculty to conduct research.* Particular action items include:

- a. Establish a research IT support, training and outreach office with the following functions:
 - Organizational focal point for central, distributed and local IT research support staff that utilizes a shared service support model to provide support for researchers
 - Physical and Digital help desk for routine questions about research software, hardware, data management and other research-related IT matters.
 - Venue for training, experimentation with research IT hardware and software, and convening mutual support groups of researchers who share research IT needs and expertise
 - Offer ongoing training in research IT software and hardware researchers and research IT support staff
- b. Redesign job positions so that research IT support is provided by specialists in that area in order to maximize the depth and range of kinds of support that can be provided.
- c. Create dedicated full positions for research IT support personnel that establish a career path for specialized technicians that include funding for travel and training, incentives for ever-increasing knowledge and expertise, and rewards for successful experience.
- d. Based in the research IT support office, provide IT support for researchers for every phase of a research project, from initial consultation, design and

- recommendation of data collection and analysis methods through what will be needed for public dissemination of results and ensuring that data, as required and appropriate, are available in long-lived archives for interdisciplinary and longitudinal reuse.
- e. Upon request, assign research IT staff to provide project-specific support to the researcher for the entire life cycle of the project. Use a “case manager” model to provide both direct support as well as a liaison with others who may have additional needed expertise.
 - f. Facilitate the development of campus-wide networks of researchers who utilize similar IT technologies and techniques, irrespective of disciplinary homes, to enhance peer-to-peer support.
 - g. Provide website design, production, and maintenance support for public access to research findings.
 - h. Provide researchers with information on opportunities and assistance in developing, promoting and maintaining their online presence as researchers.

The third recommendation pertaining to the research area is to *Provide cyberinfrastructure support throughout every phase of a researcher's professional life cycle*. Action items include:

- a. During faculty candidate interviews, include time for conversations with those in IT and include IT decision-makers when crafting commitments made in job offers.
- b. For new faculty hires, include time with an IT person among employee orientation activities.
- c. Make available annual contact with research computing expert for every researcher to explore experiences, needs, problems, successes, recommendations, requests for training, etc.
- d. Support refreshment of IT skills via faculty development, sabbaticals, and mid-career opportunities.
- e. Include discussion of long-lived archiving and other research access issues involving IT in retirement conversations.

- f. Provide researchers with information on opportunities and assistance in developing, promoting and maintaining their online presence as researchers.

University Operations & Services

The first recommendation of the Technology Thematic Team pertaining to the University Operations & Services area is to *Ensure that the university working environment and workflows take maximal advantage of the capabilities offered by digital technologies for efficiency, cost-effectiveness, accessibility, usability, security, and accomplishment of the missions of each operational and service unit within constraints established by the UW System.* Particular action items include:

1. Review existing software systems for university operations under the control of UWM for competitiveness given contemporary offerings.
2. Transition those UWM systems that remain paper-based to digital systems.
3. Use IT to facilitate centralization of operations and services where it is beneficial in terms of efficiencies and/or quality of service to do so.
4. Ensure adequate security and controls for university operations and services IT.
5. Ensure adequate personnel support with expertise specific to operations and services IT.
6. Continue to support ongoing training and development for staff, including operations and services IT staff as well as users of those technologies.
7. Ensure that students, faculty, and staff can use their personal widely used devices and services within university policy parameters.
8. Review university operations and services budget lines to ensure that they include adequate support for ongoing support for, maintenance of, and upgrades of software, hardware, and use.

Regarding #2, the transition from paper-based to digital systems, the ITPC urges that particular attention be to:

- Hiring across levels of staff (faculty to graduate students).
- Affirmation of agreement by e-panther ID rather than physical signature.

- Identification of all non-legal documents that do not have an external requirement for a physical signature such that digital approval is equivalent to signed approval.

The second recommendation of the Technology Thematic Team pertaining to the University Operations & Services area is to *Coordinate and rationalize purchasing across central and distributed IT units to achieve university-wide savings*. Particular action items include:

1. Rationalize purchasing across central and distributed IT units to achieve university-wide savings.
2. Develop a university-wide group to the representatives to various UW System steering committees to provide input into the planning and provisioning of UW Common System funds.
3. Review interfaces with university operations and services to ensure their usability by students, faculty, and/or staff who may not yet have had an opportunity to avail themselves of university resources in the area of technological and information literacy and who do not yet have those skills and types of knowledge themselves.
4. Create a one-stop student services website that includes a "how-to" or help desk for available academic and technology resources.
5. Create a one-stop employee services website for faculty and staff that includes links to available resources or a help desk.
6. Create a one-stop advising website that includes links to available resources and can serve as a first point of contact for students.
7. Provide dedicated staff for the university operations and services support desks.

Regarding #1, the rationalizing of purchasing, the ITPC recommends beginning by reviewing and implementing guidelines for standardizing and/or coordinating computer purchasing procedures. The ITPC recommends that the campus-level meeting of representatives to all of the various UW System steering committees that

is specified in #2 above be held at least annually. The ITPC interprets recommendation #7 as calling for the hiring of full time employees to augment and/or replace student staff at support desks. Before embarking down this road the ITPC recommends an assessment of the current situation including staffing levels, the different requirements for supporting faculty and staff versus students, and the possible overlaps between existing support desks.

The third recommendation of the Technology Thematic Team pertaining to the University Operations & Services area is to *Facilitate and support ongoing evaluation and improvement of university operations and services*. Particular action items include:

1. Facilitate and support continuous process improvement.
2. Establish centralized support for technology experimentation and innovation for university operations and services.
3. Conduct iterative usability evaluations to ensure the specific needs of UWM's quite culturally diverse populations from both within the US and around the world are being met.
4. Include a specific budget line for workflow improvement initiatives.
5. Integrate full communications into the life cycle of IT projects and services.
6. Foster an institutional culture of IT Project Management methodology.

The ITPC has not commented on either this recommendation or its action items.

Summary

The University of Wisconsin-Milwaukee is currently concluding its first, campus-wide strategic planning process in more than a two decades. The adoption of a new budget model also seems likely imminent. Also likely is a campus decision to implement "shared services," currently in the *Integrated Support Services* project's "as-is" assessment phase.

Because the *UW-Milwaukee Strategic Plan 2020* has not been finalized, UWM has not conducted a formal IT strategic planning process tied to it. Nevertheless, the draft and the materials that fed into the strategic planning process have provided a rich trove of material that UWM's IT Policy Committee is currently examining with the goal of identifying quick wins and policy issues on which they can have an affect. This document captures the current state of those deliberations.

Depending upon how quickly the *UW-Milwaukee Strategic Plan 2020* is finalized, a decision will be made as to whether or not to embark upon an IT strategic planning process in 2016. IT strategic planning will also be informed by the recommendations of the "Chancellor's Campus Organization & Effectiveness Team" (CCOET - <https://uwm.edu/chancellor/chancellors-campus-organization-effectiveness-team-ccoet/>) upon which CIO Bob Beck has been serving and whose deliberations are scheduled to conclude in mid-February of 2016.