

Common Systems Roadmap

Common Systems Review Group University of Wisconsin System

Prepared by Strategic Initiatives, Inc



Strategic Initiatives Inc.
MANAGEMENT CONSULTANTS

Contents

- I. Three Interacting Elements in Leveraging Technology**
- II. Timeframes for Leveraging Technology**
- III. Technologies to Watch and Leverage**
- IV. Common Systems Roadmap**

**Common Systems Review Group
November 2008**

**Darrell Bazzell
Vice Chancellor, Administration
UW-Madison**

**Rita Cheng
Provost/Vice Chancellor
UW-Milwaukee**

**Bob Hetzel
Vice Chancellor Admin & Finance
UW-La Crosse**

**David Dumke
Chief Information Officer
UW-Stevens Point**

**Jack Duwe
Deputy Chief Information Officer
UW-Madison**

**Tom Sonnleitner
Vice Chancellor Administrative Services
UW-Oshkosh**

**Lisa Wheeler
Interim Vice Chancellor, Administration
& Finance
UW-River Falls**

**Kathy Pletcher
Chief Information Officer
UW-Green Bay**

**Jan Hanson
Vice Chancellor, Administration &
Finance
UW-Superior**

**Christine Clements
Interim Provost/Vice Chancellor
UW-Whitewater**

**John Krogman
Chief Information Officer
UW-Platteville**

**Julie Furst-Bowe
Provost/Vice Chancellor
UW-Stout**

**Petra Roter
Vice Chancellor for Student Affairs
UW-Oshkosh**

**Tom Dock
Interim Vice Chancellor, Business &
Student Services
UW-Eau Claire**

**William W. Streeter
Vice Chancellor, Admin. & Fiscal Affairs
UW-Parkside**

**Steve Wildeck
Vice Chancellor, Admin & Financial
Services
UW-Colleges**

**Debbie Durcan [co-chair]
Vice President for Finance
UW System Administration**

**Ed Meachen [co-chair]
Associate Vice President
Learning & Information Technology
UW System Administration**

The University of Wisconsin Common Systems Roadmap

A Ten-Year View

Introduction

Never have university students been more engaged with technology than those enrolled today. Our entering students have not known the world without the internet. Through the rapid transmission of information possible with our new technology, our students now study, learn, and communicate with their faculty and fellow students. They register and conduct business transactions on line. Their faculty and support staff are hired and paid through new technology systems. Advising transcripts and grades are communicated on line. Traditional paperwork is yielding to electronic forms for processing transactions and communication. For the academic enterprise the age of the “handout” has passed, as faculty today post lecture outlines, syllabi, and classroom materials in secure environments on the internet for their students to access.

The academic experience has become so highly dependent on our information systems that universities must place budgetary priority on investments in the implementation and maintenance of robust systems. Keeping rapidly changing technology up-to-date has become a critical challenge to today’s university, and as a result, technology costs contribute significantly to the rising costs of operating our universities. Whereas ten years ago, campuses worked to identify themselves as “fully wired” to attract students, now a competitive university must strive to be “fully wireless.”

The provision of robust common technology systems across the University of Wisconsin campuses helps the UW System fulfill its academic mission. By sharing common systems, campuses will provide students, faculty and staff, more efficient and better quality technology systems than what they could afford on their own. Meeting the individual needs of our diverse campuses, however, presents significant challenges. The challenges include prioritization and support for a host of large enterprise systems, business re-engineering, funding and on-going support. The University of Wisconsin has tasked the Common Systems Review Group to tackle these challenges.

The Common Systems Review Group (CSRG) was created in 1998 to provide oversight and leadership for large information technology systems used by all or most of the fifteen institutions in the University of Wisconsin System. Each UW institution has a voting representative on CSRG, either a Chief Academic Officer, a Chief Business Officer or a Chief Information Officer. By 2007 the CSRG had a portfolio of seven major common systems. CSRG hired Strategic Initiatives, Inc. in 2007 to help it develop a long range vision, or information technology roadmap, to enable better decisions about adopting or rejecting new applications, to understand how ongoing applications might fit together to offer the best value for the investment, and to demonstrate how large cross-institutional IT projects might enable the UW System to better achieve its long-term academic and business goals. Strategic Initiatives, Inc. again worked with CSRG in November 2008 to update the technology roadmap.

CSRG chose a ten-year time period for its roadmap, knowing full well that by 2018 the UW will be using technologies to achieve operating strategies that have yet to

be invented. Taking the long view is not about predicting the future of technology—it is about understanding how technology must support the educational, research, social and business goals of the state and the University of Wisconsin over the long term. The CSRG understands very well that it must see the long view while making budget decisions about the following year.

The Common Systems Roadmap is *not* a strategic plan. It is, like any other roadmap, a graphical view of many possible ways to get to a destination. The CSRG has determined that the likely destination involves a growth agenda, a substantial increase in the number of students including non-traditional students over the next ten years, with the possibility of less state investment per student, but with the expectation that the quality of a UW education will remain as high as it is today. To help maintain or improve quality, increase access, and reduce cost per student, technology investments must enable UW System institutions to help accomplish the following:

- Deliver high quality education to students wherever and whenever they desire it.
- Improve knowledge management and data driven decision making to better facilitate student access and learning.
- Add measurable value to faculty, staff and students by “cutting red tape,” improving service, and enabling all faculty and staff to work more efficiently and effectively.
- Improve business processes to benefit faculty, staff and administrators across all institutions.
- Reduce the risks inherent in supporting twenty- and thirty-year old legacy systems with their use of technology that few professional IT workers understand, and that require large investments in programming to keep current.

The *Common Systems Roadmap* has four parts. The first part, “*Three Interacting Elements in Leveraging Technology*,” graphically depicts the inter-relationship between the technology infrastructure built over the past ten years by the Common Systems Review Group, the policies and practices the UW must address to make the most effective use of the technology infrastructure in achieving our goals, and the academic and administrative innovations which will become possible in the next decade. The CSRG has taken the liberty of imagining some of the possible innovations as the technology tools and policies come into alignment. Especially significant is the possibility of using collaboration across institutions to offer students a more extensive curriculum than they can get at any single institution, and offer it whenever and wherever students need it.

The second part, “*Timeframes for Leveraging Technology*,” sets out five- and ten-year goals for achieving academic and administrative innovations. The technology infrastructure, the business of the CSRG, is being built each year, but it is already well defined and supportive of collaboration. Rethinking policies, processes and practices may well take longer, and CSRG will identify areas that need reformulation to make the best use of the technology investments, and ask other administrators to examine those areas. Finally, CSRG believes that ten years out—or earlier—the technology and the policy realignment will provide the opportunity to create highly scalable online programs, support improved knowledge management, and enhance student choice, access, affordability and success.

The third part, “*Technologies to Watch and to Leverage*,” catalogs technologies with the potential to add value for UW institutions across administrative and academic services. Many of these technologies are already being employed at individual institutions, but they are not currently supported collaboratively by CSRG. The catalog is by no means exhaustive. Rather, it is a template for reminding us that we need to scan the environment every year or two for applications that may potentially improve support for the core mission of our institutions.

The fourth part, “*Common Systems Roadmap*,” portrays the current portfolio of systems supported by CSRG, services that we may be examining within the next year, and challenges for the immediate future. These two pages are meant to provide a snapshot of the common systems in 2008 with pertinent information about current challenges and decision points on the Common Systems Review Group’s agenda in the next twelve months.

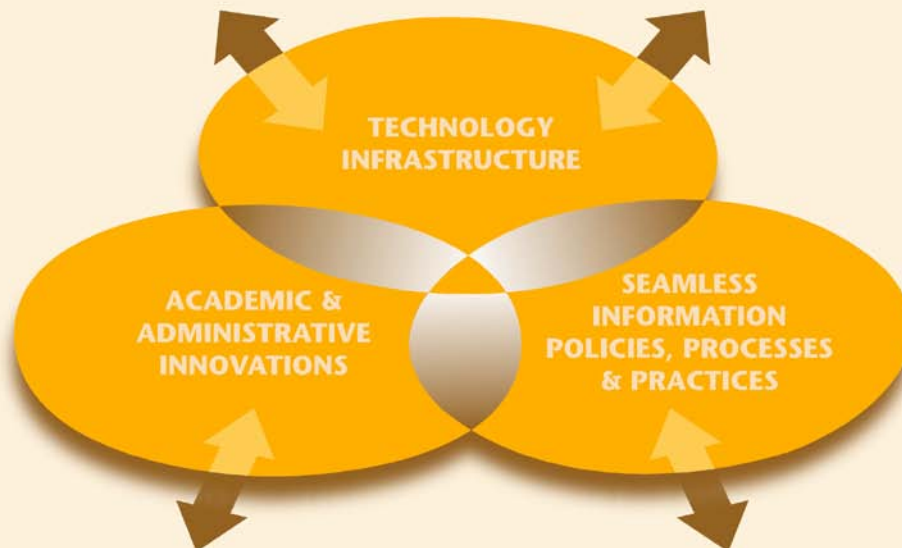
Three Interacting Elements in Leveraging Technology

COMMON SYSTEMS, SUITES AND SERVICES

- Intra-Campus Broadband
- System-wide Enterprise Applications
- Common Systems Review Group provides insights on leveraging technology, eliminates barriers to innovations, and dramatizes needs in other "circles" (seamless, and innovation)

INDIVIDUAL CAMPUS INFRASTRUCTURES

- Wireless
- Telecommunications
- Technology in Buildings/Facilities Master Planning
- Campus Enterprise Network Infrastructure
- Campus Applications and Processes



ACADEMIC INNOVATIONS

- Individual, isolated faculty applications, using D2L to create virtual and blended learning (innovation with a lower case "i")
- Online programs/collaborative degree programs with new business models
- Scalable, online programs that serve students systemwide and change business models (Innovation with a capital "I")

ADMINISTRATIVE INNOVATIONS

- Shared Services • Student Support Services

ACHIEVE "SEAMLESS" INFORMATION AND PRACTICE POLICIES

- State policies
- Consistent definitions
- KPIs/Metrics
- Capacity to offer "the best of best" across the system
- Calendars, catalogs, course numbering
- Capacity to share tuition for concurrent enrollments

UW Strategic Directions Influence All Elements

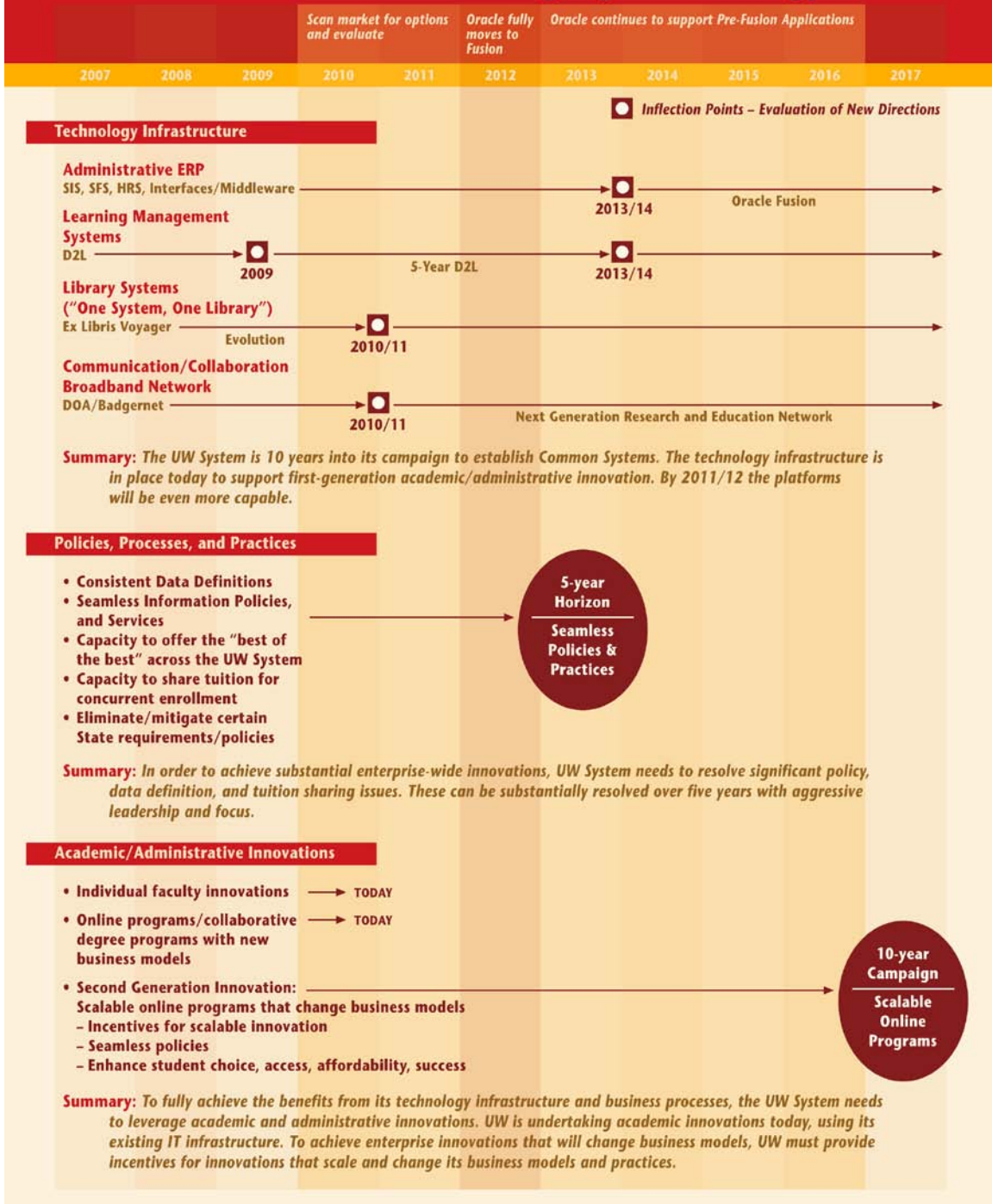
Three Interacting Elements in Leveraging Technology

This graphic captures the CSRG vision for common systems. The first element, “Technology Infrastructure,” goes beyond common systems to include individual campus technologies. The graphic envisions a robust, efficient support for immediate business and academic needs while eliminating barriers to innovation in the future. The common technology infrastructure is designed to ensure the possibility for high quality, high value applications and services for students, faculty and staff at every one of the twenty-six campuses of the University of Wisconsin without regard to size or geographical location.

To enable maximum value for our investments in technology infrastructure, the CSRG envisions the achievement of “seamless” policies. This second element, aligning policies, processes, and practices across all UW institutions, is work beyond anything that the CSRG can undertake. Yet, without that alignment, the technology infrastructure loses value, becomes more costly to implement and maintain, and hinders the potential for future innovation. CSRG sees this interacting element as the domain of administrators at all levels across the UW System.

CSRG believes the third and most important element in leveraging technology is innovation. Many innovations that improve quality and add value will be possible with a robust technology infrastructure leveraged by policy and practice alignment across the UW System. CSRG is suggesting possible areas for innovation, including improved student support services, scalable online programs, and shared business services. These suggestions are not meant to be prescriptive. They represent a potential vision for the future if we can leverage our technology investments in a thoughtful and strategic fashion. CSRG is making the case that common technology systems that do not lead to innovations fail to achieve the value on investment possible with 21st century technologies. Moreover, CSRG believes leveraging the common systems will help the University of Wisconsin achieve the goals the Board of Regent sets out in its strategic planning efforts.

Timeframes for Leveraging Technology



Timeframes for Leveraging Technology

Timeframes for Leveraging Technology casts the *Three Interacting Elements in Leveraging Technology* in a ten-year graphical picture from 2007 to 2017. The top third of the picture depicts our best estimate for the evolution of our current portfolio of technology applications. Inflection points are estimates of critical decision points for particular enterprise systems. These inflection points will be further explained in the *Common Systems Roadmap* graphic. If the timeline were to be extended backwards, we would see that the creation of the common systems infrastructure portfolio goes back to 1997, the beginning of the implementation of the library automation system.

The second third of the page sets a target timeline for bringing institutional policies and procedures into alignment in order to effectively leverage our technology investments. CSRG is estimating that policy changes will be ongoing, but targets a five-year horizon to accomplish much of this task.

The final piece of the timeframe looks out ten years to what CSRG is calling “second generation innovation.” By this we mean using current and future technologies to remain competitive and cost-effective in providing high-quality education to an increasing number and diversity of University of Wisconsin students. There are many possible ways to accomplish this, including scaling up online programs and reducing administrative overhead. Technology can certainly enable the University of Wisconsin to extend its instructional reach and enhance the quality of student and academic support services. The comprehensiveness and flexibility of the technology we employ will allow faculty and administrators much greater opportunity to achieve our mission outcomes.

Technologies to Watch

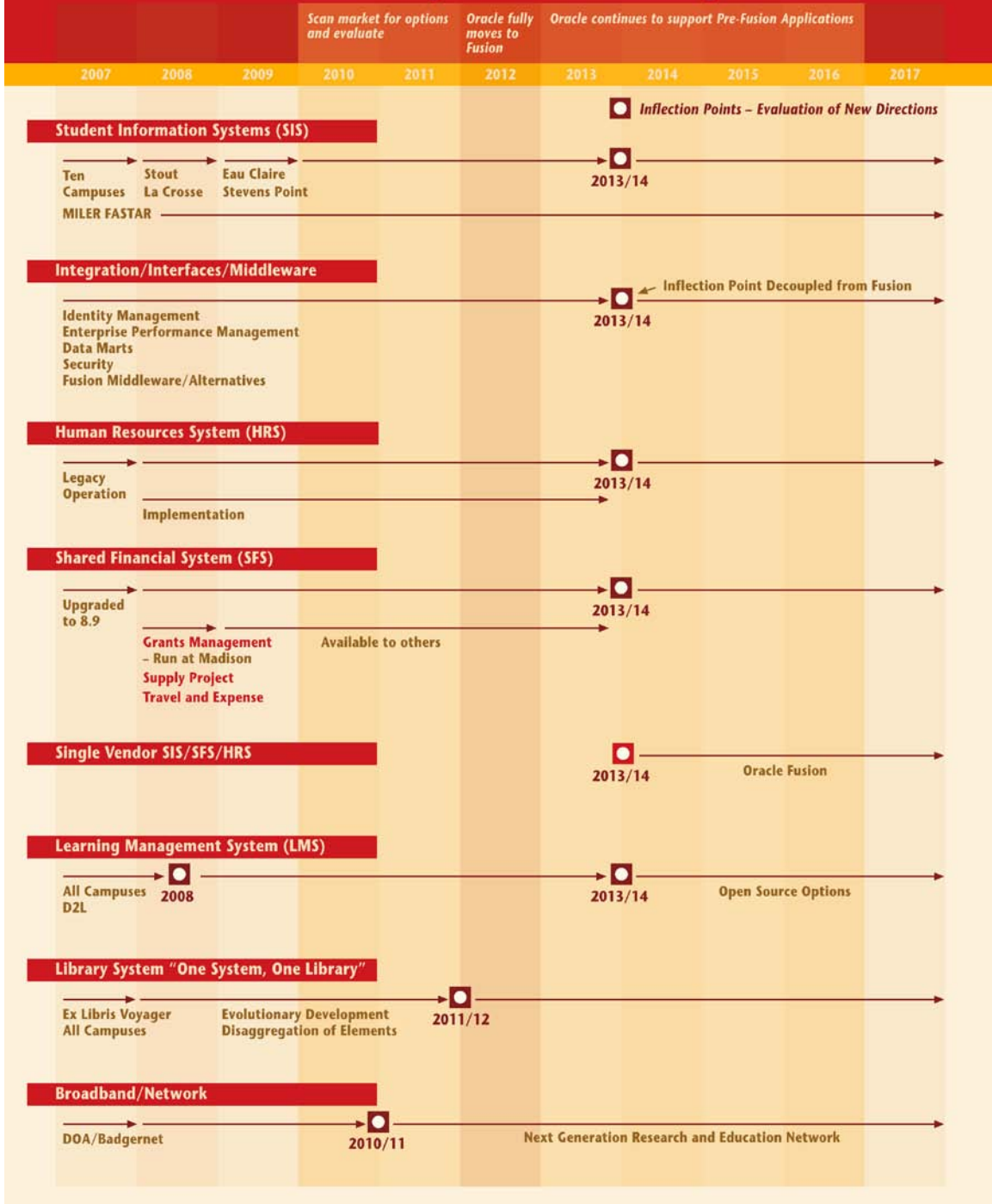


Technologies to Watch and to Leverage

This graphic, even updated annually, will always be behind the technology curve. Its purpose is to remind us that technologies are tools that provide opportunity to improve teaching and learning. We believe that some of the “technologies to watch” may add substantial value to students’ education, to faculties’ ability to deliver more effective teaching, and to administrators’ efforts to better support the enterprise. We know, for example, that security of sensitive information will remain critical, and that CSRG must continue to monitor emerging and effective technologies to stay ahead of hackers.

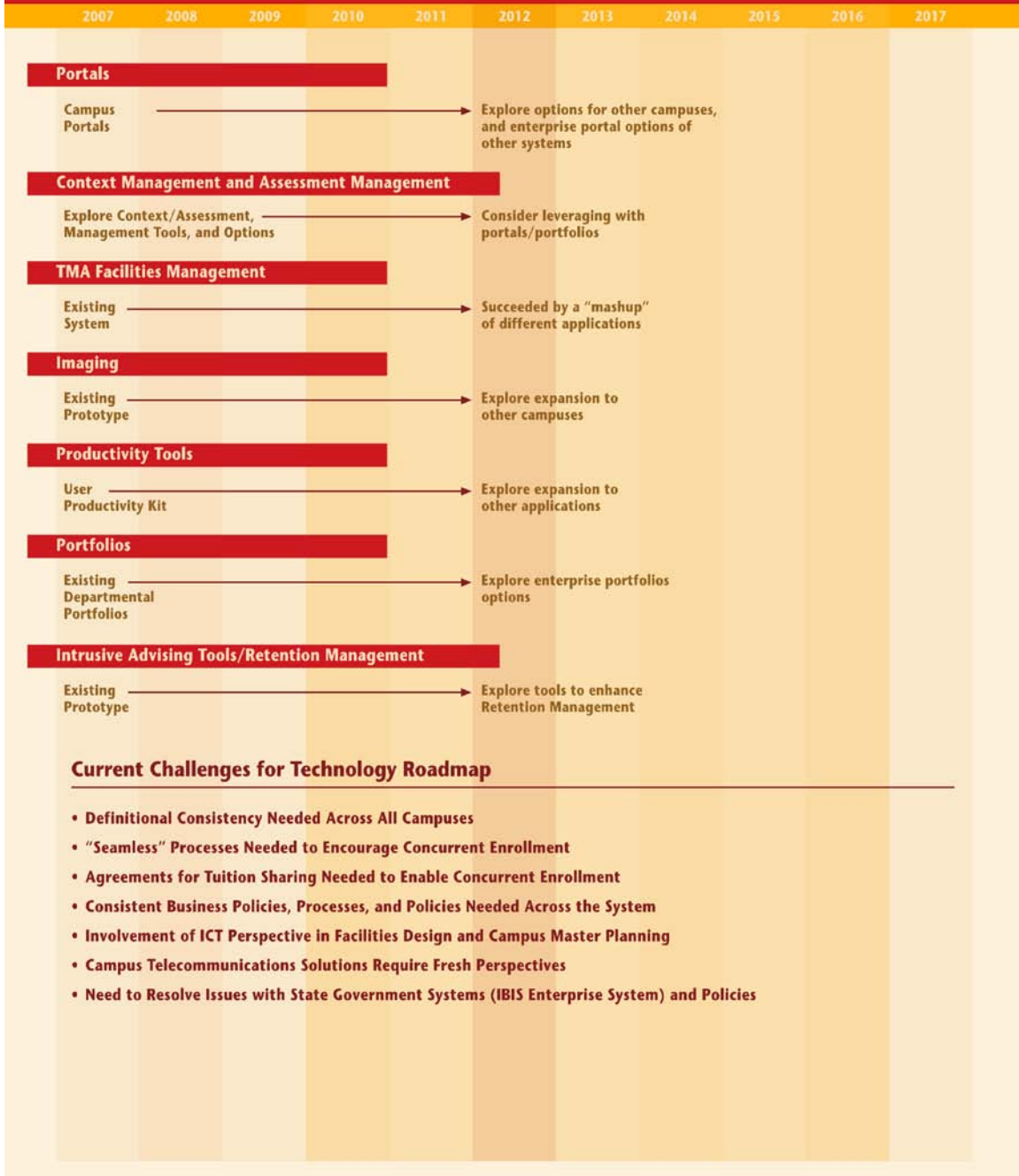
In addition, CSRG will have opportunities to leverage the value of the enterprise systems we currently have with emerging “collateral” applications. New, easy-to-use business intelligence tools are coming on the market that allow administrators to harvest data generated by the large enterprise systems and portray that data in an actionable format in what is referred to as a “digital dashboard.” These collateral applications may provide enormous added value at relatively low cost and CSRG will need to pay attention to them over the course of the next ten years.

Common Systems Roadmap



Common Systems Roadmap (continued)

Areas for Continuing Exploration



Common Systems Roadmap

The Common Systems Roadmap catalogs eight major projects with significant UW investment. To fully understand this “high level” roadmap, it is necessary to know a few facts about what the projects have in common and a few facts about each individual project that add value and differentiate them from each other. For a description of the individual projects, see the white paper, *Changing Perspectives on Technology* (April 23, 2007).

These projects are vital to the management and delivery of teaching, research and public service in the University of Wisconsin. All of them are necessary at every institution, and if they had to be undertaken individually at every institution, the total cost would exceed the cost of implementing and managing them collaboratively. Finally, enabling disparate systems to communicate with each other, guaranteeing a high level of security across all the institutions, and providing a high standard of service for students, faculty and staff across the UW System would be much more difficult, if not impossible, to manage in a model where each institution procured and implemented all of these systems independently. Across the country, higher education systems are moving towards collaboration in implementing enterprise systems. The California State Universities, the University of Georgia System, the Minnesota State Colleges and Universities (MnSCU) and the North Carolina System are all examples of this common systems effort.

The current CSRG project portfolio includes:

- Student Information Systems: these systems enable students to register for courses, obtain financial aid, pay bills, monitor their courses to ensure they have all the prerequisites for graduation, arrange advising help, and provide many other tools to enable faculty and students to work more effectively.
- Shared Financial System: this system enables UW institutions to manage more efficiently the business of the university, including purchasing, general ledger, payables, billing, and grants management among other processes.
- Human Resource System: when implemented this system will allow more efficient management of payroll, benefits, recruitment, appointments, and employee self-service. Human Resource System will be integrated with the Student Information and Shared Financial systems to improve information sharing and reduce duplication of effort.
- Learning Management System: provides tools that facilitate all aspects of faculty instruction and student learning in a Web environment.
- Library System: enables students, faculty and staff to locate and obtain books, journals, media and other learning materials wherever they might be within the UW System.
- Integration/Interfaces/Middleware: these systems facilitate the flow of information across the Student Information, Financial, Human Resource, Learning Management and Library systems. They provide security against personal data theft, help guarantee data integrity, and establish

permissions for those people who are allowed access to our academic and administrative systems.

- **Broadband network:** Although not part of the responsibility of CSRG, the broadband network is a shared resource among all UW institutions. It is used for research and education, and is being built with an architecture that will provide dramatic savings as compared with commercial costs when UW institutions require more network capacity.
- **Single vendor SIS/SFS/HRS:** Oracle/PeopleSoft is the vendor of our three largest and most complex systems. Oracle plans to better integrate its product suites with a new technical architecture sometime around 2011 or 2012. This new architecture, named “Fusion,” will require the UW to decide when and if it will make the investment to move to Fusion.

The “inflection” points represent approximate critical decision times in the lifecycle of the enterprise system. For example, the inflection point for the broadband network is 2010/2011, the end of the current BadgerNet Converged Network (BCN) contract that is used by most of our institutions. The inflection point for most of our enterprise administrative systems is 2011/2012, the proposed date at which Oracle’s new “Fusion” architecture becomes available.

Common Systems Roadmap – Areas for Exploration

The Roadmap also includes applications currently used by some campuses that may have longer-term and wider application across all our institutions. For example, many institutions have invested heavily in “portal” technology. A portal is a one-stop shop for students, faculty and staff, linking many of the services that they are interested in on one or two web pages. Not all UW institutions have adopted a portal. While all might agree that it has value, there is not agreement on a single portal for all institutions.

The “current challenges for technology roadmap” section identifies some of the potential inhibitors to leveraging the technologies we have implemented or will be implementing. Many of the challenges originate with legacy policies and processes that have served individual institutions very well but may serve to inhibit a more tightly knit and collaborative system. Thus, policies and processes are one of the critical “three interacting elements” that may limit how we use technology to achieve our goals.