

**State of Wisconsin
Department of Administration**

**2010 Statewide Strategic Plan for
Information Technology**

Strengthening Wisconsin's IT Community



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The Honorable Jim Doyle
Co-Chairs, Joint Committee on Information Policy and Technology

The 2010 Statewide Strategic Plan for Information Technology reports on the state's information technology goals and strategies for the upcoming biennium. This satisfies the requirements of sec. 16.971(2)(m) Wisconsin Statutes, which requires the Department of Administration to submit the statewide strategic plan to the Governor and the Co-Chairs of the Joint Committee on Information Policy and Technology no later than September 15th of each even-numbered year. This report is written as a collaborative effort by the State of Wisconsin Information Technology Directors Council (ITDC).

The 2010 statewide IT plan continues to build off efforts highlighted in the 2008 report. The 2010 plan is organized around three overall goals:

- Increase collaboration;
- Enhance service delivery, and;
- Expand utilization of technologies to improve efficiencies.

Over the last four years, the state's Chief Information Officer, Oskar Anderson, and the state's Information Technology Directors Council have worked together to devise and implement structured and reliable approaches for evaluating how IT resources should be applied. Continued collaboration will occur with all agencies as well as with the Information Technology Management Board and the Joint Committee on Information Policy and Technology.

Enhancement of delivery for information technology services includes strategies to improve customer services as well as security and privacy protections. In addition, this goal focuses on developing services that better align with business requirements.

Finally, the 2010 statewide IT plan looks ahead to the expanded use of technologies to improve efficiency. These include virtualization, social networking and mobile applications, cloud computing, green IT, among other efforts.

Thank you for your consideration of this plan.

Respectfully submitted,

Daniel J. Schooff, Secretary
Department of Administration



FOREWORD FROM THE STATE CHIEF INFORMATION OFFICER

The two years that have passed since creation of the last Statewide Information Technology Plan for Wisconsin have been exciting. Self-service transactions for customers, Web sites for sharing data and powerful mobile devices have continued to push automation outward. Our customers and our employees expect to be able to communicate and perform their required functions anytime and anywhere.

The continued advance of technology and the computer industry's ability to exploit that advance has been spectacular. Innovative people harnessed the glass-house mainframe computers to perform efficient local processing decades ago, and innovative people are now harnessing the power of global processing, global networks and global skill sets to raise speed and efficiencies to an entirely new level. The outward reach of our local information technology can be global, and the world can likewise utilize Wisconsin technology.

There is a relatively new topic dominating many information technology planning conversations: cloud computing. While the term is quite new, the concept is not. Driving economies of scale through shared resources is the basic selling point for cloud. For many organizations their first foray into computer usage was the creation of a computer room and the purchase of a computer to provide all processing required, and data was confined to the computer room except for the limited sharing achieved through reports. The Internet, sophisticated software and powerful hardware has now taken interconnectivity to a global level; processing capacity and data can be shared around the world. The huge increase in prospective customers that can share facilities will drive costs dramatically lower. The question for most organizations is how quickly they will move to cloud computing, not whether they will move. Cost will drive early adoption while lack of familiarity with this new level of distributed processing will hold it back. In my opinion, the various flavors of cloud computing (private, public, hybrid) need to be considered for each service we buy. The cloud may offer a means to delivering more service in a fixed or shrinking budget if used correctly.

The Internet is our modern super-highway system, connecting people around the world. It is critically important that as many citizens as possible in Wisconsin have access to this super-highway as soon as possible. It is hard to imagine anything more important to our economy. Education, public notices, and services of all types are increasingly dependent upon the Internet for delivery. Wisconsin has made good strides in providing Internet access to citizens, and an opportunity to make huge strides very quickly is in our grasp. Wisconsin has prepared numerous very good proposals for using American Recovery and Reinvestment Act funds to extend our broadband capability, and many of them have been approved. This new infusion of capital together with the Public Service Commission mapping of all current and proposed broadband in the state will provide Wisconsin with the tools to coordinate efforts and become a standout in business and citizen provisioning.

Governor Doyle has named the State CIO to the Wisconsin Homeland Security Council and to the WIRED for Health Board within the past two years. These appointments are indicators of the growing impact and opportunity of the Internet, the opportunity to share health information, and the need to protect our data from others on the Internet. The attention that homeland security needs to pay to cyber security has dramatically increased. The state network sites are continually under scrutiny by the criminal element and by unfriendly foreign entities. We have created a cyber annex to our emergency management manual to define roles and responsibilities during a cyber attack, and have amended statutes to allow the Department of Administration to



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take a lead role for cyber events. We now have a better-defined role in protecting organizations on our part of the global network.

The WIRED for Health Board is providing guidance in the creation of a Health Information Exchange (HIE) for Wisconsin. At this point a plan for creation of the exchange is in a final review stage prior to submission for federal implementation funding. This exchange will provide a critical "network of networks" designed to exchange health data that can improve the care provided to all citizens.

The information technology community at the state level, from the guiding legislative committees to the executive branch Information Technology Directors Council to the practitioners, has realized an increased level of collaboration and transparency over the past few years. We have all openly shared technology plans and project statuses, we have jointly analyzed financial statements and created new IT policies, and we have shared the responsibility to create standards and provide independent verification and validation (IV&V) to all high-profile IT projects. The commitment to working as a team has been impressive and needs to continue to assure that the state uses information technology monies as wisely as possible. Continuing to pursue important projects beyond our border, such as the plans for reciprocal disaster recovery between Wisconsin and Minnesota, is also critical to our future. Information technology needs to be an essential element in Wisconsin state plans. We need to promote and support education in technology and we need to set examples of how the application of technology can contribute to the state economy and continue to make the state an ideal place to live.

— Oskar Anderson, State Chief Information Officer



EXECUTIVE SUMMARY

The 2010 Statewide Strategic Plan for Information Technology is a collaborative product of the State of Wisconsin Information Technology Directors Council (ITDC). This plan conveys the state agency IT community's intentions for what strategies and efforts it will emphasize during the upcoming biennium in order to improve the return on IT investment and maximize technology's benefits for Wisconsin residents. Statutorily required during even-numbered years, the statewide plan was drafted by the ITDC for the first time in 2008. The plan is published by the Department of Administration (DOA) and, like annual agency IT plans, made readily available to agencies and legislators for their consideration and feedback.

The 2010 plan is organized around three overall goals: Increase Collaboration; Enhance Service Delivery; and Expand Utilization of Technologies to Improve Efficiencies. To make the plan concrete and understandable, these three overall goals are further elaborated with strategies that provide additional specifics and examples for how IT services will be made more cost-effective.

The ITDC envisions this plan as a setting of strategic directions and alignments, some of which might take more than two years to realize fully all the associated benefits. But with more comprehensive and collaborative IT planning processes now in place, the ITDC believes it is in a better position to identify and communicate strategic objectives, assess the progress made, and ultimately maximize the benefits of rapidly changing technologies for state agency businesses and Wisconsin residents.

Goal: Increase Collaboration

Shared Decision-Making

Collaboration, shared information, and shared decision-making provide the foundation for IT governance in the State of Wisconsin. The State Chief Information Officer (CIO) continues to play a key role in ensuring that this collaboration takes place. The State CIO works extensively with the ITDC to get necessary agency input for DOA's responsibilities in providing cost-effective IT services and developing useful IT standards. The ITDC continues to guide the independent verification and validation (IV&V) program applied to high-profile IT projects.

The Joint Committee on Information Policy and Technology (JCIPT) and IT Management Board (ITMB) provide critical links between the Legislature and executive branch. The State CIO and other agency officials present to the JCIPT strategies and updates on IT planning and the status of high-profile IT projects. The ITMB, which includes the JCIPT co-chairs as well as state administrators and private-sector representation, advises DOA in the management of state IT assets and planning processes.

Three kinds of interagency groups are in place to promote the collaborative approach to IT service management and enhance communication between DOA's Division of Enterprise Technology (DET) and agency customers. Governance groups make decisions for governing the various aspects of how a service is provided. Customer advisory groups provide feedback and advice to DET managers regarding particular services and service-delivery issues. User groups give members ongoing opportunities for information and best-practices sharing. The statewide plan presents examples of all three kinds of groups.



Shared Resources and Services

The state agency IT community will continue to share resources and services and avoid duplicating efforts. This strategy leads to enhanced speed of delivery, cost reduction through shared infrastructure and skill sets, and, very often, better systems. The statewide plan presents numerous specific examples of how agencies are currently sharing resources, services and expertise.

Agencies also will emphasize shared projects. When a common business need or technology challenge is identified, several or many agencies will collaborate to determine how best to move forward. The results of a shared project might be that one agency emerges as a center of excellence for providing particular services, or that agencies adopt standards for utilizing certain technologies. All the outcomes of shared projects will be geared toward finding common solutions and achieving efficiencies through avoiding duplicative work.

Interagency Information and Process Sharing

The state agency IT community will continue to work with business partners to increase the availability of automated electronic information sharing among government organizations, with a view toward improving security and minimizing the volume of redundant information stored and managed by each agency. When appropriate, agencies will emphasize the customer relationship management (CRM) approach, which helps to form individualized relationships with customers in order to avoid multiple data entry and provide higher levels of service.

Digital content management systems also can facilitate the efficient sharing of information and business processes. The increased interest and use of more mature content management systems (e.g., SharePoint) is leading to enhanced collaboration.

Common IT Architecture

The state agency IT community is promoting a common IT architecture – a set of policies, principles, standards and common solutions – in order to guide the processes of planning, acquiring, building, modifying, interfacing and deploying IT resources. A common IT architecture allows staff to focus on a smaller set of technologies, allowing them to grow in depth and knowledge of specific technologies and products.

The interagency Technical Architecture Review Committee (TARC) supports DET as the review and approval authority for the technical architecture of systems and for modifications to the standard technologies DET uses to provide services. TARC reviews of technical architecture principles, proposals and documentation help to promote the standardization of technologies where appropriate.

The State CIO, in collaboration with the ITDC, intends to establish a set of enterprise standards by December 2010, along with a policy that sets the processes used to manage and maintain the standards.



Goal: Enhance Service Delivery

Internal and External Customer Online Services

State agencies will continue to incorporate enhancements to the State of Wisconsin Web portal (www.wisconsin.gov) to reflect current best practices and make the portal more citizen-centered. In addition, the ITDC's Identity Lifecycle Management project is providing standards and recommending next steps for establishing an authentication and authorization service, which would allow customers to reuse the same username and password identity to access various State of Wisconsin online services.

Business Intelligence

Agencies are actively using and expanding business intelligence (BI) technologies, which enable an organization to gain insight into critical operations through reporting applications and analysis tools. BI technologies provide historical, current and predictive views, and might include a variety of components such as tabular reports, spreadsheets, charts and dashboards. By integrating data from across the agency and delivering self-service reporting and analysis, IT organizations spend less time responding to requests and business users spend less time looking for information.

Security

The state agency IT community plays an ongoing, critical role in supporting the homeland security and disaster preparation efforts of federal, state and local authorities. State CIO Oskar Anderson serves on the Wisconsin Homeland Security Council. DET works with the state's Homeland Security Advisor and the Department of Military Affairs to develop and follow up on cyber preparedness goals, such as improving cyber security coordination, updating emergency support functions, and conducting cyber exercises. State agencies, in cooperation with governmental and private-sector groups, continue to develop and test plans to prepare for cyber terrorism attacks.

The Wisconsin Statewide Information Center (WSIC) serves as the primary intelligence-gathering entity, working with state, local, military and federal agencies. WSIC was formed after the U.S. Department of Homeland Security mandated establishment of intelligence fusion centers in every state. WSIC produces intelligence briefings for the Governor, top law-enforcement officials and partner agency heads.

Privacy Framework

Agencies continue to devise and implement policies for protecting personally identifiable information. Systems are being designed to avoid as much as possible the use of Social Security numbers and any other sensitive information.

Alignment of Service Delivery with Business Requirements

The state agency IT community seeks to maximize the business value of IT by aligning it with business needs and priorities. Business areas and IT organizations are working together closely to consider possibilities for business process re-engineering and identify areas that can leverage new technologies in order to be more efficient and cost-effective.

Agencies continue to refine their Continuity of Operations/Continuity of Government (COOP/COG) plans. Disaster recovery plans are part of COOP/COG planning and



include various strategies, including the use of alternate data sites, offsite storage of nightly backups, and data mirroring.

Planning for the next generation of network communication has begun, including work to create the functional requirements for a statewide network plan. The state also is pursuing several major broadband efforts, which are described in the plan, to help leverage and promote connectivity. State officials will continue to monitor closely federal and other states' efforts to expand fiber networks and provide more broadband capability, and will take advantage of opportunities for strategic partnerships.

Nationwide Initiatives

A significant amount of funding for the broadband expansion initiatives comes from the American Recovery and Reinvestment Act (ARRA) of 2009. The state agency IT community will provide support for these and other initiatives driven by federal government priorities. Wisconsin is ensuring that the use of ARRA funds is open, transparent and accountable through its Office of Recovery and Reinvestment Web site (<http://recovery.wi.gov>).

Goal: Expand Utilization of Technologies to Improve Efficiencies

Virtualization

Server virtualization, in which one physical server is converted into multiple virtual machines, has become a critical strategy in managing the state's server infrastructure. The state agency IT community continues to expand the use of virtual servers through day-to-day operations and through the efforts of a future advisory group.

DOA, with input from agency partners, is researching and implementing virtual storage along with data deduplication (a compression technology in which duplicate data is deleted) in order to maximize storage resources.

Virtual desktops allow a single server to act as several individual personal computers, providing efficiency opportunities. A planned Desktop Virtualization Advisory Team will provide recommendations on when and how to implement desktop virtualization.

Workspace virtualization offers staff the ability to work remotely with full clients, which reduces facilities and network expenses. Agencies have begun to explore this technology and will continue evaluating its viability.

Mobile Application Support

State agencies will focus on expanding and leveraging the capabilities provided with mobile devices, using these opportunities to rationalize applications and minimize the need for different technologies.



Social Networking Tools

State agencies will expand the use of social networking tools to provide additional opportunities for serving citizens. The plan cites examples of how social networking media (e.g., Facebook, Twitter and YouTube) are already being used. Agencies are currently investigating how the records created through social media should be archived and managed.

Technology Portfolio Rationalization

The state agency IT community will actively manage the technology portfolio, rationalizing the overall set of technologies and applications maintained. This approach will help to mitigate the risk of needing too broad a set of technical skills and will control associated support costs. By utilizing vendor shows and targeted training, agencies will proactively engage in the education of IT professionals to keep skills current.

Cloud Computing

Cloud computing is a general term for delivering hosted services over the Internet. These services make it possible to shift the burden of deploying and managing applications from in-house staff to vendors. Several agencies are already using some cloud-based technologies. As part of managing their portfolios, agencies are further investigating and evaluating cloud-based options, defining clear objectives and metrics that will allow for comparisons between cloud-based services and conventional service models. Because the use of cloud computing will increase the importance of effective service level agreements and contract management, agencies will emphasize building those skills.

Technology Direction

To provide direction for strategic IT planning, the state agency IT community is monitoring developments and producing white papers on a list of topics. These white papers will be geared toward identifying specific, actionable next steps for taking advantage of these technologies. The topics already identified include solid-state storage, new cooling technologies, innovation competitions, network convergence, and the transition to Internet Protocol Version 6.

Green IT

Agency IT organizations continue to implement practices that are environmentally friendly. High-density servers are being replaced with virtual servers, resulting in reductions in the need for power, space and air conditioning. Agencies also are adopting energy-saving practices for personal computers. Agencies use proper disposal and recycling methods for IT assets and donate usable computers to schools or the SWAP (Surplus with a Purpose) program.



INTRODUCTION

In October 2007, Department of Administration (DOA) Secretary Michael Morgan and State Chief Information Officer (CIO) Oskar Anderson presented to the Joint Legislative Audit Committee a new approach to information technology (IT) management. They described specific, actionable strategies for improving IT planning, establishing standards for project management, setting up mechanisms for project monitoring, and initiating collaborative organizational structures for IT management. All the proposed efforts were predicated on enhanced interagency collaboration, regular reporting to legislative bodies, and a focus on effective communication.

Since then, all of these proposals from October 2007 have been implemented, and, more importantly, have become part of the culture for managing IT in the State of Wisconsin. The approach of interagency collaboration and shared decision-making is no longer a noble experiment or the occasional happy surprise – instead, it is the expected way of doing business, and is the first option considered when IT challenges arise for multiple agencies.

The IT planning process itself is emblematic of the new approach adopted in 2007. Agencies have long been required to send annual IT plans to DOA, but starting with the 2008 plans, the Information Technology Directors Council (ITDC) appointed a subgroup to devise a template for the plan that would offer the most benefit to agencies compiling the information and to DOA in its analysis of plans and subsequent presentations to legislators and the Information Technology Management Board (ITMB). The 2009 and 2010 annual IT planning cycles have repeated this collaborative approach – ITDC members have worked together to craft any changes to the plan template to ensure the planning process is useful and relevant for agencies and governing bodies. Annual IT plans and their amendments are available to agencies and legislators through the ITMB Web site and are the basis for ongoing reporting by DOA to the ITMB.

Meanwhile, the ITDC in 2008 formed subgroups to pull together the elements of the biennial statewide IT plan. The statewide plan has long been statutorily required but it was drafted by the ITDC for the first time in 2008. The plan was then published by DOA and, like the annual agency IT plans, made readily available to agencies and legislators for their consideration and feedback. The 2010 statewide plan once again employed that collaborative process. In October 2009, the ITDC met to address which themes and strategies of the 2008 plan needed to be retained, which needed to be added, and which no longer were necessary for inclusion in the 2010 plan. This approach reflects the fact that IT planning is no longer an exercise separate from IT management, something to be dusted off every two years. Planning now involves ongoing activity and mechanisms for timely updates. The 2008 statewide plan simply needed to be adapted (e.g., to reflect agencies' intent to strategically integrate their efforts with initiatives resulting from the American Recovery and Reinvestment Act of 2009) – the 2010 plan did not need to be started from scratch. After the October 2009 ITDC session established an outline for the 2010 plan, the ITDC Executive Committee worked on drafting the plan and taking it back to the full ITDC for its input and ultimate approval.

Accordingly, the 2010 plan re-emphasizes the 2008 plan's guiding principles of improving the return on IT investment through increased productivity and maximizing technology's benefits for Wisconsin residents. The 2010 plan also is organized similarly to the 2008 plan: Three overall goals (Increase Collaboration; Enhance Service Delivery; and Expand Utilization of Technologies to Improve Efficiencies) are illustrated with strategies underneath each of those three overall goals. The strategies sections provide additional specifics and examples designed to show how



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all three overall goals are aimed toward making IT services more cost-effective, and to help make the plan concrete and understandable for readers both within and outside the state agency IT community.

Finally, it is important to recognize that a strategic plan such as this one, in the eyes of the ITDC, should constitute more than just a list of major projects or system implementations anticipated during the next two years. Projects can and will change – sometimes even within a two-year timeframe – based on federal initiatives, fiscal environments and industry movements. The ITDC envisions this plan as a setting of strategic directions and alignments. These should not change as frequently, but, likewise, they might often take more than two years to fully realize. Nevertheless, with the more comprehensive and collaborative IT planning processes in place since 2007, the ITDC believes it is in a better position to identify these strategic objectives, communicate them, assess the progress made, and ultimately achieve the benefits for state agency businesses and Wisconsin residents. The 2010 statewide plan is another piece of that ongoing, collaborative planning effort.

INCREASE COLLABORATION

Shared Decision-Making

Collaboration, shared information and shared decision-making – between agencies, DOA, the ITDC, the IT Management Board and legislative committees – provide the foundation for IT governance in the State of Wisconsin. By drawing on the expertise of all these groups, through consistent and well-understood communication and decision-making mechanisms, the state agency IT community has established reliable processes for IT planning and management.

The State CIO continues to play a key role in ensuring that this collaboration and information sharing takes place. The State CIO works extensively with the ITDC, in order to get the necessary agency input for DOA's responsibilities in providing cost-effective IT services and developing useful IT standards. The guiding principles, key strategies and specific initiatives described in this plan are all the result of ongoing collaborative efforts between the State CIO and the ITDC, and successful follow-through on the plan depends on that continuing partnership.

Similarly, the ITDC, particularly through the ITDC Executive Committee, continues to guide the independent verification and validation (IV&V) program applied to high-profile IT projects (defined as those costing \$1 million-plus or that are otherwise considered vital by an agency). In the three years that the IV&V program has been in place, the ITDC has assembled interagency teams to conduct all the on-site evaluations of high-profile projects.

DOA and the state agency IT community will continue to benefit from their reporting to, and consultations with, the Joint Committee on Information Policy and Technology (JCIPT) and the IT Management Board. The JCIPT was reactivated in 2008, and the State CIO and other agency officials have presented to the committee strategies and updates on IT planning and the status of high-profile projects. The IT Management Board, which includes the JCIPT co-chairs as well as state administrators and private-sector representation, also was formed in 2008 to take on its role in advising DOA in the management of state IT assets and planning processes. Both the JCIPT and IT Management Board provide critical links between the Legislature and executive branch, and DOA and its agency partners look forward to continuing their relationship with those governance groups for consistent feedback and oversight.

The theme of collaboration and information sharing extends to how DOA now regularly interacts with its agency customers. Three different kinds of groups are in place in order to facilitate those interactions: governance groups for services, customer advisory groups and user groups.

For example, the Email Governance Group is a decision-making governance team for the management and expansion of the email service used by most state agencies. The governance group addresses topics such as email archiving, encryption and site resiliency. The group represents the business needs of their agencies in the approval and prioritization of email service-related projects, and utilizes the email administrators group – a user group – for technical advice as needed. Other services, such as DET's SharePoint offering (which provides a collaboration platform), also have a governance group with similar responsibilities.

An example of a customer advisory group (CAG) is the Financial Services CAG, which focuses on providing agencies with a better understanding of DET's financial management and administration of the IT services DET provides. A primary emphasis for the group is on budget and rate development. The group operates on a consensus basis, and provides advice and feedback to the State CIO. The Monitoring CAG is an example of an interagency team that helps to develop standards and recommendations for server, device and application monitoring, reporting and alerting.

Advisory groups also are playing a key role in DOA's ongoing efforts to implement an industry standard IT Service Management framework – namely, ITIL (the Information Technology Infrastructure Library). The framework provides for quality end-to-end management of IT services to meet business needs. As part of the ITIL implementation, DOA is implementing process automation and application performance monitoring tools in parallel. The tools are being designed through input from cross-agency advisory groups. This collaborative implementation will enable agencies to use a shared solution for service desk and service management support.

User groups, meanwhile, provide members with ongoing opportunities for information and best-practices sharing. User groups include the State Web Administrators Group and the user groups for SharePoint and Contact Center Anywhere, a service for advanced routing of inbound voice calls to a call center.

The state agency IT community will continue to take advantage of governance groups, customer advisory groups and user groups in order to promote the collaborative approach to IT service management and enhance communication between DET, customers and business areas.

Promote Shared Resources and Services

A key, ongoing strategy for the state agency IT community is to continue seeking out opportunities to share resources and services and avoid duplicating efforts. This strategy leads to enhanced speed of delivery, cost reduction through shared infrastructure and skill sets, and, very often, better systems than can be achieved from a non-collaborative approach.

The Department of Workforce Development (DWD), for example, designed, developed and implemented the PTASystem along with time distribution functionality. Through the PTASystem, employees electronically enter work and leave times and also can easily indicate the tasks and efforts they're working on. This gives the organization valuable information on how work is being apportioned, and can help answer important questions about staff utilization and the balance between operational work and project work. DWD has built an understanding of how a time distribution system works and can benefit an organization. As a result, the agency has contracted to develop, implement and maintain a time distribution application for the Department of Agriculture, Trade and Consumer Protection (DATCP). By leveraging DWD's expertise and ability to produce a high-quality service at a competitive rate, DATCP can focus their IT resources on other mission-critical functions.



The Department of Health Services (DHS), meanwhile, successfully completed a project in early 2010 that installed a distance-learning and live-meeting package. The implementation was designed so that the technology could readily be used by additional state agencies. Several other agencies are evaluating the tool as a possible solution for delivering training to staff in various locations. Based on DHS's initial success and other agencies' interest, the product could become a candidate for enterprise pricing and licensing, thus giving agencies a cost-effective option for utilizing the technology if it fits their needs.

Additional examples of agency expertise being leveraged by other organizations include:

- Both the Department of Natural Resources (DNR) and the Department of Transportation (DOT) have significant experience and expertise in geographic information systems (GIS), and provide GIS-related data and some applications to other agencies.
- The Office of Justice Assistance (OJA) uses Egrants, a Web-based grants management system. The Department of Commerce was able to leverage work done at OJA in order to implement Egrants.
- The Department of Children and Families (DCF) and DWD are partnering to upgrade and clone DWD's financial suite of applications, which will result in cost sharing and code reuse.
- Commerce uses a digital marketing software and service that provides solutions for creating, delivering and managing online, permission-based communications to clients who use the Internet. Commerce's experience with this service provides a valuable resource for other agencies using it.
- DWD has expertise in technology used to manage the identities and relationships that make up network environments, which include users, computers, groups, printers and applications. DWD is a valuable resource for other agencies using that technology.
- DNR uses government-to-citizen SaaS (Software as a Service) communication solutions for email and wireless Web site content alerts, and can help provide those same solutions for other agencies.
- DHS has expertise with email archiving and can serve as a resource for other agencies.
- DNR has expertise with smartphones and online meeting technology and can serve as a resource regarding those tools.
- DWD runs and monitors batch jobs for particular DHS and DCF applications.
- DOA addresses the needs of smaller agencies through the annual production of the Divisional Business Applications Plan, which is submitted on March 1 along with all the agency annual IT plans, as well as the annual DET IT plan. In developing both plans, DOA/DET collaborates with smaller agencies to focus on specifically the challenges of small-agency IT resource access and possible solutions.

The state agency IT community will continue to pursue opportunities to take advantage of sharing resources, services and best practices. Shared projects will be a primary focus: When a common business need or technology challenge is identified, several or many agencies collaborate to determine how best to move forward in a cohesive, efficient manner. The eventual results of a shared project might be that one agency emerges as a center of excellence for providing particular services to other agencies, or that agencies adopt standards for utilizing certain technologies. Shared projects can produce many useful outcomes, but all are geared toward achieving efficiencies through finding common solutions and avoiding duplicative work.

Enhance Interagency Information and Process Sharing

There has been increased interest in automated electronic information sharing among government agencies, with a view toward improving security, reducing costs and offering better quality customer service, in addition to minimizing the volume of redundant information stored and managed by each agency. A successful implementation of automated information sharing results in the ability to process, share and utilize information, and operate in a manner that respects individuals' privacy rights and other legal rights.

A customer relationship management (CRM) approach is designed to help form individualized relationships with customers in order to avoid multiple data entry, provide higher levels of service, and improve customer satisfaction. Traditionally, customer information can exist in multiple, disparate systems. Often these systems are specific to certain personnel and departments, and creating a single view of a customer and that customer's interactions within an agency or between agencies is extremely difficult. Out-of-date, inaccurate or missing data in systems means customer and staff effort is duplicated. Agencies recognize the importance of the CRM approach and are refining applications to leverage CRM strategies and processes as appropriate opportunities arise.

Digital content management systems also can facilitate the efficient sharing of information and business processes. These systems provide preservation, organization and dissemination services for digital content, such as text, documents, multimedia files (audio or video files) and other formats. The increased interest and use of these more mature content management systems (e.g., SharePoint) have led to enhanced collaboration within and between organizations. Agencies are working to improve organizational effectiveness by utilizing the comprehensive content management and enterprise search capabilities available with these systems.

DOA is evaluating possible options for replacing the state's aging back-office systems used for managing tangible assets, financial resources, human resources, and materials.

Promote Common IT Architecture

Information technology architecture is a set of policies and principles, services and common solutions, and standards and guidelines, sometimes involving specific vendor products. The purpose of IT architecture is to guide the process of planning, acquiring, building, modifying, interfacing and deploying IT resources throughout state agencies. The IT architecture offers a means of stable evolution by identifying technologies that work together to satisfy the needs of agency users. By providing an enterprise level architecture for the acquisition and deployment of various types of technology, the following efficiencies can be realized:

- Consolidation of development tools and technologies;
- Improved reliability, modularity, extensibility, scalability and stability of existing and new systems;
- A simplified and more consistent approach for replacement of obsolete and outdated technologies;
- Integration mechanisms for legacy systems; and
- A repository of reusable software components that can be leveraged.



Staff also can focus on a smaller set of technologies, allowing them to grow in depth and knowledge of specific technologies and products.

An essential component of promoting a common IT architecture is a mechanism for reviewing and managing the technical architecture. The Technical Architecture Review Committee (TARC), consisting of staff from State of Wisconsin executive branch agencies, supports DET as the review and approval authority for the technical architecture of systems and for modifications to the standard technologies DET uses to provide services to customers. The scope of TARC activities includes:

- Evaluate technical architecture proposals and determine the proposal's compliance or reason for non-compliance with the DET Technical Reference Model (TRM) or agency technical standards. The TRM is a list of the technologies that DET supports; it identifies what technologies are used and in what technical classification (strategic, transitional, emerging or sunset) those technologies fall into.
- Approve or deny proposals to modify the technical architecture documented within the TRM.
- Review and update the technical architecture principles.
- Perform request for proposal (RFP) reviews as needed.
- Conduct independent verification and validation (IV&V) reviews for high-profile IT projects.
- Work with agency business and IT leadership to establish dates to sunset particular technologies.

TARC has been meeting regularly since March 2009 and provided reports for 18 reviews and 17 TRM modifications. The technical architecture documentation provides a reference so that government IT professionals have a consistent view of the IT infrastructure and the methods that DET uses to develop and deliver IT services. These resources help to promote the standardization of technologies across state agencies where appropriate.

TARC also worked to update the Enterprise Architecture principles during the summer of 2010. These principles provide high-level guidance for delivering cost-effective and efficient government services to citizens and businesses within Wisconsin.

In addition, the State CIO, in collaboration with the ITDC, intends to establish a set of enterprise standards – an enterprise technical reference model – by December 2010. A policy that sets the processes used to manage and maintain the standards also will be adopted by December 2010.

ENHANCE SERVICE DELIVERY

Internal and External Customer Online Services

State agencies understandably have to center attention on their specific business realms, focusing on key information critical to agency operations. A Web portal can show that information from diverse sources to citizens in a unified way. The portal provides a venue for separate state agency activities to be presented as a single business, using a common Web interface. Agencies will continue to incorporate enhancements to the State of Wisconsin Web portal (www.wisconsin.gov) designed to reflect current best practices and make the portal more citizen-centered.

Another key step for expanding online services is establishing an enterprise authentication and authorization service that can be used by any agency. This will enable a standard look and feel to the public and allow customers to reuse the same username and password identity to access various State of Wisconsin online services. Agencies, meanwhile, won't have to duplicate the work of producing and maintaining this service, allowing them to concentrate on core business systems. The currently active Identity Lifecycle Management (ILM) project was established by the ITDC to identify a strategic direction for internal- and external-facing identity lifecycle management and directory services within state agencies. ILM includes the processes and technology for the creation and deletion of user accounts and the ongoing management of those accounts. This project is gathering the requirements for these services from both DET and executive branch agencies, and evaluating the technologies currently available to provide identity lifecycle management and directory services for user identities. The project created sub-groups that are working on requirements and design. Once these requirements and design are finalized through the ILM project, the ITDC will take those results and determine the next steps.

Business Intelligence

Business intelligence (BI) is a broad category of computer software solutions that enable an organization to gain insight into its critical operations through reporting applications and analysis tools. BI technologies provide historical, current and predictive views, often with the aim of supporting better decision-making. BI applications might include a variety of components such as tabular reports, spreadsheets, charts and dashboards. Traditional BI systems were delivered by way of host terminals or paper reports; now the typical deployment of a BI application is over the Web through Internet or intranet connections.

By integrating data from across the agency and delivering self-service reporting and analysis, IT spends less time responding to requests and business users spend less time looking for information. Agencies are actively using and expanding BI technologies, and will continue to apply BI to enhance the ability to provide timely information access.

Security

The state agency IT community plays an ongoing, critical role in supporting the homeland security and disaster preparation efforts of federal, state and local authorities. As the Wisconsin Homeland Security Council pointed out in its 2009 report to Governor Doyle, the threat of cyber terrorism continues. In September 2008, in response to growing cyber threats, State CIO Oskar Anderson was appointed to the Wisconsin Homeland Security Council. This appointment marked the first time the Wisconsin CIO was given broader homeland security policy responsibilities.

DET has worked with the state's Homeland Security Advisor and the Department of Military Affairs to develop and follow up on cyber preparedness goals, including:

- Recommendations on updating state laws to better facilitate preparedness and responses;
- Improving cyber security coordination;
- Updating emergency support functions; and
- Developing and conducting cyber exercises.

State agencies, in cooperation with governmental and private-sector groups, continue to develop and test plans to prepare for cyber terrorism attacks. Agencies mitigate the risk of attacks by promoting security awareness, utilizing intrusion detection systems, and employing endpoint security strategies, in which security software is distributed to end-user devices but centrally managed. The DET Security Section examines log files and alerts from state Internet communications to detect actions that attempt to compromise the confidentiality, integrity or availability of state resources. Agency security officers are notified for further action or investigation. Agencies test and apply security patches as soon as possible after the patches are released. Spam and malicious email are filtered.

The DET Security Section will continue to provide outreach and education to agencies, particularly to IT desktop support staff and IT security staff. These collaborative efforts include communication regarding general security awareness, threats, security-related statistics, and strategies for helping to prevent attacks. When requested, DET Security can scan agency systems to identify, quantify and prioritize the vulnerabilities in a system, and also can scan agency applications and review input code for potential vulnerabilities. DET Security can examine disk storage to recover data in the event of a hardware or software failure, and can analyze a computer system after a break-in to determine how the attacker gained access and what the attacker did.

The Wisconsin Statewide Information Center (WSIC) serves as the primary intelligence-gathering entity, working with state, local, military and federal agencies. WSIC was formed after the U.S. Department of Homeland Security mandated establishment of intelligence fusion centers in every state. WSIC offers sophisticated intelligence-gathering efforts statewide, and produces intelligence briefings for the Governor, top law-enforcement officials and partner agency heads. WSIC also serves as the Wisconsin liaison for INTERPOL, which promotes mutual assistance among international law enforcement authorities.

Privacy Framework

The state agency IT community recognizes that protecting the privacy of citizens' personally identifiable information requires extensive collaboration and a consistent approach. Effective safeguarding involves employing a continuously evolving framework of activities, tools and devices dedicated to preventing data loss or exposure of sensitive data. Measures that are useful at one time might not be nearly as effective even just a few months later, which agencies understand and build into their privacy protection efforts.

Agencies are continuing to devise and implement policies for protecting personally identifiable information from loss, theft and misuse. Agency systems are being designed to avoid as much as possible the use of Social Security numbers and any other personally identifiable and sensitive information.

Alignment of Service Delivery with Business Requirements

An ongoing, essential objective of the state agency IT community is to maximize the business value of IT by aligning it with business needs and priorities. With a significant number of business processes now enabled by applications, their continued smooth operation is vital to sustain the business and reduce costs and risks. Amid tight budgets and staffing challenges, maintaining effective services for citizens inherently means business and IT must always be working together to incorporate improvements in their processes and resource management.

This collaborative, adaptable approach is evident in the way agencies are conducting replacement of their legacy systems. The business areas and IT organizations work together closely to consider possibilities for business process re-engineering and identify areas that can leverage new technologies in order to be more efficient and cost-effective.

As agencies re-engineer processes and evaluate systems, it is vital to plan for the sustainability of critical systems in the event of a disaster or other possible disruptions. Agencies continue to refine their Continuity of Operations/Continuity of Government (COOP/COG) plans. IT has a key role in continuity planning, because for many business areas there are no longer manual processes to fall back on – applications and data have to be available. Disaster recovery plans are part of COOP/COG planning, and they include a wide variety of strategies, including the use of alternate data sites and offsite storage of nightly backups.

Data mirroring is a key strategy for ensuring data availability. Data mirroring copies data from one location to another storage device in real time, providing an exact copy of the data on the production and backup devices. Data mirroring is useful because it:

- Increases data protection;
- Expands availability of a database – in the event of a disaster the backup quickly brings the standby copy into production; and
- Improves the availability of the production database during upgrades.

Agencies are leveraging data mirroring technology to maximize disaster recovery capabilities.

Connectivity technology standards also are essential for communication and for providing satisfactory infrastructure for agency business activities. Planning for the next generation of network communication has begun, including work to create the functional requirements for a statewide network plan. The functional requirements will define what the network is supposed to accomplish. This plan will consider such technologies as Voice over Internet Protocol (VoIP) and unified communications. VoIP involves technology that allows telephone calls to be made over computer networks such as the Internet. Unified communications allow users to access voice, email, fax and other mixed media from a single mailbox independent of a particular access device.

The State of Wisconsin also is pursuing broadband efforts to help leverage and promote connectivity:

- The Public Service Commission (PSC) is undertaking a broadband-mapping project to identify and map all the existing and proposed broadband in the state.
- A proposal for the BadgerNet Converged Network (BCN) would extend the network to 467 schools and libraries, replacing copper with fiber. This would effectively bring fiber to all 72 Wisconsin counties.
- The Department of Health Services (DHS) is examining where fiber is in the state for upcoming health information exchange projects, which will focus on getting different health care organizations and professionals connected.
- Numerous other applications for American Recovery and Reinvestment Act of 2009 (ARRA) funding are proceeding in order to expand broadband availability throughout Wisconsin.

State officials will continue to monitor closely federal and other states' efforts to expand fiber networks and provide more broadband capability, and will take advantage of opportunities for strategic partnerships.

Nationwide Initiatives

The State of Wisconsin broadband initiatives cited above are part of efforts going on throughout the United States to expand broadband access and adoption, increase jobs, generate investments in technology and infrastructure, and provide long-term economic benefits. A significant amount of funding for these nationwide efforts comes from ARRA. The Wisconsin Health Information Exchange (WHIE), which will provide a system where diverse stakeholders can securely exchange health information between authorized users, also is funded by ARRA.

The state agency IT community will provide support for these and other initiatives driven by federal government priorities. Wisconsin is ensuring that the use of ARRA funds is open, transparent and accountable through its Office of Recovery and Reinvestment Web site (<http://recovery.wi.gov>). The site includes a "money tracker," with information on every program and project in Wisconsin where ARRA funds are used, along with the number of jobs created or saved. The site also provides essential information on funding opportunities and processes, in order to streamline application efforts.

EXPAND UTILIZATION OF TECHNOLOGIES TO IMPROVE EFFICIENCIES

Virtualization

Most physical servers use only a small fraction of their overall processing capabilities. By using virtualization software, a server administrator can convert one physical server into multiple virtual machines. Because each virtual server is independent in relation to the other virtual servers, IT staff can run software without worrying about affecting other applications, providing a resilient and efficient application environment. Server virtualization has become a critical strategy in managing the state's server infrastructure. It is now the enterprise standard (with exceptions for application limitations and licensing restrictions).

The state agency IT community continues to expand the use of virtual servers through day-to-day operations and also plans to form an advisory group for leveraging this technology to the greatest extent possible.

In addition to server virtualization, virtual storage is becoming a viable solution to storage capacity issues. Virtual storage allows storage to be allocated as needed rather than in advance. It helps the storage administrator perform the tasks of backup, archiving and recovery more easily and in less time, by disguising the actual complexity of the storage area network (SAN). SANs help to increase storage capacity because multiple servers consolidate their private storage space using a high-speed network.

The need to optimize storage capacities is not new – it's just more pressing than ever as data volume grows exponentially. For example, when one email attachment is sent to 20 people, the exact same document could be saved and stored in up to 20 different locations. Storage virtualization trends such as data deduplication can significantly decrease the cost of storage devices and media. Data deduplication reduces the amount of data that must be sent across the wide area network for remote backups, replication and disaster recovery, thus reducing network traffic and congestion. Deduplication uses a compression strategy in which duplicate data is deleted, leaving only one copy of the data to be stored, and all references point to the single stored copy. In addition, more efficient use of disk space also allows for longer disk retention periods.

DOA, with input from agency partners, will research and implement virtual storage along with data deduplication technology in order to maximize storage resources.

Virtualization also can be applied to the desktop. Virtual desktops allow a single server to act as several individual personal computers. The desktop virtualization market is expected to grow significantly in the next few years, providing more options. Virtualization decouples desktop environments from the underlying PC hardware. In addition to standard software, custom software can be available from any virtual machine connected to the server, releasing the user from using a specific computer. Files are stored on the server instead of a local hard drive, with the same, or even higher, level of security.

Desktop operating systems, applications and data can now be managed independently of each other for extreme business agility. This provides opportunities for multiple efficiencies. For example, a software upgrade to traditional desktops requires visiting each computer (either physically or through remote software). With virtual desktops, the

upgrade happens in one place: on the server. Desktop management is centralized and simplified while costs are reduced. To capitalize on these efficiencies, a Desktop Virtualization Advisory Team will be formed to provide recommendations on when and how to implement desktop virtualization.

Through workspace virtualization, employees can take their workspace with them. Workspace virtualization involves using applications that run directly on the client computer hardware, in contrast to desktop virtualization, where applications run on a remote computer somewhere over a network or the Internet. Since virtual workspaces run at high performance with little overhead, the virtual end-user experience is similar to the host computer's performance. Workspace virtualization provides for significant flexibility and the ability to work remotely with full clients, while reducing facilities and network expenses. Agencies have begun to explore this technology and will continue evaluating its viability.

Mobile Application Support

Mobile application support will focus on expanding and leveraging the capabilities provided with mobile devices, using opportunities to rationalize applications to minimize the need for numerous different technologies. Agencies have already realized the initial benefits of providing business applications on mobile devices, such as those used by Commerce's boiler inspectors and DOT's State Patrol. With the maturity of mobile devices, there will be many more opportunities to take advantage of their use.

Social Networking Tools

Some state agencies have found that social networking tools provide additional, effective opportunities for serving citizens. Most social network services are Internet-based, and provide means for users who share interests and activities to interact through Web pages, email, instant messaging, videos and forums. Agencies are currently investigating how the records created through social media should be archived and managed.

State agencies are already using social networking media, for example:

- DNR uses Twitter (<http://twitter.com/Fishwisconsin>) to provide short, timely messages from DNR fisheries.
- DOR has placed videos on YouTube that provide information on a variety of individual tax topics and business-related activities.
- The Office of the State Public Defender uses various social media venues (blogs, Twitter, Facebook, YouTube) to enhance communication and training opportunities with both staff and other criminal justice stakeholders.
- The Educational Communications Board is on Facebook to increase awareness of their services and advance the agency's educational mission.

Technology Portfolio Rationalization

Technology portfolio rationalization is a structured process to assess current IT portfolios, identify the value-generating and underperforming technologies, and prioritize IT investment. It provides an opportunity to flag and consolidate redundant applications. In addition, it allows business areas to assess resources and focus on critical functions.

The state agency IT community will actively manage the technology portfolio, rationalizing the overall set of technologies and applications maintained. This approach will help to mitigate the risk of needing too broad a set of technical skills and will control the associated support costs. For example, state agencies are currently planning how to migrate most efficiently to the Windows 7 operating system.

As agencies take advantage of adaptations in hardware and software platforms, they must also work to make sure that staff skills are developed accordingly. By utilizing vendor shows and targeted training, agencies will proactively engage in the education of IT professionals to keep skills current in a rapidly evolving environment.

Cloud Computing

Cloud computing is a general term for delivering hosted services over the Internet. These services are broadly divided into three categories: Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). Cloud computing permits organizations to quickly deploy Web-based services on a pay-as-you-go basis without the difficulties, uncertainties, added costs and risks associated with traditional, on-premise hardware and software. SaaS is a software distribution model in which applications are hosted by a vendor or service provider and made available to customers, typically using the Internet.

Some potential benefits of cloud computing include resource sharing and built-in elasticity. These features allow for lower barriers to entry and quick scalability and growth. The maturation of on-demand services is making them attractive, allowing IT to shift the burden of deploying and managing applications from in-house staff to the software vendors themselves. SaaS requires vendors to invest in service delivery infrastructure and puts the burden on them to ensure the success of the software, from availability to optimization.

As part of managing their portfolios, agencies are investigating and evaluating the use of SaaS or cloud-based options. The evaluations also are being approached on an enterprise level, including discussion and analysis by the Technical Architecture Review Committee. Some agencies have already utilized SaaS technologies for government-to-citizen communication solutions. DNR and several other agencies are utilizing a digital subscription management SaaS to provide a fully automated, on-demand public communication system.

Agencies are considering the viability of public, private and hybrid cloud options. A public cloud is where a service provider makes resources, such as applications and storage, available to the general public over the Internet. Public cloud services may be free or offered on a pay-per-usage model. A private cloud is controlled and operated by the organization using it. This option overcomes many risks such as governance and security,

but at the potential loss of economies of scale. Hybrid clouds have both a public and private cloud component.

Fundamentally, the migration of IT to a cloud architecture is less a technology decision than a business decision around how the IT organization will deliver services. Agencies are in the process of defining clear objectives and metrics that allow for comparisons between cloud-based services and conventional service models, and educating business partners regarding cloud options. Because the use of cloud computing will increase the importance of effective service level agreements and contract management, agencies will emphasize developing skills in those areas.

Technology Direction

To provide direction for agencies' strategic IT planning, the state agency IT community will maintain a list of topics for which it will monitor developments and produce white papers. These white papers will be geared toward identifying specific, actionable next steps for taking advantage of these technologies. Examples of topics already identified for white papers include:

SOLID-STATE STORAGE

The main advantage of solid-state storage is that it contains no mechanical parts. The storage is achieved electronically. As a result, data transfer to and from solid-state storage media takes place at a much higher speed than is possible with electromechanical disk drives. The absence of moving parts could translate into longer operating life, provided the devices are reasonably cared for and not exposed to electrostatic discharge. Examples include solid-state hard drives, flash memory and camera SD (secure digital) cards.

NEW COOLING TECHNOLOGIES

In recent years, there have been significant advances in computer cooling technologies. With the use of faster and smaller computer components, which run hotter, the need to improve cooling capabilities has become more urgent. Fan-based cooling is being replaced by advanced liquid cooling technology and thermoelectric cooling. These new technologies will be investigated to determine their potential for state agencies.

INNOVATION COMPETITIONS

Innovation competitions allow citizens to convert data into shared applications that serve the public and help governments save money. Software developers get access to data sets in order to try to construct innovative tools the public can use online, with prizes going to the winners. Washington D.C. and cities such as New York have used innovation competitions to produce popular applications that generate economic impact. This approach warrants further examination to determine if innovation competitions have a possible role for state organizations.

NETWORK CONVERGENCE

As the needs for connectivity have evolved, agencies deployed discrete technologies in silos to address distinct networking requirements. During the next several years, agencies will be replacing network equipment, providing an opportunity to leverage

newer technologies and remove the silos. As part of the replacement process, Fiber Channel over Ethernet (FCoE) network convergence technology will be evaluated to reduce the number of discrete technologies. FCoE is designed to let native fiber channel and standard network traffic run alongside each other over an Ethernet infrastructure.

IPV6

Internet Protocol Version 6 (IPv6) was established to increase the Internet global address space to accommodate rapidly increasing numbers of users and applications that require unique global IP addresses. IPv6 has a vastly larger address space than IPv4, the version still in dominant use. State agencies are evaluating how to move from IPv4 to IPv6.

Continue Efforts to Green IT

“Green IT” refers to the idea that IT organizations implement practices that are environmentally friendly. Organizations are increasing their emphasis on green IT because of rising energy costs, research on global warming, and legislation regarding toxic material disposal and greenhouse gases.

Shifting to more efficient products can allow for a greener energy footprint. Agencies are replacing high-density servers with virtual servers, resulting in reduced need for power, space and air conditioning.

Agencies also are encouraging adoption of energy-saving computer settings, such as:

- Configuring the monitor to turn off after 15 minutes of inactivity;
- For a laptop on battery power, having the monitor shut off after 15 minutes; and
- After 6 p.m., setting a desktop computer to go into a standby power state.

Other measures being considered by agencies include:

- Having the hard drive turn off after 30 minutes of inactivity;
- Setting the desktop computer or laptop to go into a standby or sleep mode after a specified period of time (the U.S. Environmental Protection Agency recommends setting computers to enter system standby or hibernation after 30 to 60 minutes of inactivity);
- Shutting down the computer, monitor and printer or placing them in a standby mode when staff leave the office for more than two hours; and
- Informing staff not to use screensavers, as they continue to use the monitor at full power and do not conserve energy.

There is a misconception that computers and monitors purchased with the Energy Star logo are already energy efficient. They have built-in energy conservation features, but computers cannot take full advantage of these energy-saving mechanisms until the power management features are enabled and configured. State agencies are utilizing this functionality to the extent possible.

Agencies are using proper disposal and recycling practices for IT assets, and donate usable computers to schools or the SWAP (Surplus with a Purpose) program.



CONCLUSION

The IT Directors Council believes the overall goals cited above, along with the accompanying strategies, provide the state agency IT community with an actionable yet sufficiently flexible framework for improving the return on IT investment and maximizing technology's benefits for Wisconsin residents. Most importantly, ITDC members believe effective and reliable partnerships are now firmly in place for following through on, and refining as needed, this collaborative plan. The ITDC looks forward to working with state agency colleagues, as well as governance groups such as the Joint Committee on Information Policy and Technology and the IT Management Board, to pursue these goals and position IT resources to meet business needs amid challenging and changing environments.

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