



Title: Michigan Bridges
Category: Improving State Operations
State: Michigan

Contact Information:

Jim Hogan
Information Officer
Michigan Department of Technology, Management and Budget
235 South Grand Ave
Lansing, Mi 48933
517-373-6702
hoganj@michigan.gov

B. Executive Summary – Improving state operations: Bridges

Business Problem

Michigan's welfare delivery system (food stamps, cash, day care, energy assistance and medical) was spread across several expensive mainframe-based systems that separately handled eligibility determination, caseload tracking, payment disbursement and reporting. The legacy process required workers use three separate data systems to complete the end-to-end application. Lack of data sharing between systems resulted in duplicate client reporting to authorize other assistance payments (Medicaid etc.). These technology limitations put additional demands on a workforce that was shrinking because Michigan's dire revenue shortage prevented the hiring of additional staff. Michigan recognized that a legacy replacement strategy was needed to help improve worker efficiency and reduce error rates in eligibility determination. In 2006, Michigan began the nation's largest legacy welfare system replacement project with the design and implementation of an integrated eligibility and payment system, called "Bridges".

Significance of project

Phased statewide roll-out of Bridges began in March 2009 and concluded in August 2009 with all Department of Human Services (DHS) offices in the 83 counties successfully transitioning to Bridges. This fully integrated system has improved worker productivity, efficiency and accuracy. In 2010 approximately 2.2 million residents (22% of state population) is being served by Bridges. Current caseload ratios have risen from 500:1 (2006) to 700:1 (2009). Time reductions and efficiencies in Bridges design allow workers to assume additional caseloads - significant given our inability to hire new workers with continuing declines in state revenues. Our food stamp standard of promptness has improved to 93% in May 2010. Case worker adoption and acceptance continues to grow by using a web-based graphical user interface coupled with far fewer screens to navigate. We have built online policy manuals and "wizards" into the design to assist workers with policy questions. This is supplemented with a series of computer-based training modules.

From a technical operations stand point, our former mainframe based systems would never have kept pace with current caseloads. The former systems, engineered on un-scalable hardware platforms would have collapsed under this increased demand. Bridges J2EE scalable architecture has improved state operations by ensuring no system outages result in clients not receiving timely benefit payments. The underlying client master index database is designed so that subsequent systems, serving similar populations can be leveraged. This architecture will reduce development costs by sharing data across systems. The system was engineered with a disaster recovery capability, allowing for 30% intake resumption in case of total system failure. As revenues become available, this capacity will be increased.

Large scale IT development projects in the future will benefit from lessons learned from Bridges. Our use of a cross agency project management office and disciplined use of release planning has ensured that all system upgrades are done on time, on schedule and with minimal risk. This model has been shared with other states, most recently Montana and New Mexico.

C. Description of the business problem and solution, including length of time.

Michigan's ability to deliver human services benefits to citizens was hampered by the use of multiple aged IT systems. Lack of adequate technology was exasperated with steadily increasing caseloads. The inadequacies of the legacy systems - 3 separate systems with vastly different database technologies, application languages, and hardware platforms led to a slow intake process and limited workers ability to take on additional cases. Users needed to learn and navigate three systems with different menu structures and user interfaces. One system to determine eligibility, one to determine benefits and one for caseload management. Changes in one system impacted how workers needed to use the companion systems. Technology staffs spent weeks programming policy changes and new federal rules into these systems. Further propelling the need for change was increased error rates. The inadequacies of the legacy systems coupled with complex policies and procedures resulted in:

- Medicaid error rate increased from 2.57% ('02) to 4.23% ('03).
- \$24 Million in Food Assistance Program (FAP) penalties assessed in FY02; \$89 Million have been assessed through FY03.
- \$1.8 million in 2002 audit exceptions due to lack of documentation.

Michigan's core mission of protecting vulnerable families from economic hardship was seriously compromised by technology limitations. In 2005, The Governor's Office appropriated funding and directed State leaders from the Departments of Human Services, Community Health and Information Technology to embark on an aggressive 48 month strategy to replace all systems used in eligibility determination and issuance of benefits. Our aggressive schedule was in recognition of three core drivers: (1) Caseworker relief, (2) Reduce federal penalties due to unacceptable error rates, (3) eliminate the support costs of legacy systems. Our project began in 2006 and is titled "Bridges".

Michigan's approach began with the establishment of an independent project management office (PMO). Contractor and state staffs reported to the PMO. The PMO received direction from an executive steering committee comprised of the directors of Human Services, Community Health and Information Technology. This steering committee was the arbitrators of last resort for issue escalation. Every team member had a clear understanding of their role in the project. To ensure system design met the needs of line workers, staffs from over 100 local offices were detailed on a revolving basis to Lansing Michigan to assist in requirements design, unit and system testing. Bridges was deployed over a six month period on a regional basis. Deployments started with counties that had lower caseloads to test production readiness. Errors and data issues were resolved in a controlled release planning cycle. As subsequent counties were brought online, these errors were minimized. One of the key factors to meeting timelines was a sustained message from Executive leadership that the following conditions needed to be met in order to deploy Bridges according to schedule:

- No new legislative mandates impacting project scope,
- No new policies or policy changes,
- 100% commitment of agency resources for requirements and testing.

The final (and most critical) element to success was our change management process. During the duration of the project, communication updates and site visits by leadership was on-going. External stakeholders, advocacy groups, providers and legislative staffs received frequent briefings. Each office brought online received intensive training before-hand. The training was supplemented with web-based media training modules. An Intranet based WIKI was developed to encourage user input and knowledge transfer between workers. Dedicated training and help staffs were stationed for weeks at each office to respond to end-user issues. Bridges deployment began in March 2009 and was fully operational in August 2009. The legacy systems were decommissioned in September 2009. Bridges marries an innovative business design with a robust scalable technology platform that allows application changes and tuning to be completed at a much faster pace than our prior legacy systems. Major design elements include:

The business design streamlines and fully automates the eligibility determination and benefit issuance process for Cash assistance, Medical assistance, Food assistance, Child care, State Emergency Relief, and Low Income Home Energy Assistance Program. Bridges includes two self-service channels, web-based application for food stamps and energy assistance and interactive voice response (IVR) to check on benefit status.

The technical solution is an n-Tier Web-based application using an integrated eligibility framework solution. This design minimizes the impact on system maintenance cost, and it allows for the separation of specific application responsibilities across several logical and physical tiers. This architecture is comprehensive, in that it supports the full complement of Bridges functions in a unified and tightly-integrated environment, built using these proven technologies and tools:

Flexible, Open J2EE Based Architecture

- Presentation Tier based on open standards (JSP, JavaScript, XML)
- Separation of business logic from presentation tier simplifies development and maintenance
- Web Services are loosely coupled and extensible
- Framework tools allow the rapid development and deployment of new screens and functionality

Scalable and Proven Physical Architecture:

- Transparent access over multiple servers increases throughput due to software load balancing
- Real-time streaming to Disaster Recovery site
- Real-time, automated monitoring of production environments
- Over 4 million daily online transactions with sub-second average response times

D. Significance: How did the project improve the operation of government?

The development of Bridges occurred during the state's deteriorating economic conditions, record unemployment and state budget deficits. These factors led to reduced staff both centrally and in local offices. Less staff, using aging legacy systems, combined with an increase in clients hampered the State's ability to meet the needs of the citizens. The timely rollout of Bridges in 2009 has put Michigan in a position to

handle the increasing number of assistance applications with fewer staffs. Bridges serves 83 counties, 126 field offices, approximately 10,000 end users, and a caseload of 1.25 million comprising 2.5 million recipients. Operational efficiencies have accrued to multiple stakeholders, including:

Worker improvement

- Bridges automates many administrative functions caseworkers were previously required to carry-out such as sending client notices or mailing forms and re-determination material.
- Faster eligibility intake and client administration provides workload relief enabling workers to focus on intervention and prevention services.
- Improved worker accuracy via integrated eligibility rules engine. Prior to this rules engine, workers had to interpret policy and apply policy to each case.
- Eligibility policy changes engineered into rules engine. No researching policy manuals and selective interpretation.
- The learning curve for new workers (hired to replace retiring workers) is significantly reduced. Fewer screens and a web-based interface has shortened the number of days needed for dedicated training.
- Self-service channels reduces the number of phone calls a caseworker receives or must follow-up on.

Improved services to clients

- Eligibility determination is completed in one interview. Client verification processes reduce subsequent client contact.
- Benefit determination concluded faster resulting in benefit issuance faster.
- Income eligibility determined for other assistance (health care and supplemental food via WIC).
- Food stamp eligibility status used to automatically pre-qualify families for the free and reduced lunch program (direct certification).
- Self-service channel (web, IVR) lets clients check on benefit status and make demographic changes without visiting an office or waiting in a phone queue.

Improved data sharing

- Legislative / policy changes are made in our rules engine. Prior to Bridges, changes were made in multiple systems.
- Oracle database master client index can be shared with other systems serving similar populations. This will help reduce development costs as Michigan prepares to modernize our state automated child welfare information system (SACWIS) in 2010.
- Clients benefit look-up tables easily accessible by other technologies. This allows for predictable expansion of self-service and IVR.
- Standardized set of web services allow for a single point of interaction with the State allowing federal and local agencies to securely get information from Bridges. (e.g. real-time interface between Bridges and Social Security Administration to verify Social Security Numbers).

- Web services in place to securely share client information with utility companies for payment verification for energy assistance.

Bridges has significantly improved governmental operations and sent a clear message to stakeholders that protecting families from economic hardship via accurate and timely issuance of benefits is a core value of government. This same core value is shared by our peer states. To that end, the Bridges code base, documentation and lessons learned is available to other states to leverage. Michigan has been approached by three states since project launch for this information.

E. Benefit of the Project

The State of Michigan has invested nearly \$200 million and five years of intensive effort in the development of Bridges. Our system fully integrates the eligibility determination and benefit calculation for all assistance programs administered by the Michigan Department of Human Services. This has provided on-going return on our investment, with notable measures including:

Worker efficiency - Caseworkers can perform a number of different operations when using Bridges, including opening new cases, updating cases, doing re-determinations or conducting state emergency relief (SER"s). Depending on what the casework is doing, the average caseworker can complete 20+ cases / actions a day.

Worker output – Eligibility staffing levels have remained constant: 3,008 in 2006 and 3,037 in 2009. Caseload ratios have increased by 200 cases per worker in this time period. DHS is serving more people than ever before. During FY 09 the number of clients served has increased approximately 12% to now include more than 2.2 million residents (22% of state population). Food assistance issuance increased by 39% during FY 09 with monthly payments over \$205 million. This has happened with no new hires.

Reduced error rate and companion sanctions - Michigan was sanctioned \$89 million thru 2003 because of food stamp payment errors. In 2007, Michigan was assed \$3.5 million in penalties. Michigan will avoid federal sanctions if we can maintain error rates below 105% of the national average. Bridges takes the demographic info and calculates benefits according to policy in the rules tables. Michigan has not been sanctioned since Bridges went into operation.

Technology efficiencies and cost reductions - The retirement of three legacy applications (\$9 million in annual operating costs) has allowed funding to be re-directed to Bridges support. There has been a noted reduction in application development time and a better process for tracking application changes. Michigan uses the Clear Quest product to manage all work requests, testing and release planning. This disciplined approach has resulted in no outages because of untested code being promoted to production. This process will be repeated for subsequent deployments.

Technology expansion – Our open system design allows Bridges to interface with other state systems. Michigan is completing direct interfaces into our child support system to

help with custodial earnings tracking. Likewise, our master client index database was developed so other state systems serving similar populations could access the data and not replicate the data.

Increasing federal earnings – Our Bridges application was quickly modified to take advantage of increased federal funding for energy assistance. The \$1 Low Income Heat and Energy Assistance Program (LIHEAP) allowed the state to provide clients with additional food assistance benefits by issuing clients \$1 to use towards their annual energy expenses. Without field staff having to take any action; Bridges issued this payment to nearly 800,000 households, recalculated food assistance benefits and sent clients a notice explaining this change. This automation allows an additional \$16 million in additional direct food dollars into Michigan communities each month, or \$192 million on an annual basis.

Michigan is proud of how a major technology project has been recognized as a significant contributor to improving state operations. Many facets of the Bridges project are instructional as state leaders contemplate how to implement priority initiatives. Several of NASCIO's 2010 state CIO priorities have been addressed with this project including:

- Budget and cost control,
- Shared services and governance,
- Virtualization
- Legacy application modernization,
- Social media and networking with the use of WIKI technology to solicit feedback from end-users.

The delivery of human services as a core function of government has significantly improved since the adoption of Bridges. Michigan has adopted technology as a solution to increased citizen demand in lieu of the cost prohibitive model of increasing staffing levels. Michigan stands ready to share our technology and change management "lessons learned" with our peer states.