



The Computerworld Honors Program

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Final Copy of Case Study

YEAR:
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STATUS:
Laureate

Organization:
Michigan Department of Technology, Management & Budget

Organization URL:
www.michigan.gov

Project Name:
Statewide Enterprise Data Warehouse Service

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

The Michigan Department of Technology, Management & Budget (DTMB) impacts every area of government in the state of Michigan. Behind the scenes, a broad spectrum of responsibility, ranging from procurement and facilities management to managing technology services, improves how Michigan interacts with citizens and businesses on a daily basis. Michigan's more than two dozen departments and agencies collect a tremendous amount of information for internal use, and for state and federal reporting purposes. Combined with data from the U.S. Census, payment systems and other state agencies, there's a potential gold mine of knowledge provided administrators have easy access to it. Michigan's various agencies had become data rich, but had limited ability to transform this data into usable information. The project would be used most heavily by the Department of Human Services and the Department of Community Health to provide accurate delivery of and accounting for benefits delivered to almost 2.5 million public assistance clients. Doing so would assure the safety and well-being of Michigan's children, agency performance management metrics, federal compliance and reporting, fraud detection and recovery, and more. It would also support the Medicaid programs review process, and monitor the care and cost associated with a single individual across multiple programs. The success of the EDW has been measured in many ways, such as in the number of people who use it and the amount of data that is shared. But, those facts are a means to an end. The true measure of success is that no other state in America has achieved the concrete results from using an EDW to improve outcomes, reduce costs, streamline operations and manage programs. Nor has any

other state been so ambitious in its attempts to solve as many real-life problems through the innovative sharing of data.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

DTMB implemented an enterprise data warehouse (EDW) in the mid-1990s to ensure it could harness the power of data collected across agencies. At the core of the EDW is the Teradata data warehouse environment. A 12-terabyte repository holds information across 474 data sets and 18,000 tables. The architecture of the EDW allows for data joins between data sets to provide answers to questions not contemplated a few years ago. One of the main enablers of this knowledge management strategy is role-based governance of the data. Michigan's approach to data warehousing has been innovative and "enterprise" (statewide) by design, rather than separate platforms for each business area. By removing barriers to the sharing of enterprise data across business units, Michigan leverages massive amounts of data to create innovative approaches to the use of BI. Michigan has made major progress in its use of, and ability to achieve value from, the EDW. No other state in the country approaches Michigan in the way it shares data and information to deliver services to citizens and reduce costs borne by taxpayers. Michigan's use of data gathering from statewide sources for child support parent locator purposes is an example of how this enterprise approach has helped Michigan recover millions of dollars in child support for its children. The state leverages data from the Secretary of State, motor and vehicle licenses, Department of Natural Resources hunting and fishing licenses and campground reservations, Corrections inmate incarceration data, and professional license data, etc. A competitive bid process was undertaken in 2010 to review the work the state has done against best practices and to establish a contract for the EDW. Four vendors competed for this business with two technologies. Teradata was the chosen best-value solution.

Please list the specific humanitarian benefits the project has yielded so far.

Today, nearly 10,000 users in five major departments, 20 agencies and more than 100 bureaus rely on the EDW to do their jobs more effectively and better serve Michigan residents. Two predominant users are the Department of Community Health and the Department of Human Services. The EDW transcends technology and has become a true business asset. It is intricately and integrally woven into the lives of more than 7 million Michigan citizens, including state and court employees, Michigan program beneficiaries, and external vendors and providers who benefit from its use. Consolidated information from the EDW contributes to nearly every function of the Michigan Department of Human Services (DHS), including accurate delivery of and accounting for benefits delivered to almost 2.5 million DHS public assistance clients. This assures the safety and well-being of Michigan's children, agency performance management metrics, federal compliance and reporting, fraud detection and recovery, and more. One example is DHS and the State Court Administrative Office sharing data and conducting analytics to protect and care for children in cases involving child abuse, neglect, foster care, adoption and legal guardianship among the 16,000 children enrolled in child welfare services in Michigan. One initiative focuses on "timeliness" in disposing of cases, "permanency" in placing children, and "well-being" ensuring children are safe. Over nine months after initial implementation, Michigan increased family reunifications by 34% among temporary court wards. For the Michigan Department of Community Health (MDCH), the EDW was first implemented to support the Medicaid programs review process. Today, MDCH can monitor the care and cost associated with a single individual across multiple programs. The EDW has become a critical part of the agency's efforts, leading to a dramatic reduction in cases of child lead poisoning, 35% over a four-year span.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

The EDW has had a tremendous impact on the Michigan Department of Community Health (MDCH). It was first implemented to support the Medicaid programs review process. Today, MDCH can monitor the cost and care associated with a single individual across multiple programs. The EDW has become a critical part of the agency's efforts, leading to a dramatic reduction in cases of child lead poisoning, 35% over a four-year span. The EDW helped health officials identify 14 Michigan communities that represented 80% of all child lead poisoning cases, and target prevention efforts in those communities. MDCH provides each Medicaid health plan with an extract that contains all their enrolled children ages 1-3, along with results for those who have had a screening. This helps the plans identify the children that need to be tested or require follow-up. The system is used to identify high-risk children for influenza vaccinations. The information helps focus outreach efforts to treat at-risk residents; to determine immunization levels by provider or for providers within a qualified health plan; and to identify participants in other programs (for example, WIC) who are overdue for vaccines. Additional examples of how the system helps improve the health of Michigan residents: Health care analysis and outreach in partnership with Michigan State University; birth outcomes and enhanced prenatal services; birth defect tracking; asthma mortality review project; help manage complex long-term care projects; substance abuse recovery programs. Michigan has publicly documented that the EDW has helped achieve \$200 million in annual financial benefits within MDCH alone (over the last four years). These financial savings are categorized in the areas of program integrity benefits (including identifying fraud and abuse), cost avoidance due to improved outcomes, sanction avoidance, and operational efficiencies.