

Project Startup Report

Project Name: Workforce Data Quality Initiative (WDQI)

Agency: Job Service North Dakota

Business Unit/Program Area: Entire agency

Project Sponsor: Kevin Marchus

Project Manager: Mike Fisher

Project Description

In 2007, the state of North Dakota formed the Longitudinal Data System (LDS) Committee under the leadership of the Information Technology Department with the mission of proposing, developing and governing “a system for sharing longitudinal data that will maximize the usefulness of management information for stakeholders, and partners of North Dakota education, training, employment and service systems while protecting the privacy and security of personal information.” The LDS Committee released RFP #112-LDS-2008-001 and procured the services of Claraview, a division of Teradata Corporation to provide a LDS Strategic Roadmap,

The LDS Strategic Roadmap recommends organizing work into logical groups or “Tiers”. The following four Tiers were identified:

- Tier 1) Infrastructure and Data Governance.
- Tier 2) State LDS.
- Tier 3) Data Collection and Reporting
- Tier 4) Important, but Not Critical to State LDS.

In 2010, Job Service North Dakota applied for and received a federal grant to fund a data warehouse for the agency. The data warehouse will be used in conjunction with the State of North Dakota LDS.

Business Needs and Problems

North Dakota’s current data environment for its education and workforce efforts is driven by a need to collect and report specified data used to measure state agency program performance. Just as each agency has its own set of programs to administer, each program has its own set of state or federally required performance measures. The dynamics of multiple education and workforce programs administered across six agencies – Department of Public Instruction (DPI), North Dakota University System (NDUS), Department of Career and Technical Education (CTE), Job Service North Dakota (JSND), Department of Commerce, and Department of Human Services (DHS) – results in a high degree of variation in the hardware and software tools, and methodology used to handle data demands. Several agencies already have well-established databases that are primed for transitioning into agency-based data warehouses.

Agencies have a well-established history of gathering and reporting data. Some agencies have nearly 20 years of historical program data. Each agency has a regular schedule for data collection and reporting generally based on state and federal reporting requirements. That said, data collection is not as streamlined as it could be. The absence of data governance councils at the state and agency levels creates a data system void of the data definitions, rules, and processes needed to ensure data consistency, quality and reliability. Data is collected via paper, electronic files and face to face interviews, yet agencies are not collecting all the data they believe are needed to inform and improve program operations.

Current data reporting practices, which sometimes involve combining data across agencies, meet immediate needs to provide an agency accounting of program performance as set forth in state and federal legislation. The state is working on adopting a tool for matching an individual’s files from one agency to another. The inability to match data files coupled with data quality concerns are the greatest reporting challenges. While some in-house analysis takes place, a large share of the reporting effort is provided by SLDS, a state supported follow-up data reporting service. SLDS also provides data matching for any reports requiring related data from more than one agency. The current data environment has served the state well, but does not yet meet its full potential.

Key Metrics

Project Start Date	Project End Date	Original Baseline Budget
03/28/2012	11/30/2013	\$1,005,000

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Objectives	
Project Objectives	Measurement Description
JSND shall have a regular schedule for data collection and reporting generally based on state and federal reporting requirements.	<ul style="list-style-type: none"> Identify the processes for collecting data, develop and implement a JSND data warehouse. Enforce individual privacy through business rules programmed into the system. Maintain operational systems and ensure data quality processes are followed after implementation.
Upgrade the reporting technologies.	<ul style="list-style-type: none"> Expand the Business Intelligence reporting tool within JSND to deliver reports not only in fixed format, but also to give authorized users increased ability to generate ad hoc reports, create charts, and further analyze the data. Provide training for 3 people on the data warehouse and the usage of the data by Nov. 30, 2013. Provide 100% role based security to ensure that all State and Federal privacy and confidentiality regulations are followed by implementation.
Provide stakeholders information about the quality of their data.	<ul style="list-style-type: none"> Develop a data validation process that will ensure the data elements supplied conform to their definitions. Report data quality issues that were identified during the data validation process.
Demonstrate how longitudinal data can be used to improve workforce and training programs	<ul style="list-style-type: none"> Create a report that shows the outcomes of JSND workforce training programs by showing the change in salary, change in employment status, and program costs by Nov. 30, 2013 Create a report that shows high school drop-outs and graduates who do not attend college and their ability to find employment in North Dakota by Nov. 30, 2013. Wages and high school courses taken will be included in the analysis. Create a report that represents the effectiveness of programs that are utilized by UI claimants and the effectiveness of the educational and training programs to facilitate rapid re-employment by Nov. 30, 2013 Create a report that provides the supply/demand of job seekers and their ability to obtain employment in North Dakota, including an analysis of job seeker characteristics and industries with openings by Nov. 30, 2013.
Support agencies collecting the data they believe is needed to inform and improve program information. Support agencies ability to automatically match data files with other agencies.	<ul style="list-style-type: none"> Provide the needed workforce data from 8 JSND workforce data sets to the State Longitudinal Data System (SLDS) data warehouse which allows for the evaluation of outcomes of the workforce and education participants, and programs by Nov. 30, 2013. Control 100% access to the data in the JSND data warehouse using role based security by implementation. Access to the JSND data set will be controlled by the data sharing agreement signed 12/28/10.
Create data definitions, rules, and processes needed to ensure data consistency, quality, and reliability via data governance councils at the State and agency level.	<ul style="list-style-type: none"> Establish data governance processes within JSND. Participate at the SLDS level in establishing processes that define available data and usage per the data sharing agreement.

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Cost/Benefit Analysis

Anticipated Benefits:

Data Warehousing Capabilities:

- An important byproduct of implementing any data warehouse is the integration, consolidation, and governance of an organization's data.
- A state-level SLDS that integrates data from multiple government agencies will provide a stable, scalable, and sharable data repository for cross-agency longitudinal data analysis.

Reporting:

- In the long term (beyond 2 years), the state SLDS will provide all FINDET reporting capabilities and the FINDET application can be retired.
- Job Service North Dakota will be able to analyze data from multiple agency workforce programs, as well as data from other agencies, for the purpose of program improvement, outcome confirmations, and statistical analysis.

Cost Estimate:

The estimated budget for this project is \$1,005,000. The budget will be comprised of \$1,000,000 from the WDQI grant and \$5,000 from the American Reinvestment and Recovery Act (ARRA).

Cost/Benefit Analysis:

No direct cost savings or financial return on investment has been determined. However, the stated anticipated benefits and the consistency / fit with the State Longitudinal Data System Committee (SLDS) mission are the main goals of the project.

Key Constraints or Risks

Constraints:

- WDQI Grant funds must be expended by November 30, 2013.
- The American Reinvestment and Recovery Act (ARRA) funds are limited to \$5000 and must be expended on the Reemployment program only.
- If project decisions require compromise between the elements of Cost, Schedule, Scope, and/or Quality, the priority order is:
 - Cost
 - Scope/Quality
 - Schedule.
- Key ITD resources will only be available on a limited basis as many of the same resources are working on DPI's K-12 domain project and Job Service's WDQI project.
- JSND resources will be available on a limited basis as many of the project team resources are balancing with federal and state mandates, large projects and system maintenance.
- The project team has limited experience in the data governance, data warehousing, and warehousing infrastructure involved in this project's scale.

Risks:

- Coordination needed for inter-agency cooperation is not realized.
RISK MITIGATION: The State Longitudinal Data System Committee (SLDS) mission to propose, develop and govern a system for sharing longitudinal data will also aid in ensuring continued coordination and communication between agencies.
- The projects funding is lost.
RISK MITIGATION: The SLDS committee shall provide recommendations for further development, cost

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proposals, proposals for legislation, and data sharing governance, including recommendations concerning the long-term role and administration of the follow-up information in North Dakota for education and training program. The SLDS committee will identify funding sources to develop and sustain the systems.

- Lack of JSND staff resources to work on the project.
RISK MITIGATION: By using iterations to work on data sets, we can plan which data sets to work on based on other JSND priorities. Project would continue with current staff, with appropriate re-assignments made if necessary. Additional staff may need to be transferred or persons hired to replace personnel leaving. If possible, transition training could be done by key person leaving. If this causes a delay in the project, issue an impact of project change.
- Security of data.
RISK MITIGATION: The Privacy Subcommittee of the SLDS Committee has done extensive work researching federal and state privacy laws and proposing data sharing solutions. ITD's Enterprise Information Technology Architect will play a key role by understanding the security requirements and data sharing agreements in place in order to design and maintain the workforce longitudinal data systems. Physical control will be controlled by ITD and limited to staff who maintain the storage and server environments. Data masking, encryption and de-identification will be practiced at the database level as well as masking with the business intelligence (BI) tools. Security features of the BI tools will be used to limit access as required. Data will be joined at the individual level but the BI tools will enforce role based security, restricting access to the aggregate level and masking low cell counts on businesses and individuals.
- Scope changes.
RISK MITIGATION: Scope changes will follow best practices found in the North Dakota Project Management Guidebook. Scope changes can result in data sharing agreement changes, schedule delays, and additional costs.