



Business Impact

"In today's environment, where data elements are numerous, complex, and ever-changing, managing a data system without a robust metadata system would not be practical or advisable. In fact, many education agency staff consider a central, authoritative metadata repository a critical component of effective management and use of an agency's data."

Traveling Through Time: The Forum Guide to Longitudinal Data Systems, National Center for Education Statistics, February 2011

Challenges

- **Manual tracking.** It is impossible to manually track data changes among a multitude of educational data systems on hundreds of reports, applications and thousands of definitions and fields across the entire state.
- **Impact awareness.** It is hard to know the impact of data changes before a change is made, adding risk to data maintenance.
- **Downstream implications.** The effects of changes made to fields downstream for reporting accuracy cannot be tracked prior to making the changes.
- **System integrity.** Not knowing the implications of adding a new data field introduces risk into the integrity of the overall system.

How can metadata from all educational systems, applications and reports be stored in an open, centralized and integrated repository?

YOUR GOAL: Maintain and track metadata across all education data systems, applications, reports and analyses

US states are creating statewide longitudinal data systems that will give them the capability to follow students from pre-kindergarten through postgraduate school and into the workforce. When pulling data from these myriad educational systems and reconciling it in a data warehouse, it is imperative to maintain and track metadata across all the data systems, applications, reports, analyses, etc. Integrated metadata (information about data sources, how it was derived, business rules and access authorizations) is crucial for producing accurate, consistent information, but it is no small feat. It is often labor-intensive and time-consuming for IT to maintain and track metadata information across these systems. But without it, business users may receive incomplete or inaccurate information. Not understanding the impact of a change in a variable can and will wreak havoc on these systems.

If metadata from all systems, applications and reports can be stored in an open, centralized and integrated repository, data changes only need to be documented in one place. There are fewer systems to support, and business users can count on high-quality, accurate information. A single version of the truth will be available to all, and better use of staff time will lower the total cost of ownership for IT infrastructures.

OUR APPROACH

With SAS®, you can share business metadata across the enterprise from a centralized repository, ensuring that metadata is consistent, accurate and not held in isolated, hard-to-maintain silos. We approach the problem by providing software and services to help you:

- **Easily manage a centralized, integrated metadata repository.** Consistent and accurate usage of metadata results in reduced errors in report creation and, consequently, decision making that lets everyone interpret the results in the same way. Fewer resources are spent supporting multiple silos and analyzing and interpreting data from disparate locations.
- **Conduct impact analysis and know data lineage.** Analyze the scope and impact of making changes to existing objects (such as columns, tables and process jobs) before the changes occur. Track data as it moves through systems, applications and reports, and know the implications to validate processes and build user confidence.
- **Gain a single version of the truth.** Realize a higher level of data integrity through consistent and accurate usage of metadata for reduced errors in report creation.
- **Reuse metadata structures from existing databases.** Our open enterprise metadata structure retains and tracks technical, business and administrative metadata in a way that leverages and facilitates reuse of existing table definitions, business rules and more, lowering the total cost of ownership. Navigational tools help users understand how the data was derived and where it is stored and used.
- **Document your metadata.** With SAS, the entire longitudinal data systems creation process can be documented on a metadata level so that the technical documentation (metadata) stays with the data when employees leave, preserving your knowledge capital.



THE SAS® DIFFERENCE: An End-to-End Solution to Manage Your Metadata

With SAS, reduce errors, complexity and maintenance with increased interoperability between applications for lower cost of ownership and a single version of the truth:

- **Shared metadata across the entire SAS® Enterprise Intelligence Suite for Education.** SAS Data Management, SAS Reporting and SAS Analytics all share common metadata and a common repository. No one component is isolated; communication can occur wherever there is a need for metadata sharing and exchange.
- **Lower cost of ownership.** The exploitation of this centralized and shareable metadata further enhances the value achieved with each component while driving down the cost of implementation.
- **Support and training.** SAS maintains outstanding levels of support and customer satisfaction through self-help and assisted-help resources. SAS also provides real-time support when you are unable to address a problem successfully on your own. Many different training styles can be used to suit your learning needs: Classroom, Live Web Classroom, e-Learning, On-Site Training or Mentoring.
- **Our commitment to education.** Since we started more than 35 years ago as a research project at North Carolina State University, SAS has remained committed to partnering with education to deliver software and services for both academics and administration. Each year, SAS donates millions of dollars as a means of improving the educational process.

CASE STUDY: A US state education system

Situation

In creating a statewide longitudinal data system, the state needed to dynamically access, consolidate and track 26 sources of education data, hundreds of reports and thousands of definitions and fields. The state needed to use metadata both to track data changes across the state and to identify the effect of changing a data element before changes were made.

Solution

SAS provided a comprehensive solution that included data management, reporting, analytics and a metadata server.

Result

The state now knows when a data element changes and can anticipate with clarity the effect of the change before it is made. It uses metadata to understand the data lineage and knows that a certain data field feeds into a specific process, in which tables it resides, what OLAP cubes it is used in, and which reports it feeds – saving the state more than 80 hours of coding or re-coding. Now when analysts want a new field, they know the implications across systems, applications and reports with confidence, freeing up their time to work on more critical projects using advanced analytics.

“When someone wants a new field, what are implications across systems? We can predict this now. That’s what SAS is capable of doing. SAS has the most robust solution in metadata management.”

– Longitudinal Data Manager

What if you could ...

Centralize

Have a centralized, integrated metadata repository so that you only have to make changes in one place, you have fewer systems to support, and business users have access to reusable, accurate information?

Analyze impacts

Know the scope and impact of making changes to existing objects (such as columns, tables and process jobs) before the changes occur?

Have one version of the truth

Ensure that the data used by legislators, policymakers, parents and educators is accurate and reliable based on one version of the truth?

Reduce maintenance

Quickly reuse metadata structures from existing databases and eliminate the need to write and rewrite complex consolidation programs – thus saving time and money?

Document

Be assured that you maintain your knowledge capital with employee turnover?

You can. SAS gives you THE POWER TO KNOW®

SAS FACTS

- SAS solutions are licensed and implemented at more than 3,000 educational institutions worldwide.
- SAS has more than three decades of experience working with education institutions.
- SAS solutions are used at more than 55,000 business, government and university sites in more than 129 countries – including 90 of the top 100 companies on the 2011 Fortune Global 500® list.

Learn more about SAS software:
www.sas.com/education



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