



**A SAS Enterprise Intelligence Solution for Releasing Jailed
Enterprise Resource Planning Data (619)**

Kennesaw State University Panelists:

**Edwin A. Rugg - Executive Director,
Enterprise Information Management**

Leigh Funk - Director of Data Integrity Initiatives

**Donna Hutcheson - Director of Enterprise Information
Reporting**

Erik R. Bowe - Director of Data Warehousing



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KSU'S SAS Initiative in Enterprise Information Management

Two Key Performance Objectives for Information Management and Technology

Information management and technology at KSU are expected to add value at two critical levels of performance:

Level 1 Objective. Support efficient automation of essential routine operations such as employment and payroll processing, financial accounting, student admissions, course registration, financial aid management and related Web-based transactions (i.e., support operational database “applications”) -- ESS leads

Level 2 Objective. Facilitate the establishment of accessible, accurate and reliable systems for information generation to support reporting, planning, decision-making, strategic management, and organizational effectiveness (i.e., support “information reporting and management,” “enterprise intelligence” and “analytics”) -- EIM leads

Only Routine Operations Are Served Reasonably Well by Current ERPs

KSU's Banner and PeopleSoft systems are highly complex commercial software packages that focus primarily on Level 1 applications. They perform essential routine operations in student records, accounting, employment, and payroll reasonably well. Their vendors tout the capabilities of these systems to communicate with one another and serve as important Level 2 sources of decision-support information. However, those claims are not easily or routinely realized. The Banner and PeopleSoft systems are weak in support of enterprise intelligence and analytics. They are often negatively characterized as “data jails” because the data they capture are not easily accessed, edited, extracted, transformed, analyzed, or reported and are often neither standardized nor “clean.” Queries are cumbersome, complex, and require technical intervention. KSU's considerable efforts over the past five years to use those systems for the creation of a data warehouse, data marts, operational and analytical reports and enterprise intelligence have yielded disappointing results. KSU's CIO and EIM professionals have concluded that although Banner and PeopleSoft applications add value for routine university operations at Level 1, practical and cost-effective solutions for responding to the university's demands for data integrity, data integration, enterprise intelligence and analytics at Level 2 are not likely to evolve from those particular database systems and tools.

KSU's SAS Initiative for Enterprise Intelligence and Analytics

KSU's SAS BI Initiative aims to establish a practical and cost-effective alternative to meeting institutional demands for enterprise intelligence and self-service analytics at Level 2. In 2007, EIM acquired and installed the core components of the SAS Enterprise Intelligence Suite for Education (EISE). EISE is not a package that performs Level 1 operations. Instead, it is an enterprise data warehousing and intelligence platform that is designed primarily to address Level 2 interests. The EISE platform overlays and interfaces with diverse application platforms, silo operations, and niche software tools such as our existing Banner and PeopleSoft applications. It integrates and stores enterprise data in a unified metadata repository that reinforces data integrity and efficiently disseminates descriptive and predictive decision-support analyses through dashboards and self-service ad hoc reports to the desktops of end-users with little or no technical jargon or programming. The SAS BI platform is a recognized industry leader in business intelligence and analytics. Other early adopters in higher education of the EISE platform include the University of Central Florida, University of Kansas, the Virginia Community College System, Broward Community College in Florida, and Slippery Rock University. Most of those institutions have integrated EISE with their existing PeopleSoft applications. KSU's EIM team is presently in the process of integrating EISE with the existing Banner database. Future acquisition of the Financial Management and Human Capital Management modules would facilitate integration of the PeopleSoft databases (or their successors) with KSU's enterprise data warehouse. Even without the SAS FM and HCM modules, the present EISE platform can be utilized to provide self-service data extraction and reporting functions from KSU's existing operational databases without the necessity of technical programming at the user level. KSU's SAS Initiative has substantial potential to address successfully the institution's Level 2 needs and could produce a proof of concept and scalable prototype for addressing Level 2 interests throughout the University System of Georgia.

A SAS Enterprise Intelligence Solution for Releasing Jailed Enterprise Resource Planning Data

2009 AIR Forum Session 619

Panel Presenters

Ed Rugg (Panel Facilitator) - Executive Director, Enterprise Information Management at Kennesaw State University

Erik Bowe (Panelist) - Director of Data Warehousing, EIM at KSU

Donna Hutcheson (Panelist) - Director of Enterprise Information Reporting, EIM at KSU

Leigh Funk (Panelist) - Director of Data Integrity Initiatives, EIM at KSU

Mission of Enterprise Information Management

In April 2007, the Office of Institutional Research & Information Management and the Center for Institutional Effectiveness were consolidated and reorganized into Enterprise Information Management (EIM), an administrative unit that supports university-wide information interests and operates under the Vice President for Operations/Chief Information Officer, Dr. Randy Hinds. The primary mission of EIM is to facilitate the continuous improvement of KSU's enterprise data management, quality, warehousing, analytics, and access for decision support, strategic planning, organizational effectiveness, and information reporting at institutional and unit levels. SACS accreditation liaison and reporting functions are also part of this mission.

Accepting the Charge to Lead the SAS Initiative

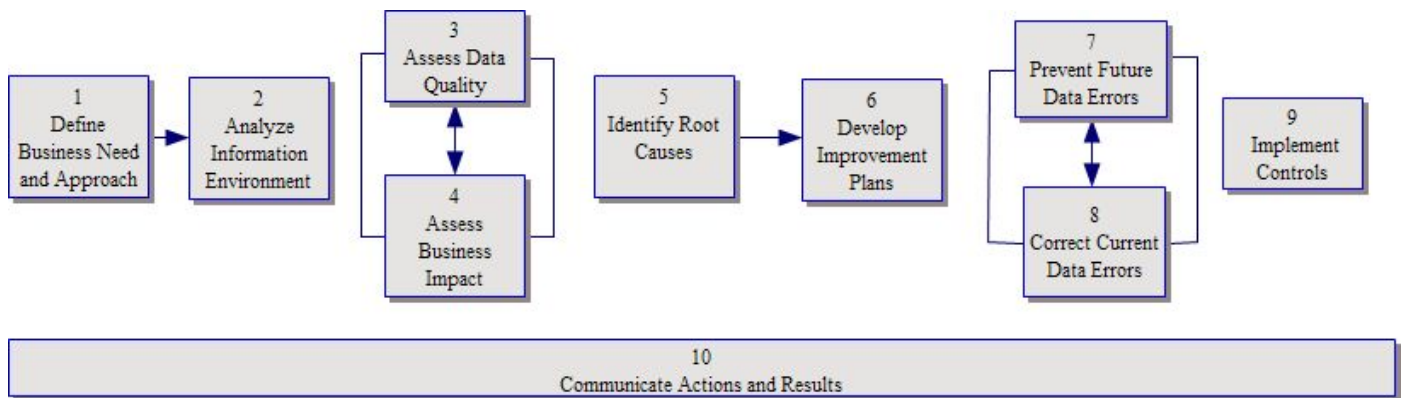
Enterprise Information Management accepted the COO/CIO's charge to take a leadership role in coordinating KSU's SAS Initiative in 2007. That assignment is a good fit for EIM because the SAS Initiative's expected contributions are inextricably linked to the performance of EIM's fundamental mission and assigned responsibilities for enterprise reporting. EIM is the assigned keyholder with responsibility for many of KSU's federal, national, regional, state and local reporting tasks. EIM is also the publisher of KSU's Fact Book and manages KSU's Virtual Information Center. One of EIM's key strategic goals over the next five years is to substantially improve user-friendly, self-service, desktop access to high quality institutional data and decision-support information.

EIM as a Cutting-Edge Development

Being one of only a handful of participants from colleges and universities at the 2008 Data Management International (DAMA) conference, EIM's Executive Director concluded that higher education is trailing industry and government in the adoption of master data management principles, metadata development initiatives, data governance and data stewardship practices, and data warehouse integration across silo operations to support enterprise intelligence capabilities. Those terms and concepts are typically absent in IT and IM conversations throughout the University System of Georgia. It was interesting to note, however, that the term, "Enterprise Information Management," was being touted at that conference as a new strategic direction in the field of data management.

Using the Ten Step Process With SAS to Release Jailed ERP Data

Ten Step Process To Quality Data Flow Chart



The Ten Steps Process – Assessing, Improving and Creating Information and Data Quality

From Danette McGilvray, 2008

1. Define Business Need and Approach

Define and agree on the issue, the opportunity or the goal to guide all work done throughout the project. Refer to this step throughout the other steps in order to keep the goal at the forefront of all activities.

* 2. Analyze Information Environment

Gather, compile and analyze information about the current situation and the information environment. Document and verify the information life cycle, which provides a basis for future steps, ensures that relevant data are being assessed, and helps discover root causes. Design the data capture and assessment plan.

* 3. Assess Data Quality

Evaluate data quality for the data quality dimensions applicable to the issue. The assessment results provide a basis for future steps, such as identifying root causes and needed improvements and data corrections.

4. Assess Business Impact

Using a variety of techniques, determine the impact of poor-quality data on the business. This step provides input to establish the business case for improvement, to gain support for information quality, and to determine appropriate investments in your information resource.

* 5. Identify Root Causes

Identify and prioritize the true causes of the data quality problems and develop specific recommendations for addressing them.

* 6. Develop Improvement Plans

Finalize specific recommendations for action. Develop and execute improvement plans based on recommendations.

* 7. Prevent Future Data Errors

Implement solutions that address the root causes of the data quality problems.

* 8. Correct Current Data Errors

Implement steps to make appropriate data corrections.

9. Implement Controls

Monitor and verify the improvements that were implemented. Maintain improved results by standardizing, documenting, and continuously monitoring successful improvements.

10. Communicate Actions and Results

Document and communicate the results of quality tests, improvements made and results of those improvements. Communication is so important that it is part of every step.

SAS BI Reporting Tools for Different Needs and Users at KSU

- ❖ **SAS Information Delivery Portal** serves the novice and experienced user of routine Banner Database Reports. This tool allows end-users to easily run parameterized reports at will. “SAS Information Delivery Portal provides a single access point for aggregated information via an easy-to-use Web-based interface. The solution provides a common front end for SAS intelligence, Web-based SAS solutions and other digital content in a role-based, secure, customizable and extensible environment.”
- ❖ **SAS Web Report Studio (WRS)** is ideal for the nontechnical power user. As one of the components of the SAS Enterprise Intelligence Suite, SAS Web Report Studio enables the user to design, create, and share Web-based reports. At KSU, WRS users are supplied with a customized data cube containing mapped data elements of particular interest and from which users can select, sort, summarize, format and produce custom ad hoc reports as needed, providing the analytical power of SAS without requiring the user to understand the complexity of database tables, interpret esoteric data element labels or codes, or have programming knowledge.
- ❖ **SAS Enterprise Guide** is especially useful for the programmer/technical user. “The SAS Enterprise Guide software is an easy-to-use Windows application that provides an intuitive, visual interface, access to the power of SAS, transparent access to data, ready-to-use tasks for analysis and reporting, easy exporting of data and results to other applications, and scripting and automation.”

Information & Training for Routine & Ad Hoc Reporting

The screenshot displays the Virtual Information Center (VIC) website interface. The browser window shows the URL: <https://vic2.kennesaw.edu/Portal/navigate.do?PortalPage=PortalPage%2Bom%3A%2F%2FFoundation%2Fresposname%3DFoundation%2FPSPortalPage%3Bd%3DA5Ry>. The website features a navigation menu with links for Departments, Directories, KSU Search, KSU Home, Options, Search, Log Off, and Help. The main content area is divided into three sections:

- SAS Tool for Self-Service Ad-hoc Reporting**: Includes links to refresh the collection and lists resources such as "Crosswalk of Portal Reports to SAS Banner Database Reports", "SAS Web Report Studio", "An Introduction to SAS Web Report Studio-WRS", "SAS Web Report Studio Tutorial", "An Introduction to SAS Information Delivery Portal-SIDP", and "SAS Information Delivery Portal Tutorial".
- Academic History-Routine Reports**: Includes links to refresh the collection and lists reports like "Academic History-Grades by College Report.srx", "Academic History-Grades by CRN Report.srx", and "Academic History-Registered Student Class History Report.srx".
- General-Routine Reports**: Includes links to refresh the collection and lists reports such as "General-Admissions Cube Report.srx", "General-Degree Cube Report.srx", "General-Enrollment Cube Report.srx", "General-FICE Lookup Report.srx", "General-Holds Report.srx", "General-Registration Cube Report.srx", and "General-Student Attribute Cube Report.srx".

At the bottom, there is a section for **International Student-Routine Reports** with a link to refresh the collection and a report titled "International-International Degree Awarded Report.srx".