Effective Practice Detail

Title:	**Reporting and Decision Support Services**
Institution:	Rensselaer Polytechnic Institute
Date Submitted:	12/3/2003
Subject Terms:	Data Warehouse , Decision Support Systems
Background/Challenge:	In the past, decision makers across Rensselaer Polytechnic Institute (RPI) had poor access to data. Requests for data had to be directed to specific operational areas and were often provided only in hard copy. To analyze and transform data into useful information, decision makers and their staff had to enter non-integrated data into their local systems. Executives often couldn't "see the forest for the trees"—either they were drowning in too much data with poor options for analyzing it or received too little useful data"—and frequently received conflicting information or responses based on inaccurate assumptions about the types of data and analysis required. In addition to accurate and integrated information, executives and decision makers throughout the campus required assistance in defining, analyzing, and interpreting institutional data to support strategic planning and policy-making processes at RPI. Each unit and division struggled to conduct data analysis and interpret results obtained from non-integrated data sources. RPI needed an institute-wide function to facilitate the flow of accurate, timely information to assist all levels of management in defining issues, obtaining appropriate data, and interpreting results.
Practice/Solution:	RPI developed a data warehouse that uses a Web-based executive dashboard application accessible via portal technology to facilitate better access to information by a broader base of campus users who are unfamiliar with data storage and coding techniques. The data warehouse contains consistent, integrated, cleaned, transformed, detailed, and summarized information derived from the operational systems. The data warehouse implementation offers more than just a technical solution that supplies information to decision makers and their staff—it also promotes a culture that values analytically based information gathering and analysis as opposed to operating simply from "gut feelings." Recognizing that the new technology would present barriers and bring cultural changes to RPI, the campus rollout strategy was carefully planned and executed. The rollout strategy identified the need for people to acquire new job skills and update their job descriptions. It also facilitated a top-down approach to setting expectations and fostered a "one version of the truth" environment, where only information produced by the warehouse is officially accepted. The data warehouse architecture was combined with a broad array of decision support services accessible to all units at RPI. The primary focus of these services is to establish campus-wide training programs for RPI executives and their support staff. Decision support services were established to facilitate the analysis and interpretation of institutional data and to provide this information to support-planning and decision-making personnel. The newly established data warehouse group within the Division of the Chief Information Officer works closely with central administration to deliver full and comprehensive decision support services to Rensselaer.
Benefits:	• Empowers decision makers by enabling direct access to accurate, consistent, and non-volatile information and by offering decision support services that facilitate the analysis and interpretation of institutional data. • Redirects costly personnel hours from data gathering, matching, and consolidating to data analysis. Reduces the need for RPI information consumers to replicate data and maintain redundant tracking systems. • Promotes a "no walls" culture. The information sharing lowers the walls between administrative and academic units, creating alliances and connecting people to each other and RPI as a whole. • Improves data quality over time. Broader access to information helps us better define what types of information we need on-hand for effective decision making.

This in turn identifies areas for improvement in data-gathering and -entry functions.

• Enhances institutional effectiveness by extending and expanding the use of management information across campus. Extensive use of management information gradually promotes an analytical culture that places value on accurate information and analysis.

• Improves integrity and conformity of campus-wide information. As more people on campus use the data, errors are identified and corrected, thereby improving data integrity over time.

• Improves access to the historical data, which is available to the broader campus community for ad hoc review and analytical processing.

• Provides direct support to RPI executives and the schools in analysis, interpretation, and provision of institutional information.

References - URLs:	http://www.rpi.edu/datawarehouse
Costs:	Data warehouse architecture and services • Servers: $40K–100K • Oracle licenses: cost based on current agreements • Extract, transform, load (ETL) tool (recommended): about $120K with annual maintenance • Front-end access tool: $40K–100K with annual maintenance based on the agreements and the tool choice Personnel • Manager (1) • Trainers/data analysts/customer support (2) • Business systems analysts/developers (3.5) • Database administrator (0.5) • Systems administrator (0.5) • Front-end developer (0.5)

Replicable:	How replicable is this practice or solution?
	
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	  Not at all **Highly**

Notes:	Dr. Shirley Ann Jackson, President of Rensselaer Polytechnic Institute and former Chair of the U.S. Nuclear Regulatory Commission featured the data warehouse implementaton in her General session titled "Ahead of the Curve: Future shifts in Higher Education'
Contact:	**This person has agreed to be contacted for more information on this effective practice.** Ora Fish Program Manager, Data warehouse IACS Rensselaer Polytechnic Institute (518) 276-2213 fisho2@rpi.edu