

Category 7 – Measuring Effectiveness

CATEGORY 7 INTRODUCTION

Processes for Measuring Effectiveness at Madison College exhibit a range of maturity levels. Several processes are moving toward the Integrated maturity rating, including utilizing a data warehouse Business Intelligence (BI) concept to better store and integrate disparate data from multiple sources providing decision makers with comprehensive information, and establishing cross-functional teams to review and analyze data and draft action plans for improvements.

The College has successfully implemented improvement projects to assign benchmarks and comparable data to the Board End Measures and Strategic Plan goals and successfully build a number of data Cubes, dashboards and portals to provide more readily available information for decision makers.

Future initiatives will focus on sustaining effort for the BI vision to fully integrate financial and Human Resources data into the data warehouse model.

An INTEGRATED process that demonstrates a stable, well-developed structure and is continually monitored and improved through analysis, innovation, and sharing is 7P3, which deals with determining department and unit data needs.

ALIGNED processes that are stable, consciously managed, regularly evaluated for improvement and address the institution's key goals and strategies include 7P1, 7P2, 7P5, 7P6, and 7P7. These processes address selecting, managing and distributing data for instructional programs, non-instructional programs and planning and improvement processes; determining sources for comparative data; aligning department and unit analysis with organizational goals; and timeliness, accuracy, and security of information systems.

A SYSTEMATIC process that has clear goals, is proactive rather than reactive and targets ineffective elements for improvement is 7P4,

which addresses analyzing data and sharing those analyses.

7P1: Selecting, managing, and distributing data and information to support instructional and non-instructional programs and services

Selecting and Managing Data

On a macro-level, data selection, management, and distribution are influenced by Key Performance Indicators of the College set by the Board End Measures, the College's 3-Year Strategic Plan, and the day-to-day needs of schools, programs and departments. Student-related data is collected on the College's main database (PeopleSoft Campus Solutions) and made available through the College's data warehouse. For example, retention data cubes are made available for units and departments based on retention becoming a priority in the Board End Measures and strategic plan.

Financial and human resource data are also captured, but are stored separately on PeopleSoft Finance and PeopleSoft HR. This data is available through queries on the respective PeopleSoft systems. However, the College conducted various voice-of-the-customer sessions to gauge data needs of decision-makers and data users, which determined the need for global access to all College data. In 2009, the College initiated the implementation of a business intelligence vision that will integrate all data sources collected by the College into a single data warehouse managed by IRE. This project has enabled more efficient self-service access to data for decision-making.

At the same time, selection of data also occurs on a micro-level, with an individual or group responsible for a project determining data needs. For example, student surveys of instruction are used and stored by the relevant school and Learner Success Hub, but are not part of the institutional data warehouse.

Institutional Research and Effectiveness (IRE) is available to assist individuals or groups in selecting the data or information. Some of the factors that can guide data selection include

availability, current or projected collection and reporting capabilities, and appropriateness of the measure to the outcome. Depending on the scope, use and audience for the data, IRE may oversee the collection, reporting and dissemination of the data to the appropriate individual or group on a regular basis. If the data or information is unique and localized, the individual or group that selected the data also manages the data.

Distributing Data

The College distributes data to instructional and non-instructional staff in multiple ways. Through the use of IBM Cognos, IRE provides on-demand access to data through Online Analytical Processing (OLAP) cubes, dashboards, and reports. The College’s new Unit-Planning Tool provides unit-specific data on relevant KPIs to assist in the planning process. IRE also maintains an “Available

Research Data” website which houses many of the main data sources for the College, such as graduate and employer information, student and staff survey results, and the Board End Measures. Stakeholders can also request data on a case-by-case basis through the online IRE Work Request Process, and the requested data is distributed through dashboards, reports, and views.

Open-records requests from external stakeholders are often addressed through email after being reviewed by the College’s legal counsel and, if there are FERPA concerns, the Associate Vice President of Enrollment Services. In each case, the College strives to distribute data in an efficient and appropriate manner.

Table 7.1 shows the various systems, purposes and owners of data at the College.

Table 7.1 - Data Selection, Management and Use

Data Description	Selected By	Managed By	Use
College Board Measures	Board of Trustees and College Council	IRE	Monitors college-wide effectiveness in five distinct categories
3-Year Strategic Plan Measures	Executive Team	IRE	Provides guidance for the institution's strategic actions for a three-year period.
Enrollment Management Plan	Marketing and Enrollment Director	IRE	Provides guidance for the institution's recruitment and marketing efforts
Equity Scorecard Results	Inter-Cultural Council	IRE	Monitors college-wide effectiveness in relation to the institution's diversity efforts
Mandatory Assessment, Advising and Placement (MAAP) Results	Testing Center / MAAP Managers	IRE	Places students in courses appropriate to their skill level in Reading, Writing and Mathematics
Academic Plan Data	Assoc. VP - Learner Success	IRE	Provides guidance regarding academic offerings for the next 5 to 10 years
FTE and Headcount Reports	Learner Success Programs	IRE	Monitors full-time equivalent and headcount data in order to assist program planning
Student Satisfaction Inventory Results	Enrollment Management Work Team	IRE	Monitors institution's effectiveness related to meeting student needs and student satisfaction
Student Admissions Reports	Enrollment Services Manager	IRE	Monitors students admissions trends and effectiveness of Madison College processes
Courses and Classes Reports	Assoc. VP - Learner Success	IRE	Monitors student attendance patterns in support of effective course scheduling
PACE Survey	Executive Team	IRE	Provides employee perception of College’s effectiveness and efficiency in a number of different areas
Community College Survey of Student Engagement Results	Executive Team	IRE	Assesses institution’s effectiveness related to educational practices that may be related to improved student outcomes
Financial Plan	Executive Team	Financial Resources	Monitors institution's financial effectiveness
Nursing – ATI and NCLEX Testing Pass Rate	Nursing Program faculty	Nursing Program faculty	Determines effectiveness of instruction and/or plan for curriculum revision
Unit Plan	Unit members	Individual units or programs	Monitors unit effectiveness and provides data for improvement planning

7P2: Selecting, managing, and distributing data and performance information to support planning and improvement

(CC-5D) The College’ strategic goals drive the selection of data used to support planning and improvement efforts. For example, the College set the goal of increasing flexible learning offerings. Data is now collected on the number of flexible learning offerings and success rate by offering format. Similarly, with the initiation of the Retention Plan, data showing current retention and persistence is collected and analyzed.

Schools and larger service units set specific goals based on the College’s strategic plan and might collect data specific to the needs of the work unit. Finally, planning and data selection at the unit level (instructional or non-

instructional) is influenced by both the larger strategic goals and the goals of the school or larger work unit. This process is best illustrated by the Unit Planning Process described below.

The College recently developed a single Unit Planning Process. This tool includes sections for units to review past and present work, envision future work, review data to inform or drive future work, write outcomes and action steps and tie the outcomes into the budget process (i.e., if a new budget request is not in the unit plan, chances are it is not going to get funded). All goals in the Unit Plan are linked to the strategic plan, and each unit is provided with a common set of data to use in the process through the Unit Planning Tool. Figure 7.1 is an example of data provided to an instructional unit.

Figure 7.1 - Sample of Data Provided to Instructional Units in the Unit Planning Tool

Madison Area Technical College
Five-Year Program Trends for Nursing-Associate Degree Program
Program Code:105431

		Fall Semester				
		2005-06	2006-07	2007-08	2008-09	2009-10
	Program Enrollment	469	523	501	468	393
Age	Age % 22 & Under	16.8%	16.4%	16.2%	14.1%	12.2%
	Age % 23-39	65.0%	64.2%	64.3%	67.1%	63.1%
	Age % 40 & Over	18.1%	19.3%	19.6%	18.8%	24.7%
	Age % Not Available	0.0%	0.0%	0.0%	0.0%	0.0%
Ethnicity	Minority % All Students	11.1%	9.8%	8.4%	11.4%	10.6%
	Minority % Known Students	10.9%	9.6%	8.2%	11.1%	10.2%
	African American %	4.7%	3.4%	3.4%	4.1%	3.8%
	American Indian %	0.4%	0.2%	0.2%	0.9%	0.5%
	Asian American %	3.2%	4.2%	2.6%	3.8%	3.6%
	Hispanic %	2.6%	1.7%	2.0%	2.4%	2.3%
	Caucasian %	87.4%	88.3%	89.8%	86.3%	86.0%
	Ethnicity % Not Available	1.7%	2.1%	2.0%	2.6%	3.8%
Gender	Female %	91.5%	90.6%	89.8%	89.3%	90.3%
	Male %	8.5%	9.4%	10.2%	10.7%	9.7%
	Gender % Not Available	0.0%	0.0%	0.0%	0.0%	0.0%
FT-PT Status	Full-Time%	26.0%	10.1%	8.4%	5.1%	4.1%
	Part-Time %	74.0%	89.9%	91.6%	94.9%	95.9%
FTE & Retention	Program FTE	129.5	134.6	122.8	111.8	101.3
	Core FTE	60.2	81.5	75.0	76.0	82.2
	Core Retention	95.9%	95.9%	94.8%	96.3%	97.0%
	Core Success C	95.1%	94.5%	90.8%	91.9%	93.2%
	Core Success B	71.3%	76.3%	77.1%	77.0%	81.9%

Units can also load relevant data from other internal or external sources, as needed. For example, the School of Academic Advancement included research showing that bridge

programming is a promising practice to support an outcome related to developing more bridge programs within the College.

7P3: Determining department and unit needs related to collection, storage, and accessibility of data and performance information

While federal and state mandates dictate many data needs, the College’s 3-Year Strategic Plan increasingly determines what data departments and units collect. Systematic processes integrate these plans and goals into the day-to-day individual processes of college units. Many of these decisions are driven by trends, customer feedback, industry needs, program accreditations, process improvement needs, comparisons with other colleges and workload reduction. For example, the new Program Analysis Process relies on trend data from labor market information, student completion and placement. Finally, IRE and the AQIP process are two crucial means of determining data needs.

IRE’s mission is to improve quality, efficiency and effectiveness by supporting data-driven decision-making and planning. IRE utilizes the following methods to determine internal stakeholders’ data needs:

- Self-service Cognos Reporting System
- IRE Online Work Request process
- Unit Planning Tool
- Voice-of-the-Customer Interviews (Convocation sessions to provide input by college staff and faculty)
- Data warehouse project collaboration, e.g. retention cube

In response to the previous AQIP Systems Portfolio Appraisal, as well as internal assessments, the College created a more efficient

and effective system to collect, store and distribute data. While the College has maintained a data warehouse for about ten years, in the past few years this warehouse has been upgraded and now stores the disparate data from all areas of the College, allowing for centralized integration and access, as well as a more thorough and accurate picture of key issues, such as enrollment trends.

The Security Authorization Facilitation and Enforcement (SAFE) Team was started in January of 2012 to mitigate risk to the College by allowing staff access to the systems necessary to perform their jobs. Each position in the College was assigned a specific level of access based on the needs of that job description. This access is based directly on the roles a staff member serves within the College.

7P4: Analyzing data and information regarding overall performance; sharing analyses throughout the organization

(CC-5D) Table 7.2 shows what college-wide data is collected, how frequently, and how the results and analysis are shared. For each one of the college-wide data collected, such as data from the SSI, CCSSE and PACE, the College establishes a cross-functional team to review and analyze the data. These cross-functional teams examine and prioritize the data coming from various sources and draft action plans for improvements. Any improvements made based on the data are then shared with survey-takers when they complete the subsequent administration of the survey. The findings are also shared with the District Board during Board

Table 7.2 - Type, Frequency, and Sharing of College-wide Data

Data	Cycle	How Shared
Board End measures to District Board	Annual	Board meetings
Strategic Goal measures to Executive Team	Annual	Exec Team meetings
5 year trend data to programs for unit planning	Annual	Unit plan webpage
Graduate Follow-up Survey	Annual	College website / Reporting System
Apprentice Survey	Annual	College website
SSI Survey	2 Years	College internal site/analyzed and shared
CCSSE Survey	2 Years	College internal site/analyzed and shared with all employees
PACE Survey	3 Years	College internal site/analyzed and shared with all employees
Employer Follow-up Survey	4 Years	College website
5 year Longitudinal Survey	5 Years	College internal site
Survey of Student Opinion of Instruction	Per Term	Shared with affected employees
Madison College Weekly Dashboards	Weekly	Email dissemination

End Measure presentations and with the Executive Team and college leadership at leadership retreats and lunches, in Matters and Blackboard, and in Executive Team meetings to help guide decision-making. Examples of recent initiatives influenced by data analysis are:

- New student intake model was based on SSI and CCSSE data, along with analysis of student applicant flow data.
- Retention Plan activities rely heavily on SSI and CCSSE data and are benchmarked against peer colleges.
- New Change Management policy and the revamp of Madison College Matters were both implemented as a result of PACE feedback.

7P5: Determining needs and priorities and selecting sources for comparative data

In response to feedback from the 2009 AQIP Systems Appraisal, the College selected benchmarking of data as an improvement project. A cross-functional team worked with the Executive Team to determine where comparative data was needed and to define an appropriate peer group of 25 institutions to be used for comparisons. These schools were selected based on similarities in size (headcount and FTE), urban/suburban location, college strategic goals, and student population.

The project was completed in December, 2011, and, when appropriate, the College now:

- Assigns benchmarks to Board End Measures
- Assigns data and benchmarks to 3-Year Strategic Plan outcomes
- Assigns benchmarks to AQIP Portfolio data

For a more detailed illustration of how benchmarked data has been integrated into the Board End Measures, see 8R4.

Program comparisons are available through the WTCS Quality Review Process (QRP). The QRP database compares similar programs across WTCS institutions on measures such as retention, completion, job placement, and minority performance.

Outside the higher education community, the College uses Economic Modeling Specialists, Inc. (EMSI), which incorporates labor market

information from the Bureau of Labor Statistics and the Wisconsin Department of Workforce Development (DWD). Examples of comparative data from EMSI include district, regional, state, and national trends for occupational wages, employment forecasting, and employment demands. This tool also has a component used by students for labor market research/job search.

7P6: Aligning department and unit analysis of data and information with organizational goals for instructional and non-instructional programs and services

Unit and department level data is shared through the Unit Planning Process and dashboards. Analysis of this data is guided by three levels of goal-setting: the strategic goals of the College, the priorities set by larger units of the College, and the priorities of the individual school or work unit.

The Learner Success Hub is currently working with IRE to develop with program dashboards that will not only provide data useful to each program or department (i.e. course success, drops, at-risk students), but will also provide further guidance in using and analyzing data. For example, program directors will see up-to-date data on student drops, and the Learner Success Hub will have in place a system for how this data should be addressed and analyzed. A similar process is being developed for Student Development. Once integrated, these dashboards should improve both the quality and sharing of data analyses.

7P7: Timeliness, accuracy, reliability, and security of information systems and related processes

Technology Services (TS) ensures the effectiveness of the College's information system and related processes, including phone services, internet access, and the overall infrastructure network. TS supports servers, storage devices, security, academic technology and Learning Systems, PeopleSoft technical operations, the Cognos system, and a variety of supporting applications and technologies. In 2012, TS instituted a formal process for periodic security audits. Technology infrastructure

connects the College's network and a myriad of technology applications. In partnership with Madison College Learner Success, TS also co-leads a technology council to gather input from various groups around the College to assist in determining user needs.

The College maintains data integrity by utilizing an assortment of industry standard practices including limiting network access and deploying secure systems and firewalls. In addition, automated processes are in place to handle virus and spam scanning, and data back-up.

Institutional data is kept in a secure location and has nightly backups and off-site storage. Institutional data is refreshed nightly and is available for staff use through Cognos, the College's reporting system.

All incoming and outgoing email is automatically scanned for viruses prior to being delivered to user accounts. All of the automated processes are monitored, which helps to determine baseline network usage, assists in planning for future growth and drives upgrade plans.

Reliability is divided into two areas: hardware and software. The Data Center is responsible for hardware reliability and has an Uninterruptible Power System (UPS) for all computing equipment, a Halon fire suppression system, fire-rated storage units for backup media, and dual air-handling units. Access to the Data Center is computer controlled, with each individual having to pass through a minimum of two locked doors to enter. Within the Data Center, hardware reliability focuses on the servers. Critical servers employ multiple processors, multiple power sources and diverse routing of electrical power. Data storage is backed-up using an automated system and a Storage Area Network (SAN), which moves critical data from individual servers to a central storage appliance. Duplicate data is stored at a separate Madison College location.

Software reliability is built upon the implementation of the following software packages, which enable software to be kept up to date: McAfee ePolicy Orchestrator, Microsoft WSUS and Microsoft SCCM.

Data accuracy for the enterprise systems is the responsibility of trained and experienced users who collect and input the data. Data is entered through interactive panels and verified prior to submission. Critical fields require input, so data must be present prior to the entry of the information into the database. The system is then queried on a regular basis to verify the accuracy of the information. Exception reports indicate where the data does not logically conform to the field and are used to correct the data.

There are "check" systems and processes in place to help validate data reported to state and federal entities. For example, the College's new address verification software includes auditing features for naming conventions and cleansing of data.

Computer systems are normally available twenty-four hours per day, seven days per week, except during maintenance windows. Routine maintenance is scheduled in the evenings and weekends during low-use periods. Scheduled maintenance windows are communicated to end users through email and web messages.

Production systems and network monitoring is an automated process that notifies staff of failure or performance issues. Server monitoring is done to ensure an industry standard of 98% system availability. Hardware maintenance contracts are in place to ensure quick hardware repair with the ability to restore data due to a daily backup schedule.

Madison College uses industry standard practices in the management of confidentiality and data security. These practices include:

- Notification of policies to students and staff.
- Role-based security project implemented in 2012 that defines position-specific access to data. Also student social security numbers and birthdates are masked when staff do not need that information.
- Authentication and authorization to secure student web-based transactions.
- Unique login and password for each user.
- Identification of key personnel as the only individuals with access to software control parameters, database management, and security authorizations.

7R1: Measures of performance and effectiveness of the College’s systems for measuring effectiveness

The implementation of a Business Intelligence framework has improved measurement of performance and effectiveness of the College’s system for information and knowledge management. PeopleSoft and Cognos usage reports track activity on the system and provide statistics on the frequency of use of the type of information utilized. Usage reports include a list of users of a given data request over a specific period of time and the number of times a specific report is accessed within a set time frame.

Data from these monitoring reports is aggregated to provide a comprehensive picture of the way data is being used. In addition to the utilization statistics, the College also collects and analyzes feedback from IRE data users to determine improvements to the system.

To measure the performance and effectiveness of its systems, the College also intermittently tracks data usage. However, tracking data usage strains system performance, so the College turns on this monitoring only when needed for improvements and system upgrades.

7R2: Evidence that systems for Measuring Effectiveness meet organizational needs

IRE assesses stakeholder needs, monitors usage and effectiveness, and measures satisfaction. Stakeholder needs are determined by ongoing, college-wide voice-of-customer sessions for

each improvement project. Feedback from these sessions determines the scope of system changes, and usage is monitored through analysis of work requests and the frequency of usage of each data set. For example, usage data from 2011 showed that contact lists made up almost 50% of work requests. IRE created self-service access to contact lists through dashboards and portals. As a result, in 2012 the contact list requests made up only 21.2% of work requests.

Table 7.3 presents the results of the most recent IRE Satisfaction Survey, which addresses how well the department services the data needs of the College.

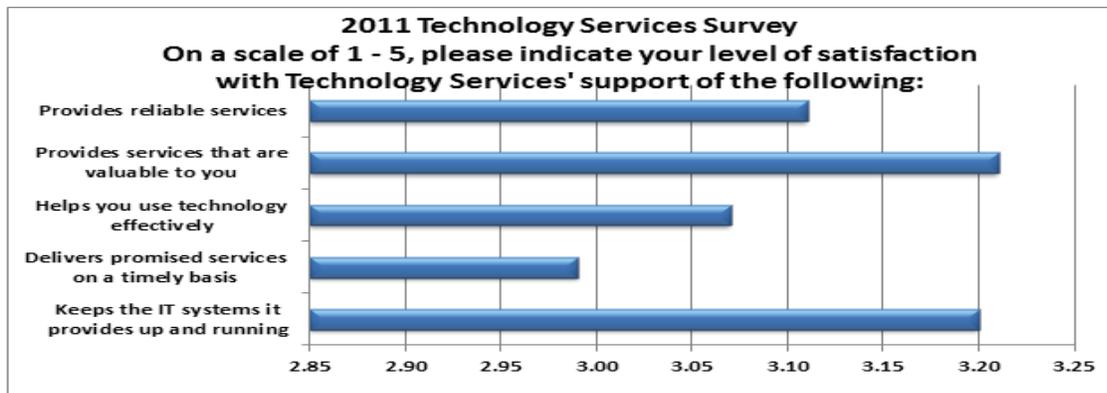
Table 7.3 - IRE Satisfaction Results

Question	% Agree Strongly or Agree
I got what I asked for.	99
The service/deliverable was provided in the agreed upon timeframe.	96
The service/deliverable met my expectations.	97
Overall, I am very satisfied.	98

These results speak to the overall satisfaction with IRE, timeliness with which data is provided to College staff and, indirectly, the quality of the data delivered.

Technology Services also administers an annual satisfaction survey. The results are below in Figure 7.2.

Figure 7.2 - Technology Services Satisfaction Survey Results



Reliability and keeping technology systems up and running stand out as the most effective services, while timeliness stand out as an area for improvement.

Finally, the PACE survey includes one question relevant to measuring effectiveness and information systems. The most recent PACE results for the criteria “extent to which information is shared within the institution,” show a statistically significant improvement from 2.71 to 2.87.

7R3: Comparative results for performance of processes for Measuring Effectiveness

Given the institution-specific nature of the measures, comparisons of performance of the College’s processes for measuring effectiveness are difficult. PACE provides a national norm for comparison purposes. The College’s 2011 score of 2.87 on the question “The extent to which information is appropriate shared within the College” is below the national norm, but does show improvement from 2008.

Comparisons are also done internally through data. For example, IRE compares results from the annual satisfaction survey. Results are shown below in Table 7.4.

Table 7.4 - Comparative results for IRE Satisfaction Survey

Question	% Agree Strongly or Agree	
	2011-2012	2010-2011
I got what I asked for.	99	99
The service/deliverable was provided in the agreed upon timeframe.	96	93
The service/deliverable met my expectations.	97	97
Overall, I am very satisfied.	98	97

Comparison data demonstrates that college staff are consistently satisfied with IRE’s performance in providing timely and useful information and data.

7I1: Recent improvements in Measuring Effectiveness

Unit Planning Process

This redesigned process combines annual planning, assessment, data and budgeting into a single process for work units at the College. The process has saved 2418 hours annually by streamlining the planning and assessment processes at the College. See response to 8P4 for additional diagrams on how the Unit Planning Process has streamlined college processes and removed redundancies.

Benchmarking Project

In response to the Systems Appraisal from 2009, the College selected benchmarking as an action project. See 7P5 for more in-depth discussion of this improvement.

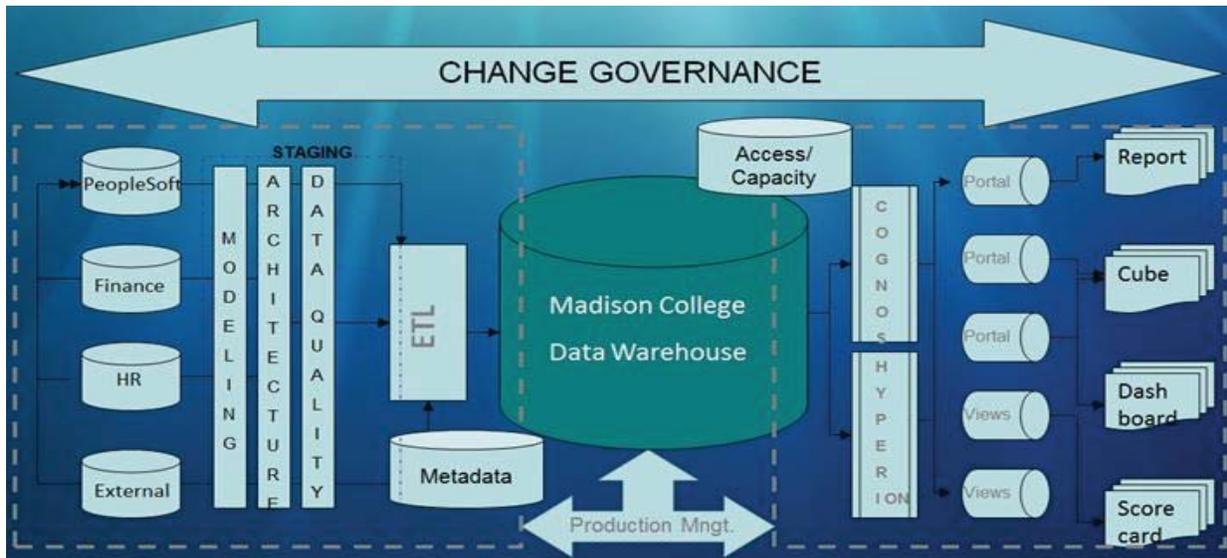
Customer Relations Management (CRM)

The College’s new CRM system provides a common platform for customer communication and interaction. CRM applications are designed to increase the effectiveness of staff members who interact with students or prospective students. For Madison College staff with a high degree of personal interaction, such as admissions recruiters and advisors, CRM extends these channels online by providing a framework for managing the interactions and transactions. CRM can also enable purchase of products or services on-line, and provide Web-based services and support, all personalized for the individual student.

Data Warehouse/SAFE Team

Over the last four years, the College has moved toward a data warehouse concept to store disparate data from multiple sources so the data may be integrated and accessed through a central interface. Figure 7.3 on page 99 shows the Business Intelligence vision for the College.

Figure 7.3- Madison College Business Intelligence Vision



In addition, the newly established SAFE team mitigates risk to the College by defining and managing appropriate levels of access to the data and systems necessary to perform specific jobs.

The College has made great strides in creating more systematic and comprehensive approaches to measuring effectiveness. The changes in data management, analysis and benchmarking demonstrate marked improvements in making data usage more comprehensive and systematic. Data integration with the Unit Planning Process also helps create a more systematic approach to data-driven decision-making.

Project teams use data for decision-making. PACE, CCSSE, and Noel Levitz SSI provide systematic survey feedback on college-wide issues. At the same time, project-based surveys are also completed prior to improvements to capture requirements and expectations and then again after the improvement is made for feedback. Targeted department surveys examine satisfaction on an annual basis to determine areas for improvement and to help set performance targets. Examples include the Technology Services user survey and the IRE satisfaction survey.

7I2: Selecting specific processes to improve and performance targets in Measuring Effectiveness

A culture of continuous improvement is created by setting global direction through long-term plans that help guide the work of the College. The AQIP process often serves as the mechanism for selecting processes in need of improvement within the direction set by the long-term plans, as illustrated by the recently completed action projects that improved unit planning and data benchmarking at the College.

All major improvements and projects at the College are completed by cross-functional teams representing different viewpoints from across work units. This helps ensure a range of input into improvements and performance targets.