

# Category 4 - Measurement, Analysis and Knowledge Management

## 4.1 Measurement and Analysis of Organizational Performance

### a. Performance Measurement

4.1a(1) The College selects data, information and knowledge assets based on their identification as key performance indicators and core measures. RCTC is implementing a Balanced Scorecard (BSC) approach to tracking performance and linking it to its strategic directions and goals in Figure 2.2-4. The BSC will include a series of interconnected dashboards aligning key performance indicators and core measures. The College continues to develop and deploy its use of the BSC (Figure 4.1-1). The College’s BSC has four perspectives (learning, financial, stakeholder and culture) aligned with eight key performance indicators. Each indicator has associated core measures (Figure 2.2-3). The BSC initiative supports one of the College’s AQIP “Vital Few” projects to better use data and information to make improvements and manage institutional effectiveness. The implementation of the balanced scorecard compliments and parallels the development of a system-wide Accountability Framework in development in the Office of the Chancellor.

The College as noted has identified eight key performance indicators (KPIs) as noted in Figures 2.1-3 and 2.2-3. The process to identify indicators included subgroups of internal and external stakeholders involved in the strategic planning process. In the 2004-05 strategic planning process, the College refined and reduced its KPIs from nine to eight. Core measures linked to each KPI were reaffirmed or modified. Indicators have been aligned to the Office of the Chancellor’s Accountability Framework. Additionally, interlocking and cascading dashboards (not depicted) have been established for every division represented on the Leadership Cabinet.

An improvement made this year was the creation of cabinet-level dashboards linked to college KPIs and core measures. For each indicator, a definition has been established and related core measures have been identified. These key performance indicators are aligned with college strategic directions and goals. College KPIs have been mapped to the Office of the Chancellor’s Accountability Framework. Additionally, definitions have been created for core measures linked to the KPIs. The College has charted performance and trend data for most measures. Another improvement currently in progress is the establishment of an intranet website for continuous improvement that will provide a portal to the BSC and other continuous improvement data and information. A final improvement this year is the charting of data for all KPIs and core measures; this includes targets and comparative data where available. Several core measures of “in development” and are not reported.

Over the course of the next year, a color-coding system will be established allowing the President and Cabinet members to quickly identify current performance for KPIs and core measures on their dashboards. The color-coding system will weight each core measure within a key performance indicator. Dashboard colors will be influenced by the performance of core measures as evidenced by results, trends, performance to target, and comparative benchmarks. Initially, there will be a college dashboard and one for each member of the Leadership Cabinet. This dashboard system will eventually cascade to all programs and departments in the next year. In this interim period, minimum data sets are being made available to programs and departments supporting self-assessment, continuous improvement planning and budgeting. This system will support a plan-do-check-act (PDCA) approach that allows the leader to drill down on areas impacting dashboard colors linked to overall performance.

A group of partner colleges have been identified to construct the technology infrastructure that will support the approach. Partners include two other Minnesota State Colleges and Universities (MnSCU) institutions and a couple of other institutions from across the nation who have, or are at various stages of development of a BSC. RCTC is also working with the Office of the Chancellor as they work to develop a BSC approach supporting the system’s Accountability Framework.

Data and information is in the process of being populated on a college intranet site in Power Point format. Faculty and staff can select key performance indicators and view compiled data and information for all core measures comprising this indicator. Departments and programs may capture other data and information as it relates to student learning, work systems/processes and other performance data. RCTC collects data from a number of sources. These include listening and learning surveys, system office data reports, formal reports (audits, etc.), the Minnesota State Colleges and Universities data warehouse, Integrated Student Records System (ISRS), and other sources. The MnSCU Information Technology Services Office has developed a portal architecture providing access to timely and reliable data and information via regional

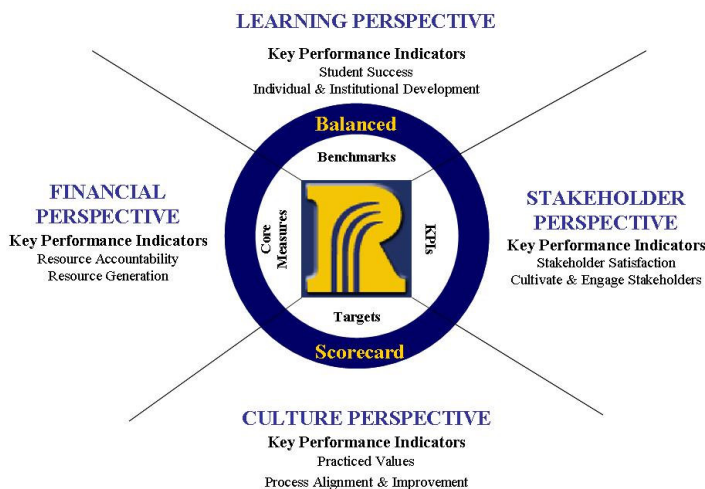


Figure 4.1-1 RCTC Balanced Scorecard

computing centers. RCTC faculty, staff, and administration can access aggregated data and information online regarding students, enrollment, facilities, finance, workforce and other categories (47 indicators in total) for current and prior years. Additionally, system-level data or data for other institutions can be accessed for comparative purposes.

**4.1a(2)** The College has access to a wide variety of comparative data. Comparative data is selected based upon numerous criteria. One such criterion is comparison to similar or like institutions. RCTC is one of eleven consolidated community and technical colleges in MnSCU. College performance is compared to aggregated data for this group as well as specific institutions comprising this institutional set. The College also can compare itself to other state universities in MnSCU. Given the University Center Rochester partnership, the campus is often more university-like, thus warranting a comparison to state universities.

The College is actively involved in two organizations who share their pursuit of continuous quality improvement. This includes CQIN (Campus Quality Improvement Network), which is a membership-base organization comprised of nearly fifty two-year institutions and a couple of four-year institutions located throughout the United States and committed to quality improvement. CQIN is currently engaged in a key performance indicators project whereby RCTC will provide indicator results to the CQIN BSC. The College will be able to compare its performance to the CQIN average and other subsets within the database.

The College is also part of AQIP (Academic Quality Improvement Process). These colleges and universities are in the Higher Learning Commission of the North Central Association and are members of a Baldrige-based, continuous quality improvement orientated program guiding continuing accreditation. AQIP serves as a natural benchmarking group of institutions. Each institution is required to share best practices through the posting of projects and project results on the AQIP website. A subset of AQIP institutions in Minnesota, of which RCTC is a member, is MnQIP (Minnesota Quality Improvement Process). Representatives from MnQIP member institutions meet regularly to share best practices.

Recently, RCTC has begun incorporating comparison data from the newly developed IPEDS Executive Peer Tool. This online tool from the National Center for Education Statistics, allows RCTC to compare itself to any other institution or group of institution. RCTC has identified several peer groups for comparison: all Minnesota consolidated community/technical colleges, a Baldrige Best Practices group, and a Vanguard Best Practices Group. RCTC is also exploring membership to the National Community College Benchmark Project (NCCBP), a data-sharing and peer-comparison network of community colleges from across the country.

Another source of benchmarking is through vendors providing nationally-normed surveys. For example, CCSSE and SSI provide the College with benchmark reports comparing college performance with all institutions that are members of CCSSE and SSI respectively. As mentioned in Category 3, RCTC is now part of a Minnesota Consortium to provide state-level CCCSE comparative data. Likewise, RCTC is leading the discussion with other MnSCU institutions using SSI to pool data in order to create state-level benchmarks. Comparative data, subsets of data, and data from multiple sources are used to determine the College’s relative performance versus other institutions and are used in setting performance targets for key performance indicators and core measures. Finally, RCTC is also represented in the RAQC (Rochester Area Quality Council). This is a group of Rochester area businesses and organizations that meet regularly to share quality processes and best practices. Membership includes such organizations as the Mayo Clinic, the Rochester Public Schools, Rochester Post Bulletin, Schmidt Printing, Pemstar, and the Rochester Area Math and Science Partnership. RCTC is committed to seeking out best practices, including those from non-education sources.

**b. Performance Analysis and Review**

**4.1b(1)** Figure 4.1-2 identifies a variety of performance review processes used by the College. Recent performance trends for college KPIs and core measures (Figure 2.1-3 and 2.2-4) are reported in Category 7. The College also tracks findings reported in feedback reports from The Higher Learning Commission and Malcolm Baldrige National Quality Award Program. An Improvement Matrix (Figure 1.1-2) summarizes major initiatives undertaken as a result of accreditation and quality award feedback reports.

Review Approach	Participants	Frequency
Landscape Analysis	Strategic Planning Committee, Leadership Council	Periodic
Baldrige Assessments	Diverse College constituencies	Annual
Academic Quality Improvement Program (AQIP) Updates	Institutional Effectiveness committee and Leadership Council	Annual
Leadership Performance Evaluations	Internal and external constituents	Annual
Integrated Planning Process Updates to Continuous Improvement Plans	Program/Department Leaders and Leadership council	Minimally 2 times per year
Integrated Planning Process	All	Annual
Balanced Scorecard	All	Continuous
Organizational Leadership and Shared Governance Meetings	Diverse participants	Weekly, Monthly, etc.
Listening and Learning Methods	Diverse student and Stakeholders	Ongoing
Process Reviews	Diverse audiences	Ongoing

**Figure 4.1-2 Leadership Reviews**

Another approach used to support performance review and improvement activities, has been the use of at-a-glance, one-page research summaries detailing major findings. These executive summaries highlight gaps between expectations of key student and stakeholder populations and levels of satisfaction. The resulting gap provides a means for focusing the College on requirements most important and the largest gaps in satisfaction or performance. An additional approach used by the College has been the use of Task Forces or “Rapid Response” Teams (RRT). These teams form around problem or improvement areas and strategize on short- and long-term solutions. One of the widest gap areas identified by students is the lack of early warning systems to advise them of their academic performance. A rapid response team suggested the creation of planned events on the academic calendar called “Student Success Days.” This has been accomplished and two Student Success Days were conducted in the 2003-04 and 2004-05 academic years.

Key performance indicator and core measure data and information are reviewed continuously at Leadership Cabinet and Council meetings. The College has been an active representative on the MnSCU Accountability Framework Task Force. These efforts provide for constant monitoring of data and information and changes in the environment or landscape which may create cause for action. As the performance measurement system is new and the supportive architecture is under construction, no other formal reviews supporting change processes have been established. Once established, changes in dashboard colors or factors affecting the weighting and mathematical algorithms will be determined.

RCTC actively participates in monthly meetings with representatives from other MnSCU institutions’ Offices of Institutional Research. These meetings are organized by the Office of the Chancellor, Academic and Student Affairs Division, Research, Planning and Academic Programs. These meetings serve to provide feedback on MnSCU-wide institutional research developments, share best practices, and promote quality and consistency in institutional data collection and reporting practices.

**4.1b(2)** Various analyses are done to support reviews including: level and trend reviews via Balanced scorecard; gap analysis comparing importance to satisfaction levels; performance to target; performance compared to system averages for like institutions, services or programs; and comparisons to national norms or comparative measures. Data from these analyses flow into the Strategic Planning Process (SPP) and Integrated Planning Processes (IPP).

The College has also developed a “Dimensions of Assessment” model (Figure 4.2-1) that supports continuous improvement through diverse analyses. This model focuses on assessment of staff development; course outcomes; program, department and division reviews; landscape analysis; and institutional assessment. At the staff development level, assessments are completed after staff development events to determine effectiveness and satisfaction with topics and the

overall day. Course assessments are conducted by college faculty using diverse approaches. Faculty administers course evaluations using Student Evaluation of Teaching forms. Traditionally, these course evaluations were administered in class, but can now be offered online. Program, department and divisional analyses include curriculum review, program review, instructional cost studies, and continuous improvement planning.

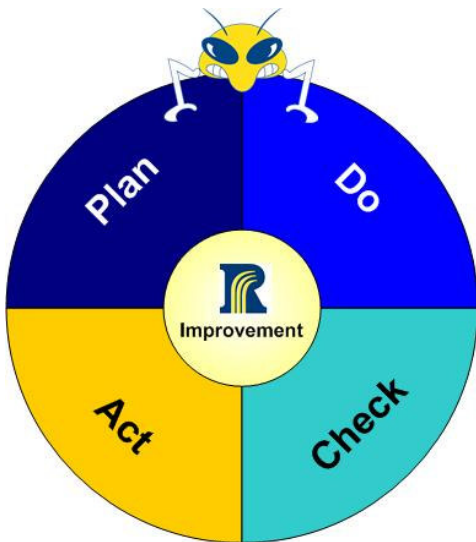
Supporting course, program and departmental assessment is the College’s use of *eLumen*. This software provides for a common standards-based evaluation method to document and report student learning (often across multiple courses) while balancing curricular management and academic freedom for the faculty. This approach will be further detailed in 6.1a(1). Each program or department area has begun mapping their key work processes and identifying process measures.

As specified in category two, a comprehensive landscape analysis is facilitated as part of the SPP/IPP (Figure 2.1-1). Institutional assessment is completed via accreditation, quality assessments, legislative and system audits, and other system analyses. Assessments are also linked to key performance indicators and core measures on the College’s BSC.



**Figure 4.2-1 Innovative Design Planning: Dimensions of Assessment**

RCTC has adopted a Plan-Do-Check-Act Cycle (PDCA) (Figure 4.2-2) that guides the College’s continuous improvement activities. This is embedded into the Integrated Planning Process. Rapid response teams are also used to facilitate quick response approaches to make short-term improvements while longer-term solutions are studied.



**Figure 4.2-2 Plan-Do-Check-Act Cycle**

RCTC is developing an online Balance Scorecard Dashboard for the RCTC Intranet. The BSC features color-coded assessment of college units with drill-downs to individual indicators. Indicators are populated with specific comparative data to help define target performance (See 4.1a(1)).

The results of performance analyses and reviews are communicated in a variety of ways to faculty, staff, students and other stakeholders. Findings of research and other analyses are shared through the organizational leadership/shared governance system as information items. The weekly newsletter *College Crossings* features “Supalla’s Scribblings” and “Weekly Market Facts.”

“Supalla’s Scribblings” is a weekly column by the president informing faculty and staff of timely news, information, data and other information. “Weekly Market Facts” provide faculty and staff highlights from local, regional, and national college surveys and other sources, as well as updates on college performance in a wide variety of areas. Additionally, two-page executive summaries or “Data Briefs” of college research studies are included as attachments to *College Crossings*. Data and information are also available through the College intranet site. Email, Staff Development Day, and “State of the College” presentations, and RCTC (Rumor Control Through Communications), and Forums are some other sharing approaches. Data and information on college performance are shared by college leadership at college and program advisory committees, department and team meetings, and in college publications like *The Stinger* and the monthly student newspaper *The Echo*. Data and information are currently made available through content embedded in the Strategic Management Software, the MnSCU ITS Data Management site, and in the immediate future via the Balanced Scorecard and dashboards.

## 4.2 Information and Knowledge Management

### a. Data and Information Availability

**4.2a(1)** All faculty and staff have access to the College intranet site where data and information is located. Workstations are available for each faculty and staff member giving them access to college websites and electronic publications. Faculty and staff can use MnSCU Information Technology Services websites that allow people to generate college reports on performance for a wide range of categories. Faculty and staff can also request customized reports from staff members who have access privileges to the Integrated Student Records System and the replicated data at regional data warehouses.

**4.2a(2)** The College has established work station standards that ensure hardware and software is reliable and current. Currently 99% of all full-time faculty and staff are at standard.

*Network Passwords.* Network passwords expire every 90 days. Faculty and staff are warned to change their password when six logins remain. This coincides with the general MnSCU timeline for changing passwords. Email passwords do not expire and do not change to coincide with Network passwords.

*Workstation Security.* A screen saver is activated after a system is idle for 15 minutes. Network passwords are required to de-activate the screen saver. This is a preventative measure limiting access by non-users if faculty and staff are away from their workstation.

*Virus Protection.* All computers connected to the Network must have current virus protection installed and activated. Workstations with the standard image automatically receive virus software updates as they become available, usually on a weekly basis.

*Network Availability.* The College server/network is not available between the hours of 12:00 midnight and 7:00 am for maintenance and backup. Otherwise, faculty and staff have password-protected access to email and their profile from remote locations.

*File/Document Management.* Files/documents stored on the hard drive are the sole responsibility of the user. Users are requested to not store files on their desktop, and shortcuts are preferred, as they don't slow the login process. Information Technology Services does not transfer, copy, etc., any files from the hard drive. Users are expected to back up files stored on the local computer to floppies or CDs. All users have a home directory on the network that will not be deleted during upgrades or transfers. The files in the home directory are backed up daily. Email information is stored on the College server so this information will not be affected by changes made during an upgrade or replacement process.

The College Help Desk provides faculty and staff with a support mechanism to report and fix errors. An eight-step process has been established to assist staff and ensure responsiveness to problems.

Faculty and staff are surveyed each year in the Campus Quality Survey and asked to rate hardware and software user friendliness. Since 2000, ratings of user-friendliness have increased from a low of 3.2 to a current level of 3.6 (Spring 2004) on a 1 to 5 scale, with 5 being very satisfied.

**4.2a(3)** RCTC has adopted workstation and software standards for keeping the technology infrastructure current with educational service needs and directions. Common software packages are updated on cycles linked to software releases (i.e., Microsoft Office, Windows, Groupwise, etc.). Users of specialized software are consulted and make recommendations and requests for upgrades as warranted.

The College has an established procedure for the installation of new software. Only software approved and installed by Information Technology Services will be supported and/or transferred when systems are upgraded or repaired. Any software program that is not approved and does not have a license on file with the IT department will be removed. To get software on the "approved" list, the faculty and staff must provide Information Technology Services with a copy of the software, license information, and purchase information. Upon receipt of these items the software is tested to ensure it does not conflict with network applications or other software installed on college systems.

#### **b. Organizational Knowledge Management**

**4.2b** A number of approaches are utilized to support the development and transfer of organizational knowledge. The first is through negotiated Staff Development Day functions. Each year, the Staff Development Committee plans at least two Staff Development Days. These events combine topical workshops, showcase sessions of colleagues' best practices, activities linked to college strategic directions, health and safety and other areas of interest. These sessions promote skill development and sharing across the institution. The Center for Teaching and Learning (CTL) is another mechanism whereby faculty can come together for the purposes of attending educational workshops and the sharing of teaching and learning practices. Fifth Tuesday events known as "Two on Tuesdays" are also utilized as forums for showcasing new ideas, technology and best practices within the College. RCTC faculty also takes part in the UCR Faculty Lecture Series, showcasing RCTC and UCR faculty research. This coming year the Southeastern Minnesota State College's are planning a regional staff development day.

Institutional research data is managed by RCTC's Director of Institutional Research. Institution-wide survey administration and dissemination of results are handled through this office. At the time of this application, RCTC is waiting for results from three recently administered surveys: CCSSE, SSI, and

CQS. The results from these surveys and other surveys administered in the past year are shared with faculty and staff through "Data Briefs" attached to the weekly *College Crossings*. Significant findings are highlighted in "Weekly Market Facts." A full copy of results will be made available through the online Balanced Scorecard and dashboards. Faculty and staff will be encouraged to cite specific data from these and other surveys and data sources in their continuous improvement plans.

#### **c. Data, Information and Knowledge Quality**

**4.2c** Consistency in data extraction and calculation is accomplished through the use of MnSCU's ITS Data Management web pages, where 47 standard RCTC and system-wide reports are accessible for multiple fiscal years. RCTC's Director of Institutional Research is also authoring an *ISRS Recipe Book* in partnership with Directors of Institutional Research from other MnSCU institutions to share ISRS data extraction and calculation methods. Monthly updates to the book are shared through the MnSCU Institutional Research listserv.

Timeliness is ensured by data uploads to ISRS and the data warehouse in regional computing centers. Data is nearly real-time with only a short period of time lapsing between entry and access to current information. Again, security privileges are assigned based on the work performed and need basis. Reliability and accuracy is managed via adherence to data integrity standards set by the Minnesota State Colleges and Universities System Office of Information Technology and Office of Research.

Identification, sharing, and implementation of best practices are accomplished through a variety of methods. Venues for information sharing include monthly meetings of MnSCU Directors of Institutional Research, MnQIP, the institutional research listserv, and other regional and national conferences (e.g., AIRUM, ASHE, HLC, Learning College Summit).

Data, information and organizational knowledge properties are ensured through a combination of approaches. Integrity is maintained by controlling the level of access privileges of faculty and staff. Access is given to those individuals with functional responsibilities for data entry or managing key systems and processes at the College. Accepted procedures and standards are adhered to in the entry and use of data and information systems.

Higher Learning Commission and Baldrige Opportunities for Improvement	Actions Undertaken Since 2004
The College has not collected consistent and verifiable data to use in decision-making. Failure to provide quality data will result in lack of credibility if inappropriate or inconsistent decisions are made.	Identified the Assessment of Institutional Effectiveness as one of its AQIP Vital Few Projects. This includes the Assessment of Institutional Effectiveness and the Assessment of Student Learning. The college has launched a significant initiative in this area focused on the adoption of a balanced scorecard approach for performance management. The college has also hired a Director of Institutional Research.
The College has not determined how strategic planning efforts will be linked to decision-making, particularly resource allocation.	The College has adopted an Integrated Planning Process linking self-assessment, continuous improvement planning and budgeting aligned to college strategic directions and goals. This process has undergone several improvement cycles.
Although the College provides for professional development opportunities for faculty and staff and acknowledges high performance, for example, through letters and notes in personnel files, it has not developed a human resources plan that links individual performance, professional development and reward.	The College identified human resources planning as one of the college's AQIP Vital Few Projects. An Employee Relations Committee with subcommittee's including Staff Development, Affirmative Action, and Employee Recognition has been formed. The College is taking a team to the Continuous Quality Improvement Network (CQIN) Summer Institute in July 2005 to focus on Human Resources Planning.
The College has not developed and deployed a formal process for the systematic evaluation and improvement of its academic partnerships.	The College with the UCR partners has identified key performance indicators by which to measure and evaluate the partnership.
There is no evidence of systematically measuring or evaluating learner program outcomes or competencies.	The College has adopted the Assessment of Student Learning as the third of its AQIP Vital Few projects. Two staff members have been given release time the past several years to guide this initiative. The College has piloted and deployed the use of eLumen, a software supporting a standards-based model to assessing student learning.
How RCTC's strategic directions, goals, and key performance indicators (KPIs) balance short- and longer-term challenges and opportunities. Nor is it clear that strategic directions, goals, and KPIs address all of RCTC's strategic challenges	The College underwent a process to link goals with key performance measures and core strategies with identified strategic challenges as part of the 2004 Strategic Planning Process as highlighted in Figures 2.1-4 and 2.2-2.
While RCTC uses a variety of approaches and methods to understand and address the needs and expectations of faculty, staff, and students in a systematic manner, there is little evidence of activity to engage RCTC's remaining stakeholder groups.	The College designed and administered the Survey of Stakeholders in the fall of 2004. This survey included populations identified in Figure 3.1-3 and 3.1-4.
RCTC indicates its sources for comparative data, it is unclear how the data is used to design or improve operational and strategic decision making and innovation and to understand performance. Nor is it clear if a systematic approach is in place to obtain and use comparisons to look at data from RCTC's direct competitors or comparable institutions.	The College has identified peer institutions in MnSCU and nationally. The national group includes peer institutions that are fellow members of the Continuous Quality Improvement Network (CQIN) and are dedicated to continuous quality principles and practices. This group also includes Vanguard institutions of the American Association of Community Colleges (AACC).
How RCTC incorporates input from students, faculty, staff, stakeholders, suppliers, and partners to determine key learning-centered process requirements.	The College performs gap analysis comparing levels of importance to satisfaction ratings to establish what is most important and where the greatest opportunities for improvement exist.
Many of RCTC's processes do not appear to be systematic; therefore, it is unclear how RCTC can ensure these processes will be repeated consistently, or if they will be evaluated for learning and improvement.	RCTC has undertaken a PDCA approach on several value creation and key support processes and associated core processes and made improvements. These include assessment of student learning, academic program/department review, and strategic planning.

**Figure 4.2-3 – Improvement Matrix**