The Higher Learning Commission Action Project Directory

Northern Michigan University: A Process for Managing NMU's Strategic, Operational and Resource Performance

Project Details

Title	A Process for Managing NMU's Strategic, Operational and Resource Performance	**Status**	IN UPDATE
Category	7-Measuring Effectiveness	**Updated**	
Timeline		**Reviewed**	
Planned Project Kickoff	10-15-2009	**Created**	01-07-2010
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1: **Describe the past year's accomplishments and the current status of this Action Project:**

A: A 2008 "Benchmarking the Road Map" Action Project (http://webb.nmu.edu/aqip/SiteSections/ActionProjects /Roadmap/RoadMapIntro.shtml) outlined a way to systematically document the current status of goals within the NMU Road Map to 2015. Although we created a very large number of potential metrics and benchmarks, we understood that without crucial follow-on planning to develop a delivery mechanism and infrastructure to support the planning paradigm and monitoring functions, successful Road Map implementation was unlikely. In addition, we had existing decision-support tools that have been evolving and becoming more sophisticated, but perhaps underutilized by decision-makers. This 2009 Action Project carries on to develop the operational details needed to move the Road Map schematic into a functioning system and leverage existing information in order to enhance planning and decision making by administration, staff, and faculty. This goal would be achieved through the development and implementation of an integrated Knowledge Management System (KMS) that would permit ad hoc analysis and reporting, with ready access to NMU's documented resources: external data (HEIDI and IPEDS); internal data (Banner and other); existing database software tools; content management system and tools to create internal reports.

The KMS Action Project Team began its work during the 2009 fall semester by creating a plan to organize their efforts into six sections: Definitions, Framework, Metrics & Benchmarks, Initial Implementation, Maintenance Process, and User Manual. An early order of business was to agree upon definitions for terms judged fundamental to the Action Project. The following terms were discussed, illustrated with examples, and adopted: a metric is something we can measure; a benchmark is a comparative value for a metric, which can be internal or external; a target is a goal value for a metric; an external value would typically come from our peer institutions; an internal value would typically be temporal in nature, i.e. comparing one year to another. For example, Average FYES per FTETF at NMU in a given year is a metric; Average FYES per FTETF at NMU in 2009 was 20.3 versus 20.7 in 2008 is an internal benchmark; FYES per FTETF at NMU is to be within 10% of our 9 peers in 2015 is an external target.

INVENTORY EXISTING PERFORMANCE INFORMATION. During the fall semester, the KMS Team conducted this inventory from internal and external sources and reviewed its maintenance process. It found that the Administrative Information Technology (AdIT) Report Services unit aids administrative and academic staff by training users to create their own Cognos reports or by programming and storing database queries to meet specific user requests. Many of the existing reports were determined to be text- and number-based, limited to the programmed scale or scope, or they existed in isolation from one another. While they are quite valuable and used for operational or short-term strategic decision-making, these user reports represent the first level of knowledge management. As described in the 2010 Systems Portfolio, NMU's investment in Cognos reporting tools has made it possible for AdIT and the Admissions Office to use Banner data to create dashboards of multidimensional reporting technology (cubes). Cubes have been created for analyzing HEIDI data, student retention, and are being created for finance cubes for deans to analyze their budget data. These cubes are part of NMU's knowledge management evolution to intermediate levels. It was determined that NMU lacked the software tools for higher level knowledge management, i.e. system-generated integrated internal and external data, executive graphical dashboards and

scorecards. The remainder of the Action Project tasks addressed these multiple layers of KMS somewhat concurrently as they build upon one another and use common databases.

CONCEPTUAL FRAMEWORK. The conceptual framework developed by the KMS Team, intended to be an overarching statement to guide the evolution of the KMS, was completed by December 15. This framework is organized around four perspectives: stakeholders (whose needs must we serve), core processes (in which internal processes must we excel), learning and growth (how must we learn and innovate) and financial (what objectives must we accomplish). Each perspective is driven by a number of considerations, each with distinct metrics. For example, the Financial perspective includes Financial Sustainability, Cost Effective Operations and Affordable Programs as the financial objectives. In turn, Affordable Programs uses metrics of tuition and fees, room and board, tuition discounting and financial aid, all as compared to peers. Section 2: Conceptual Framework of the KMS Team Final Report contains the framework details. The report is posted to the NMU AQIP website at http://webb.nmu.edu/aqip/SiteSections/ActionProjects/ProcessforManagingNMUsStrategic/ProcessForManaging-Intro.shtml.

KEY PERFORMANCE INDICATORS. The KMS Team chose four broad categories of information for the KMS: Trend, Benchmarking, Environmental Scan and NMU Profile. Trend Information is NMU historical data, available on Banner, that monitors areas of primary importance and identified by the framework, Road Map and AQIP Systems Portfolio and would make annual reporting easier and more effective. Trend information includes series of graphs/charts similar to those presented in the "Benchmark" action project and focuses on operational, strategic, and financial goals. Benchmarking Information compares NMU to peers over time using external databases and focuses on operational, strategic and financial goals. Environmental Scan Information shows trends in population information for recruiting areas and market shares of peers, and regional business information; this external information assists in strategy development. Much of the NMU Profile Information exists in Institutional Research; the organizational structure of this descriptive data may be similar to the Systems Portfolio or the Voluntary System of Accountability (VSA), which NMU has joined. An improvement in this data is its planned currency, i.e. when data changes, a dynamically-generated website reflects the change. Overall, the KMS Team evaluated a large number of possible metrics and recommends that the KMS initially implement the 25 Key Performance Indicators (KPI) for Trend Information: enrollment (7 metrics), student success (5 metrics), financial (10 metrics, with 20 sub-metrics) and human resources (3 metrics). The first draft for these measures was completed in January, the second version completed in April, is documented in "Section 3: Metrics and Targets" of the KMS Team Final Report, posted to the NMU AQIP website. This task is ongoing while KPIs are revised and finalized.

KMS SOFTWARE PLATFORM. The look and feel of the KMS is dependent upon the software; since it was understood that NMU would purchase a KMS software tool rather than building this system in-house from scratch, the KMS Team evaluated and selected a KMS product before doing a detailed design. By the end of December, four possible software tools to support KMS were identified for evaluation: iDashboard, Corda CenterView, Cognos Go Dashboard and Cognos Metrics Studio. Software evaluation occurred between January and March; the KMS Team conducted on-site evaluations of iDashboard and Metrics Studio. In March, Cognos Metrics Studio was selected because it most closely met the software requirements – interface with existing databases, ease of use, functionality and drill down capability. NMU has a base installation of Cognos and this became the deciding factor in choosing the Cognos Metrics Studio software. The software was installed by the end of April, with vendor training and consulting in mid June. NMU now possessed the suite of KMS software to produce structured-query reports, semi-structured ad hoc reports, multidimensional cubes and a KPI dashboard. A prototype of the KPI dashboard user interface and menu navigation was designed during the summer, based upon the earlier-identified Trend Information metrics. A tentative workflow for this segment of the KPI dashboard is documented in "Section 4: Implementation" of the KMS Team Final Report with screen captures to depict the experience of a logged on user who has navigated to the NMU Metrics site. The KMS Team is aware this preview is not the finished Action Project product because it is neither operational nor vetted with all users. However, building the user interface prototype gave AdIT some of the needed training to develop Metrics Studio modules and the team a better sense of what the software could accomplish.

AD HOC TOOLS. As stated in the Action Project description, a key design requirement for the KMS is to provide

users with tools for dynamic data exploration as opposed to relying on standard reports. There are important instances when planners will want answers to questions for which they have greater control over input parameters. An important project milestone was achieved during the 2010 winter semester with the launch of an online tool for academic administrators. Using the existing Cognos tools, a semi-structured report was created by AdIT after extensive discussions within the Academic Affairs Division about the information needed to manage course offerings. The report differs from earlier AdIT-built reports in that it possesses enormous flexibility; literally thousands of parameter combinations can be entered into the system to obtain specific information. The KMS Committee Final Report illustrates how an administrator can now drill down to dynamically develop a course enrollment history for Fall semester > Upper division courses > web courses > offered by the Clinical Laboratory Sciences Department. In addition, AdIT created an accessible database of all courses offered since 2004; each record contains 41 fields. With this database it is possible to use software tools, such as pivot tables, to explore a diverse range of inquiries. The KMS Team believes these two accomplishments successfully demonstrate new ad-hoc decision-making tools.

MAINTENANCE PROCESS DEVELOPMENT. In the spring, the processes for monitoring, analyzing and communicating performance were addressed. As part of this task, the KMS Team developed a hierarchy and overall guidelines that describe when and how changes are made in strategy, operations, and resource management to gain alignment with mission and vision. The KMS Team recommends that the operational responsibility for the KMS reside with AdIT and suggest this process be augmented as follows:

1. AdIT create a data advisory group consisting of staff from AdIT as well as representatives from beyond the division to prioritize requests for additional metrics, benchmarks or targets, to recommend hardware or software upgrades and to recommend changes to the "look and feel" of the KMS;
2. AdIT provide orientation training on the system to new users and periodic refresher courses for all users, during which participant recommendations for improving the system are obtained;
3. AdIT incorporate into its overall assessment plan a periodic (but not less frequently than bi-annually) assessment of the KMS in terms of comparability with peer institutions and satisfaction of NMU users of the system.

It is further recommended that the above mentioned data advisory group represent Academic Affairs (two academic deans, two academic department heads, and Associate VP of Institutional Research) and Finance & Administration (Budget Office and Auxiliary Services representatives). Members from each division will be selected by the corresponding Vice President.

2: **Describe how the institution involved people in work on this Action Project:**

A: The KMS Team reflected the decision-making role of top leadership and the technology support role of Administrative Information Technology (AdIT): Director of AdIT Support/Consulting Services (Action Project Leader), two Senior Programmers responsible for student and financial systems, Associate Vice President of Institutional Research, Vice President of Finance and Administration, Special Projects Consultant to President, Dean of College of Arts and Sciences, and the NMU AQIP Liaison. All members carry long-term knowledge of NMU, with most being 20+ year employees. The Special Projects Consultant has had an administrative career at NMU as Vice President of Finance and Administration and Interim President; he played a major role in drafting the KMS metrics. The KMS Team had a broad and deep understanding of the information that has been used for decision-making in the past, as well as an awareness of information that would be helpful if it were available. As stated in "next steps," it is time to engage others in the new KMS environment.

3: **Describe your planned next steps for this Action Project:**

A: We understand the limitations of using ourselves as the sole performance benchmark and we will move to establish targets that reflect the world outside Northern Michigan University. Our reasons for focusing on trend information in this Action Project were purely pragmatic. We now need to inform our various planning processes about the KMS and provide a mechanism for them to establish benchmarks and targets. It is important that the various divisions throughout the University have ownership in the system. Central to that sense of ownership is the assumption that

users will have a say in what we measure, how we establish comparative data and what goals we set. Our primary goal is to create the system that will support these choices. There are a variety of audiences who need access to this information, including a) the executive management team and Board of Trustees, b) deans and department heads, c) the NMU Board of Trustees and d) members of the Educational Policy Committee and bargaining councils. The recommended data advisory board must be implemented. The Key Performance Indicators should be mapped to the Road Map benchmarks and external reporting requirements, and finalized by the data advisory board.

The KMS dashboard design must be finalized, the system fleshed out from the prototype and tested by respective users. NMU should conduct user training assessment on knowledge management and develop appropriate training mechanisms, i.e. workshops, user manuals, peer discussions. Focus has been on the logon accessible, internal use metrics; a system must be developed that can deliver dynamic information from the KMS to all NMU stakeholders and the general public via the Content Management System of the NMU public website.

4: **Describe any "effective practice(s)" that resulted from your work on this Action Project:**

A: Beginning with a definition phase was particularly useful. The terms "benchmarks," "targets" and "metrics" were not used consistently so examples were identified and discussed. By agreeing upon the key term definitions and clear examples, the KMS Team reduced time lost on misunderstandings.

The team delineated the types of information the system would support and the sources of that information. While the KMS will incorporate all identified types of data, we pragmatically gave priority to the first category, Trend Information. NMU has a wealth of data that can be put in a time series format which will permit us to quickly share a lot of information with planners and simultaneously incorporate a default benchmark. In other words, the KMS Team chose to initially maximize short-term results to increase campus interest and adoption.

5: **What challenges, if any, are you still facing in regards to this Action Project? This is an opportunity to get constructive, actionable feedback and advice from our review process. Use this question to specify where your blocks, gaps, sticking points, or problems are. If you have already fashioned strategies to deal with any challenge you face, share both the challenge and your strategy for meeting it. If you would like to discuss the possibility of AQIP providing you help beyond the review process, explain your need(s) and tell us whom to contact and when:**

A: While the timeframe for the KMS project was perhaps overly ambitious, a lot of work was accomplished: definitions and a framework were agreed upon, an inventory completed of existing tools, successful completion of two ad hoc tools, selection and installation of a dashboard KPI software tool, and a KPI user interface constructed. However, we had to accept the realistic view that we would not be able to address every element at the outset. Instead, as a strategy, we attempted to provide sufficient guidelines for effective choice of metrics and their associated benchmarks. Taking the time to identify clear priorities, kept the framework and project scope from growing out of control - a common occurrence with large information systems development. It was realized that more objectives could have been accomplished had it been a two-year Action Project; therefore, a new Action Project is being proposed that will continue the work on the KMS. Ultimately, it is the goal to have a Knowledge Management System able to access internal data collected by the NMU Banner-based systems and internal informal data, images and documents, and combine them with imported external data.