



SUNGARD HIGHER EDUCATION

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**Muskegon Community
College**

Information Technology Strategic Plan Refresh 2009

February 23, 2009

Introduction

As a component of Muskegon Community College's (MCC) strategic planning cycle, annual updates are critical to the successful implementation of the institutional, functional and departmental strategic plans and provide a "check in" point for continuous improvement and alignment with current college strategic direction and goals.

The Office of Information Technology (OIT) uses the IT strategic plan to guide efforts in its annual tactical plan and budget planning cycle. The 2009 annual update is important to the successful implementation of the strategic initiatives laid forth in the 2007-2010 IT strategic plan, as approved by the planning committee and campus leaders. **Appendix A** lists the individuals who participated in the planning review process.

Executive Summary

The end of the year offers an opportunity to review the IT Strategic Plan accomplishments for 2008 and plans for 2009. In January / February 2009, approximate 15 members of the campus community attended two half-day strategic planning and accomplishment sessions where facilitated discussions identified departmental and institutional accomplishments and plans supporting the continued successful implementation of the IT Strategic Plan. Within the last year, OIT carried out the following initiatives:

- Went live with the Datatel payroll module, WebAdvisor, and ActiveApply for the Admissions office.
- Upgraded Blackboard to version 8 and implemented many improvements such as automation between Datatel and Blackboard, increased personalized training for faculty, access to video and audio capabilities for distance learning, and automated course creation.
- 200 new PCs were deployed in the Library and to other labs and the equipment reclaimed were repurposed to other areas of the college. The Student One-Stop Kiosks were deployed and processes were put in place to secure and manage these new resources. A focus on using the tools to create secure and flexible lab environments allowed for multiple operating systems to be used on each machine and now protect files and systems from inappropriate usage.

A sampling of OIT initiatives for 2009 includes

- Continued implementation of unused Datatel modules as well as significant upgrades to currently installed apps such as ActiveApply.
- Work with Academic Affairs to assess lab and classroom technology utilization to more effectively place and utilize the resources. This will result in cost savings through the use of new technologies, increased automation, and more effective lab time utilization that will reduce the number of workstations required. It will also allow for more focused technology upgrades to accommodate the special needs of certain academic areas.
- Implementation of training plans to address the specific needs of the Datatel area as well as the more general productivity tools deployed across the college.

As these examples show, there are many current and planned activities for the IT Strategic Plan. The key to continued successful implementation of the Plan is sustained coordination, communication, and collaboration across MCC. To this end, the next IT Strategic Plan Update will specifically include a reflection of the strategic planning efforts and next steps. This will include annual comparisons and summaries of:

- How many Strategic Plan action items, compared to last year, have been completed, as well as how many are in progress, or have not yet been started;
- How many Strategic Plan actions, compared to last year, are moving in the desired direction, show no progress, or are moving in the opposite direction; and,
- Identification of new Strategic Plan goals, priorities, and action items during the next academic year.

Technology Needs Assessment Executive Summary

Introduction

In October of 2008, MCC and SunGard Higher Education launched a project to assess the current level of technology integration in MCC's teaching, learning, and daily operations. The TNA data is summarized below, but a full report can be found in **Appendix B**.

The Technology Needs Assessment (TNA) was conducted utilizing an online survey tool. The survey, in the form of an email invitation, was delivered to 5,349 MCC professional staff, support staff, full-time and part-time faculty as well as students. A total of 680 responses were received for an overall response rate of 13%. The response rates varied by category as illustrated by the graphic below:

Category	Number of responses	Response Rate (percentage of total)
Full-Time Faculty	73	76%
Adjunct Faculty	52	14%
Staff	93	65%
Students	462	10%

Key Findings

1. **MCC students fall below the national average in ownership of computers and access to the internet.** Increases in use of technology for teaching and learning should factor in the needs of the 16% of MCC students who report computer and Internet access problems.
2. **Most faculty and staff agree that integrating technology into the daily operation of the college and into teaching and learning processes are very important.** They are eager to improve their knowledge and use of new technology in both daily operations and teaching and learning.
3. **Faculty and Staff see lack of training and time to participate in training as a major factor in discouraging their adoption of more technology.** Providing a rich offering of training in different modes that make it available at convenient times for faculty and staff may encourage their continued adoption of new technologies.
4. **Faculty and Staff training preferences are nearly identical.** Training materials created for basic tool software, ERP training, and web-based activity training can be used to meet the needs of both groups.

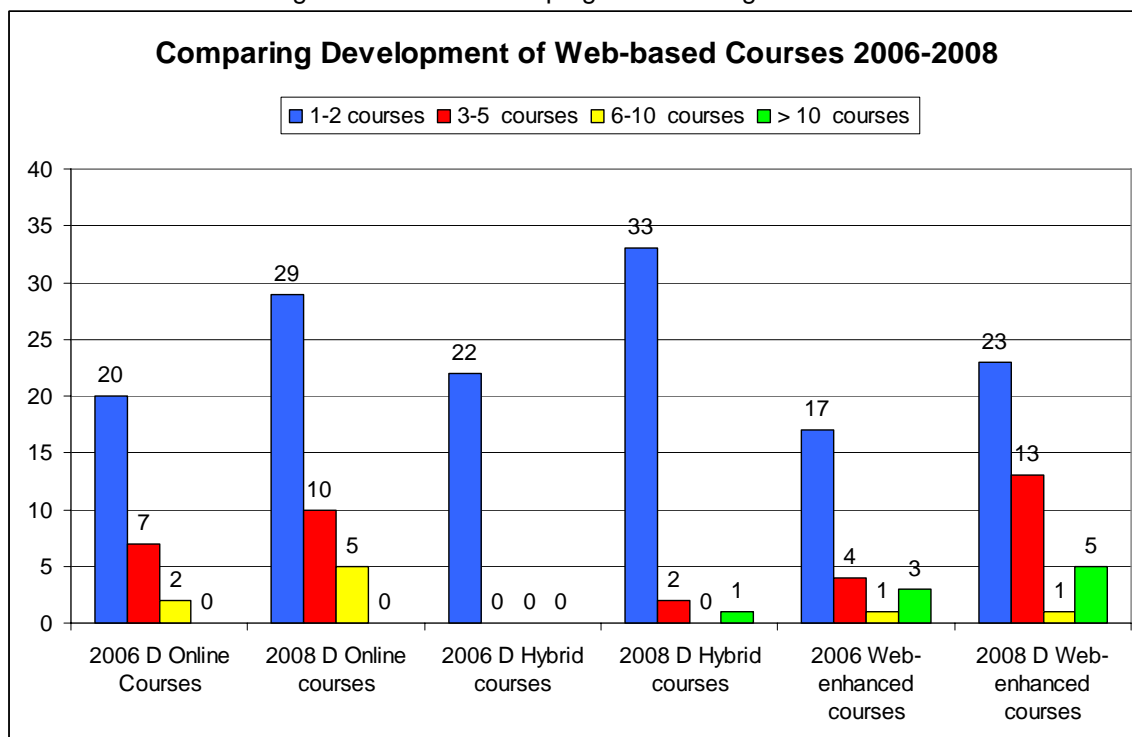
5. **Distance Learning is at the Take-off Point.** Both faculty and students are interested in increasing the use of online teaching and learning. Appropriate levels of training and support are necessary to enable online learning initiatives to be successful

Comparison to 2006 Technology Use Data

Because MCC and SunGard Higher Education also conducted the TNA survey in 2006, these data can be compared to the more recent information gathered from the 2008 TNA.

The comparison reveals that the levels of technology use have remained fairly constant amongst both faculty and staff at MCC from 2006 to 2008. Among faculty, the major changes have been in the decrease of dial-up Internet connections, the increase in broadband connections, and the increase in the ownership of various digital technologies.

From 2006 to 2008 the number of adjunct faculty increased from 141 to 367. This growth makes the use of percentage comparisons misleading, so the numbers of faculty rather than the percent will be used to show the growth in both developing and teaching web-based courses.



As indicated on the preceding graph, the number of instructors who developed online courses grew from 29 faculty members in 2006 to 44 faculty in 2008. Likewise, the number of instructors who taught online classes grew from 29 faculty members in 2006 to 44 in 2008. Also impressive is the increase in the number of instructors who taught multiple courses

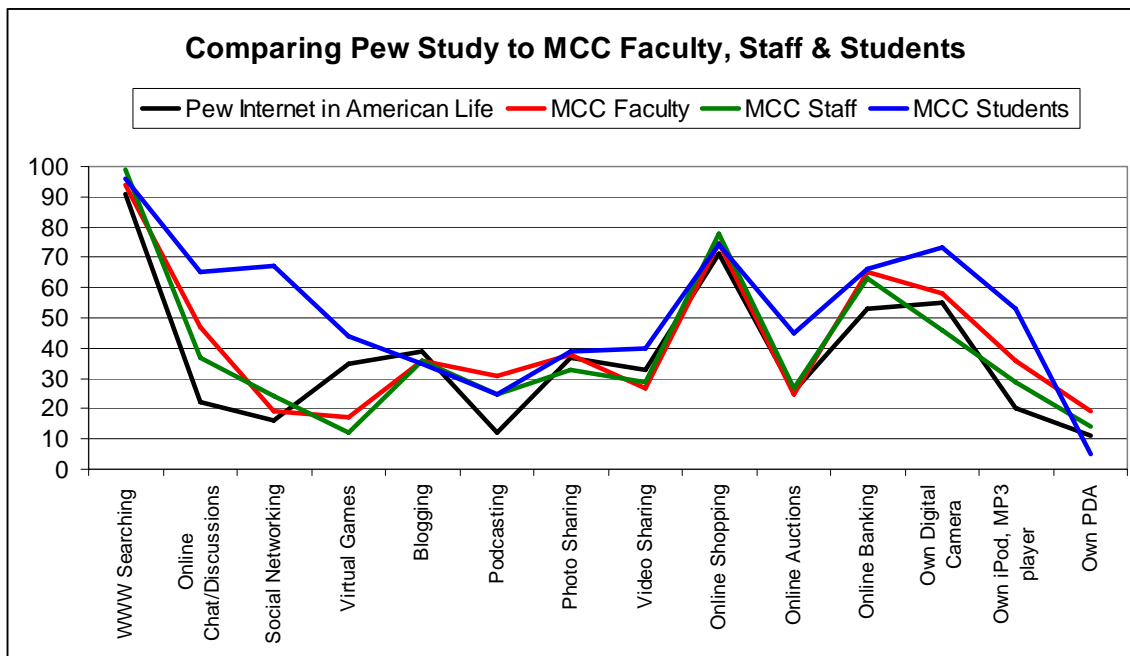
Comparison with National Samples

The mission of the *Pew Internet and American Life* project is to track the penetration of Internet use and the adoption of digital technologies into the lives of American adults.

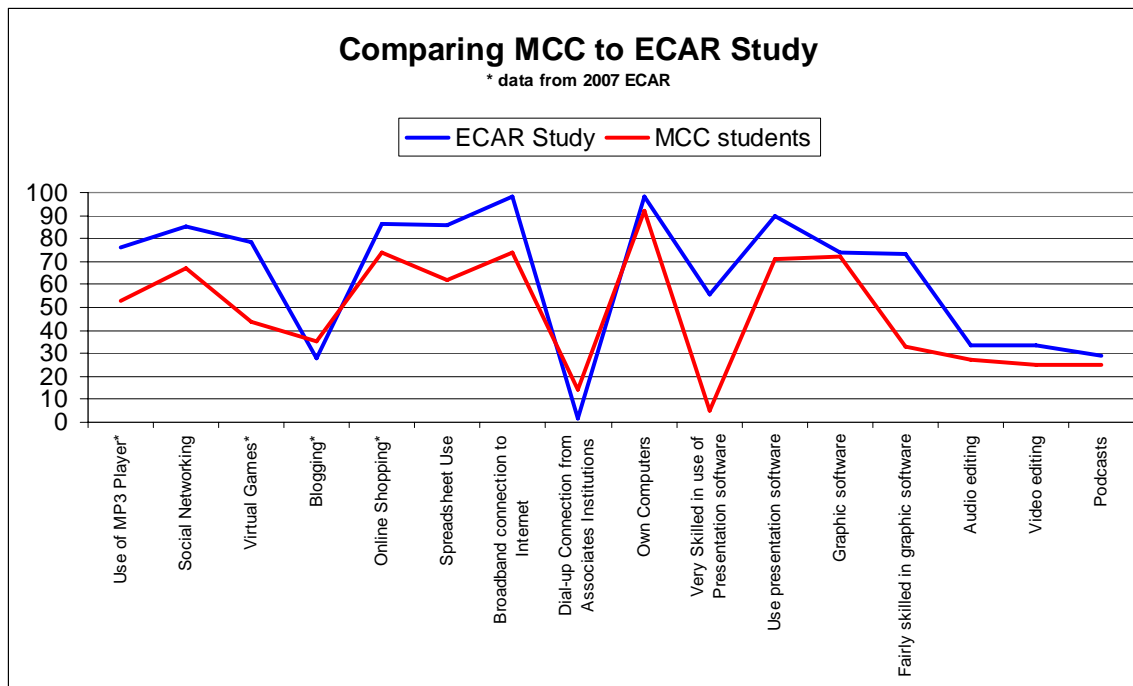
Compared to the Pew National sample, the faculty members at MCC are ahead of the national sample in the use of Internet searching, social networking, ownership of digital cameras, MP3

players and PDA's. MCC faculty members also lead in convenience features such as online shopping. Faculty members lag behind the national sample in use of virtual games and blogging.

The MCC students (shown in blue) exceed the faculty level of online activities including virtual games, podcasting, and blogging, but are behind them in the personal uses of the Internet for shopping and auctions. The MCC staff use these web-based features somewhat less than the MCC faculty except for the areas of virtual gaming and online auctions.



Where the Pew study seeks to describe our digital lifestyles, the *ECAR* research examines a more focused question –what technologies do we employ in the teaching and learning process? MCC students report usage of dial-up access to the Internet at higher rates than the *ECAR* study sample. They also slightly exceed the sample in the involvement in blogging. In all other areas, the MCC students show less involvement than the national sample including ownership of equipment and use of online facilities.



Integrating IT into the College

An important aspect of the refresh planning process involves reviewing the OIT vision, guiding principles and assumptions to assure that they continue to meet departmental and institutional needs. During the planning process, the team determined that the vision statement did not need to be altered and changed "IT" to "OIT" at several points in the guiding principles. These changes appear in the below:

Guiding Principles

- IT services are economically responsible, ethically managed, and accessible.
- OIT provides comprehensive support to MCC's programs and services to meet the diverse and lifelong educational needs of the College community.
- The College's IT assets are an investment which is managed in an accountable and responsible fashion thus maintaining them for future generations.
- OIT assures quality, continuous improvement, and relevancy through continuous assessment of all IT systems and services.
- OIT facilitates the College's efforts to achieve established learning outcomes.
- OIT leads the College in exploring technology which the College may employ to make Muskegon County a better place to live and work.

Planning Assumptions represent what the planning team believes to be true about MCC's current environment. The Planning Team altered several of the Planning Assumptions. The revised Planning Assumptions are as follows:

Planning Assumptions

Environment (physical, policies, culture, HE partners, vendors)

- MCC and HE partners provide BA, 2+2, 3+1, and graduate degrees
- MCC works with outside vendors for services including (IT, food services, tuition payment plan and bookstore).
- Vendors provide expertise in their respective areas
- MCC has interactive CVIT classrooms
- MCC has Channel 98 Television and Online Radio FX
- The appearance of the physical campus has appeal
- MCC has a beautiful hiking trail
- MCC has a Planetarium
- MCC has an updated library facility
- Rental income is generated from SCHE partners
- The building will be maintained to meet the College's needs
- MCC policies meet desired goals
- Everyone in the area knows about MCC
- There will always be a Main Campus
- MCC is a warm, friendly, and welcoming place

Faculty & Staff & Administration

- Adjuncts continue to play an important role in supporting the academic functions
- There is a varying level of loyalty, connection, and inclusion
- MCC has shared governance and somewhat of a democracy
- MCC employees feel a sense of security, stability, and longevity
- MCC has a non adversarial but collegial atmosphere
- Most employees have a vested interest in the future and success of MCC
- Some employees are also students
- Employees volunteer in community events (i.e., blood drives, Mayfest)
- Employees have a responsibility to participate in the community

Students

- Students come here for a level of convenience
- Students want to learn and be a part of a learning community
- MCC accepts all students regardless of abilities or disabilities
- Majority of MCC students have financial needs
- Large percentage of MCC students have remedial needs
- Students have some level of technical skill
- Students have a level of maturity and integrity
- Some students are dually enrolled in high school
- Some students are graduate students
- MCC is and likely will remain an Open Door institution
- MCC is and likely will remain a two-year institution
- Students have goals

Community & External

- The MCC external community includes: local work force, business, stakeholders, government funding agencies, competition, fundraisers, College service area, alumnae, transfer schools, and high schools
- Local manufacturing is changing, diversifying, and evolving
- There is a displaced, under skilled workforce
- Competition is everywhere and they want MCC's students
- The local economy is tight and funding opportunities are scarce
- MCC is and needs to be part of a solution for the local economy and displaced work force
- Donors exist and need to be encouraged to contribute

- MCC adds value to the community
- The local population is predominantly blue collar and has had little experience with a liberal arts education
- MCC provides value for its tuition
- MCC prepares students to transfer
- MCC prepares students for a career
- MCC provides opportunities for lifelong learning
- Large percentage of graduates would prefer to continue to reside in the area
- Most of the community has had some sort of contact with MCC
- MCC provides conference and catering services
- Collaborative efforts with local business and industry are ongoing (Lakeshore Business Center).

Strategic Goal Review

As part of the IT Strategic Plan Refresh process, the planning team along with MCC's CIO and SunGard Higher Education consultants carefully reviewed the strategic goals in order to determine which goals have been completed and operationalized along with those that need to be prioritized in the coming year. The planning team was asked to delay in proposing new goals in order to focus on finishing the current IT Strategic Plan. When this plan expires next year, the planning committee will meet to draft new strategic goals as part of the IT Strategic Plan for 2010 – 2013.

However, the planning committee was asked to reflect on the status of the strategic goal as well as recommendations for next year's plan.

	Operationalized Strategic Goals
	Prioritized Strategic Goals for 2009

Strategic Goal (Operationalized)	Status & Recommendations
2) OIT will support open communication by soliciting input from the College community on technology needs and communicate the importance of those needs to the College stakeholders.	This strategic goal has been accomplished; however, an ongoing effort needs to be made in order to continue to meet the goal.
4) OIT will maintain and support technology infrastructure	This is now an accepted part of operations that is critically important to the institution, although it is not strategic.
5) OIT will support technology facilitating the emerging needs of the college	This is now an accepted part of operations that is critically important to the institution, although it is not strategic.
Strategic Goal (Prioritized)	Status & Recommendations
1) OIT will support MCC efforts to increase alternative funding sources for technology initiatives	This effort has been characterized as "ongoing" by the planning committee; however, it probably needs to be revisited to determine whether it is still strategically relevant and needs focus. It does not seem that there has been measurable progress toward this strategic goal made in the last two years. <Looking at to see if we can see if we can add some value, but we still need to look at it -

	put in something about economic downturn. We should be making some progress here>
3) OIT will provide and/or facilitate mutually agreed upon training and support for administrative functions and enhance teaching and learning activities of the College	The team identified a need for training, especially with productivity tools, going forward for staff. The MCC dedicated instructional designer has made great strides in assisting faculty members to use technology in their teaching.
6) OIT will establish technical standardization as appropriate	Policies and procedures have matured but still need more growth; lifecycles need to be thought out in context of the strategic plan and presented again to the college.
7) Upon approval of the College, OIT will provide secure and reliable direct access to MCC internal database	Access has been provided but management of data needs additional consideration and documentation.
8) OIT will provide access to meet the educational and administrative technology needs of the MCC community	Great progress made in this with some slight improvements still needed.

Implementation of Strategic Goals

The information technology strategic planning process that resulted in the development of this strategic plan for MCC focused attention on how information technology can and should be used to further the institutional mission. This is important because in order for this planning process to be truly successful, the institution must be able to operationalize this plan on an annual basis. The following implementation plan only contains the goals that have been prioritized based on the IT Planning Review process.

The Implementation Grid below contains information that will better ensure that the Information Technology goals of MCC will be accomplished. Components of this grid include the following.

- **Goals** which are strategic level targets.
- **Key performance indicators** that identify completion characteristics or milestones of progress for goals. Key performance indicators answer the question, "How will we know when we have achieved the goal?"
- **Strategies** associated with each goal identify implementation actions.
- **Dependencies** are those events or environments that must take place or be in existence before implementation of a strategy can begin
- **Responsible Party** identifies the individual, department, or council that has major responsibility for accomplishment of each of the IT strategies. Typically, it will be the responsibility of these individuals or groups to develop the annual operating plans and appropriate budget requests for each of the assigned strategies as well as more detailed project plans. Where multiple owners are listed, the first individual or group listed has primary responsibility for ensuring the implementation of the strategy.
- **Resources** include: potential grants that have been identified for strategies that align with grant opportunities in the federal, state and corporate/private sectors.
- **FY columns** show the implementation timeline. An "X" placed in any single FY column indicates completion of a task in that year. X's in multiple FY columns indicate multi-year efforts.
- **Outcomes** which are anticipated as a result of successful completion of the strategy.

Updated Implementation Grid

Goal 1: OIT will support MCC efforts to increase alternative funding sources for technology initiatives.

Key Performance Indicator(s):

- Secure resources outside of the OIT budget

STRATEGY	RESPONSIBLE PARTIES & RESOURCES	DEPENDANCIES	OUTCOMES	FY 06-07	FY 07-08	FY 08-09	PROGRESS
1.1. Identify and critique alternative funding sources and provide OIT support and assistance for all technology-related grant opportunities.	<ul style="list-style-type: none"> Institutional Research Center for Teaching and Learning 		Secure one new grant	X	X	X	In the process of working with Academic Affairs to identify Perkins opportunities in the tech area. Working with IR to identify other possibilities.
1.2. Explore partnership opportunities with vendors and businesses to support technology at the College.	<p>OIT</p> <p>Resources include:</p> <ul style="list-style-type: none"> Purchasing Lakeshore Business & Industry Industrial Training 		Establish one new partnership	X	X	X	In process of working on building relationships and identifying opportunities.

Goal 3: OIT will provide and/or facilitate mutually agreed upon training and support for administrative functions and enhance teaching and learning activities of the College.

Key Performance Indicators:

- All MCC employees will have achieved appropriate level of training on technology systems and products

STRATEGY	RESPONSIBLE PARTIES & RESOURCES	DEPENDANCIES	OUTCOMES	FY 06-07	FY 07-08	FY 08-09	PROGRESS
3.1. Assess current technology skills and needs of MCC employees.	<ul style="list-style-type: none"> OIT: Instructional Technology Specialist Administrative Services <p>Resources include: CTL w/ managers and supervisors</p>		80% of MCC employees participate in assessment process	X			OIT will work toward completing this during the next several months.
3.2. Provide training for all MCC employees on new technical systems	<ul style="list-style-type: none"> OIT: Instructional Technology Specialist Administrative Services 	Completion of 3.1	Create training as need for new systems	X	X	X	ERP Training – 40% completion. Specific follow-up and overview training still necessary. Productivity Tools – 50% completion. A more systematic approach is required. Instructional Design – 95% completion. There has been great improvement in this area over the last 10 months.
3.3 Provide training for all new MCC employees on technical systems	<ul style="list-style-type: none"> OIT: Instructional Technology Specialist Administrative Services 		Every new employee complete technical training within 30 days of employment	X	X	X	Training documents have been created by the process has not been formalized.
3.4. Implement flexible training models to fit need of users. (i.e., train the trainer, one-on-one, just in time, etc)	<p>OIT: Instructional Technology Specialist</p> <p>Resources include: Super users</p>		Create 5 training modules per year	X	X	X	Complete

Goal 6: OIT will establish technical standardization as appropriate.

Key Performance Indicators

- Consistent standards are applied to technology infrastructure, systems, policies, and procedures.

STRATEGY	RESPONSIBLE PARTIES & RESOURCES	DEPENDANCIES	OUTCOMES	FY 06-07	FY 07-08	FY 08-09	PROGRESS
6.1 Assist in the development and implementation of software policies for all user's computers	<ul style="list-style-type: none"> OIT IT Council FIT Oversight <p>Resources include:</p> <ul style="list-style-type: none"> All users Selected outside resources 		<p>Approved software policies</p> <p>Communication Plan</p> <p>Assessment of policies</p>	X	X	X	This area is currently 50% complete.
6.2 Assist in the development of standards within IT policies and practices	<ul style="list-style-type: none"> OIT IT Council FIT Oversight <p>Resources include:</p> <ul style="list-style-type: none"> All users Selected outside resources 		<p>Approved policies and procedures</p> <p>Communication Plan</p> <p>Assessment of standards</p>	X	X	X	This area is currently 80% complete.
6.3 Develop a purchasing and lifecycle plan for computers following a 2-5 year cycle and budget plan	<ul style="list-style-type: none"> OIT IT Council Administrative Services <p>Resources include:</p> <ul style="list-style-type: none"> SHE Resources Selected Outside Resources Faculty, Staff, and Students 		Approved life-cycle plan		X	X	This area is currently 30% complete. Lifecycles need to be thought out in context of the strategic plan and presented again to MCC.
6.4 Evaluate the need and use of shadow systems, where appropriate							

Goal 7: Upon approval of the College, OIT will provide secure and reliable direct access to MCC internal databases.

Key Performance Indicators

- Authorized users have access to data necessary to support their decision-making

STRATEGY	RESPONSIBLE PARTIES & RESOURCES	DEPENDANCIES	OUTCOMES	FY 06-07	FY 07-08	FY 08-09	PROGRESS
7.1 Research solutions that will improve efficiency in retrieving data from the systems.	<ul style="list-style-type: none"> OIT FIT Oversight IT Council Resources include: <ul style="list-style-type: none"> IRD Grants (i.e., Title III) 		A plan for efficient data retrieval		X	X	This area is 50% complete.
7.2 Support the collection of accurate data that can be easily accessed onsite and remotely by appropriate users.	<ul style="list-style-type: none"> OIT FIT Oversight IT Council Resources include: <ul style="list-style-type: none"> Grants (i.e., Title III) 	<ul style="list-style-type: none"> Completion of item 7.1 Accurate input of data 	Database structure which supports data retrieval plan		X	X	This area is 50% complete.
7.3 Support data-driven decision making for teaching, learning, and administrative operations and initiatives.	<ul style="list-style-type: none"> OIT FIT Oversight IT Council Resources include: <ul style="list-style-type: none"> Grants (i.e., Title III) 		Approved data structures		X	X	This area is 50% complete.

Goal 8: OIT will provide access to meet the educational and administrative technology needs of the MCC community.

Key Performance Indicators

- Users will have access to MCC resources regardless of their location

STRATEGY	RESPONSIBLE PARTIES & RESOURCES	DEPENDANCIES	OUTCOMES	FY 06-07	FY 07-08	FY 08-09	PROGRESS
8.1 Provide off-campus access to technical resources for appropriate users	<ul style="list-style-type: none"> OIT IT Council Resources include: <ul style="list-style-type: none"> FIT Oversight Library staff DE Coordinator 		Users have access	X	X	X	This area is 90% completed with great progress being made, but some slight improvements are still needed.

	<ul style="list-style-type: none">• Grants (i.e., Sloan Foundation, Title III)						
8.2 Provide easy access to technical resources to appropriate users.	<ul style="list-style-type: none">• OIT• IT Council Resources include: <ul style="list-style-type: none">• FIT Oversight• Library Staff• DE Coordinator• Grants (i.e., Sloan Foundation, Title III, Oracle Portal Grant)		Single Sign-on portal system Provide access to data for HE Partners	X	X	X	This area is 90% completed with great progress being made, but some slight improvements are still needed.

Appendix A: Planning Participants

Unless otherwise indicated, the individuals below attended both of the half-day sessions held on January 21, 2009 and February 04, 2009.

Carol Briggs-Erickson	Library
Harry Brown	CIS Faculty (attended 01/21/09)
Kelley Conrad	Counseling Chair
George Maniates	Associate VP for Admissions (attended 01/21/09)
Deb Newsome	WMU
Jean Roberts	Registrar
Jeff Stipes	Industrial Machine Technology
Teresa Sturrs	Associate VP for Academic Affairs (attended 02/04/09)
Bob Ferrentino	VP for Academic Affairs (attended 02/04/09)
Bill Loxterman	Director of Public Instruction
Joe Doyle	AVP of Administration (attended 02/04/09)
Janie Brooks	VP of Student Services (attended 02/04/09)
Julie Weller	Webmaster
Rosemary Zink	Finance
Jim Pianki	OIT – SunGard CIO
Mike Alstrom	OIT – SunGard Technical Director
Mindy Stevens	OIT – SunGard USM

Appendix B: Technology Needs Assessment 2009

Introduction

In October of 2008, Muskegon Community College and SunGard Higher Education launched a project to assess the current level of technology integration in the teaching and learning processes as well as the daily operations of Muskegon Community College.

Assessment Methodology

The Technology Needs Assessment was conducted utilizing an online survey tool. The survey, in the form of an email invitation, was delivered to Muskegon Community College professional staff, support staff, full-time and part-time faculty as well as the students. The email contained a brief description of the survey and a unique URL which allowed researchers to determine who had not responded to the survey invitation. Those not responding to the survey received additional invitations during the data collection period. The survey was designed to examine the following areas:

- Access to technology (computers, printers, scanners)
- Software / systems used (basic office, photo editing)
- Lifestyle technologies (online shopping, photo sharing)
- Teaching & Learning technologies (display tools)
- Enterprise Resource Planning systems (Banner)
- Library online facilities / services (databases, catalogs)
- Technology-mediated courses (Blackboard)
- Number of courses taught / taken
- Delivery strategies / pedagogies used
- Motivational factors
- Training preferences

Planning and implementation of the survey may be described in four parts.

Planning

- Beginning October, 2008, Muskegon Community College and SunGard Higher Education launched a project to assess the current level of technology integration in the teaching and learning processes and daily operation of MCC.

Instrument Development

- SunGard Higher Education presented MCC with a draft survey instrument which had been developed from a review of accreditation guidelines, industry best practices, and the distance education literature base.
- The TNA instrument was modified to fit the specific informational needs of Muskegon Community College.

Survey Implementation

- Muskegon Community College provided a list of 5,444 faculty, staff, and student names and email addresses.
- There were 95 address errors resulting in 5,349 of 5,444 email invitations being successfully delivered.

Data Collection

- Data were collected during November 3rd to November 11th, 2008.
- Reminder invitations were sent on November 8th and November 10th, 2008 to those who had not yet responded to the initial invitation.

Overall Survey Response Rates

The survey was successfully sent to a total audience of 5,349. A total of 680 responses were received for an overall response rate of 13%. The response rates varied by category:

Category	Number of responses	Response Rate (percentage of total)
Full-Time Faculty	73	76%
Adjunct Faculty	52	14%
Staff	93	65%
Students	462	10%

Analysis Frameworks

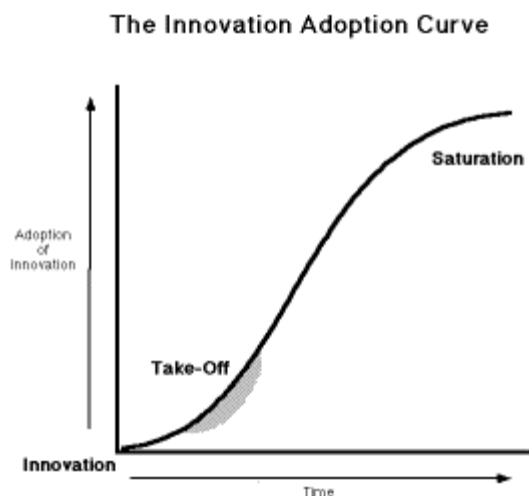
This assessment utilizes two national studies and a well-established model of technology adoption to analyze the findings and provide a framework for comparison. The diffusion of innovations theory in particular, will be used to frame and clarify the findings and recommendations sections of this report.

Analysis Framework 1: Diffusion of Technology

Interpretation of the Technology Needs Assessment results can be aided by comparison of the current state of technology use at Muskegon Community College with a model developed to describe the process of the diffusion of innovations. The model, developed by Everett M. Rogers in 1964, has been employed in hundreds of research studies around the world and is considered a standard for this type of research.

Diffusion of Innovations (Rogers, 1998)¹

The introduction and acceptance of a new technology or other innovation follows a predictable path. This is illustrated by the s-shaped adoption curve:



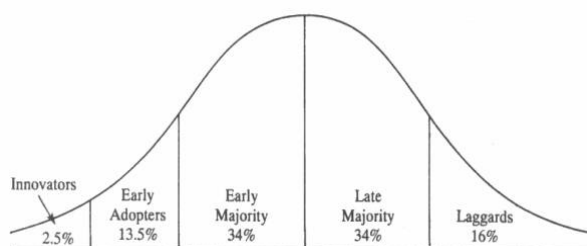
¹ Rogers, E.M. (1995). Diffusion of innovations 5th Ed., New York: Free Press.

At first a new innovation is adopted by only a few members of the group, but once accepted by 12-16% of the members, (the Take-Off point) adoption proceeds much more rapidly until it has been accepted by virtually all the members of the group (Saturation). It must be noted, however, that an innovation can fail at any point if the particular needs of the adopters are not met or if the innovation proves to be unreliable or too costly in time, money or effort.

Everett M. Rogers has also provided an analysis and description of 5 categories of adopters based on their innovativeness. His characterization of each of these groups and their specific needs provides a framework for constructing training opportunities and support structures to enable each group to comfortably adopt the desired innovation.

The first to adopt a new technology are the intrepid, novelty-seeking, **Innovators** who typically comprise just 2.5% of any population. They are followed by the **Early Adopters** (13.5%) who tend to be the opinion leaders in an institution. Once the innovation has been approved by these opinion leaders, the larger groups of innovators begin to adopt the technology. The **Early Majority** (34%) look to their peers the **Early Adopters** for information on how to employ the new technology. The successful adoption of the technology by this group is critical to the wider spread of the particular technology. Next up are the **Late Majority** (34%) who are skeptical of any new innovation and will not adopt a new technology until the pressure from peer use makes adoption a necessity. Finally, the **Laggards** (16%) are the most traditional of all the groups of innovators, and the ones who are most suspicious of any new technology. The Laggards (hereafter called Late Adopters) only adopt a technology when they feel it is well-proven and safe.

The distribution of innovativeness across a population closely approximates a normal curve:



Applying the Diffusion of Innovations to MCC Technology Adoption

The only innovation that has reached the saturation point across all surveyed groups is the use of email. Three other technologies – word processing, WWW browsing, and ownership of computers are currently being adopted by the Late Adopter group.

A detailed display of each group by adopter category can be found in Appendices A, B and C.

Computer and Internet Access

Faculty members lead in the acquisition of home computers with 95% reporting ownership. By comparison, 91% of students have home computers as do 89% of staff. Access to the Internet via broadband connection (principally DSL) was reported by 72% of staff, 67% of faculty and 62% of students. Dial-up connections are reported by 15% of faculty and 11% of students. Seven percent (7%) of faculty report having no Internet connections from home as do 10% of students and 2% of staff.

MCC Faculty Innovators by Adopter Category

Late Adopters



Representing just 16% of the faculty, the Late Adopters are the last group to adopt a specific technology. Faculty at Muskegon who comprise the Late Adopters group are learning to use word processing and presentation software; are acquiring computers and flash drives and beginning to search the Internet for information. Late Adopters are learning to use Datatel (web advisor) for getting class rosters, submitting grades, and checking course enrollment. This group may also use a computer and projector as part of teaching and learning activities in the classroom.

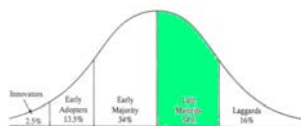
Legend
Access & Equip
Tool Software
Digital Lifestyle
ERP Software
Online Library
Classroom Technology
Synchronous online tools
Asynchronous online tools

This last group is composed of the most traditional thinkers who see change as a risk and who take a long time to accept any type of change. The late adopters require one-on-one training and benefit from shadowing (having help on-hand when they attempt to use a new technology in class). They tend to be isolated from other faculty and may not have peer group support.

Training options for late adopters should include one-on-one workshops or small groups of similar technology use levels. They may require frequent follow-up opportunities for questioning or reassurance.

Home Computer	97%
Word processing	99%
WWW Browsing	96%
Online shopping	85%
Getting class roster	85%
Email	100%

Late Majority



When rates of technology adoption reach 50%-85% amongst any population, that group of adopters is known as the Late Majority.

This group is more hesitant, easily discouraged by problems, and requires both peer pressure and significant hand holding through the process of adoption. A peer mentoring program and team teaching can be of great help to the Late Majority.

This group tends to be practical and wants to know how the technology will be beneficial to them or their students before learning how to use it.

Legend
Access & Equip
Tool Software
Digital Lifestyle
ERP Software
Online Library
Classroom Technology
Synchronous online tools
Asynchronous online tools

Flash Drive	81%
Broadband	79%
Cell phone	66%
Digital Camera	58%
CD/DVD Burner	58%
Presentation	83%
Spreadsheet	78%
Image editing	73%
Database	57%
Online Banking	69%
Internet	80%
Compute & projector	76%
VCR/DVD	64%
Announcements	70%
Course grade book	55%
Checking course enrollment	84%
Submitting grades	77%
Getting class schedules	71%
Sending email to entire class	57%
Checking student status	57%

Early Majority



The Early Majority is the first large group of adopters. They begin to appear when an innovation passes the take-off point (16%). This group is moved to action by the success of their peers in adopting the technology. They benefit from faculty showcases where current users share their experiences and the lessons learned from utilizing the technology in their classes. Peer teaching and support groups will also facilitate the process of adoption for the early majority.

This is the group of faculty at Muskegon Community College that is tackling the greatest number of innovations at this time. In this list are the advanced classroom technologies such as use of simulations and capturing lectures electronically. Other more advanced technologies include podcasting, blogging, and use of electronic portfolios.

In the online pedagogy group, the faculty are using the Blackboard features that include online quizzing, use of the grade book, and the discussion forum.

Considering the number of new technologies being explored and adopted by this group, it would be helpful to organize faculty interest groups around these technologies so that faculty can share their experiences as they develop new skills.

This group is also developing and teaching online, web-enhanced and hybrid courses. This process of adoption can be supported by peer teaching, online teaching interest groups, and course development groups.

Legend
Access & Equip
Tool Software
Digital Lifestyle
ERP Software
Online Library
Classroom Technology
Synchronous online tools
Asynchronous online tools

GPS	25%
Camera Phone	20%
Audio editing	34%
Video editing	30%
Online Chat/Discussions	47%
Photo sharing	42%
Video sharing	42%
Online Auctions	36%
Social Networking	36%

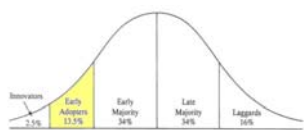
Checking class location	44%
Monitoring student performance	38%
Advising Students	33%
Publisher's Student Resources	42%
Document camera	33%
Simulations	23%
Lecture capture	18%
T Web-enhanced courses	42%
T Online courses	40%
D Online courses	38%
D Web-enhanced Courses	7%
T Hybrid courses	35%
D Hybrid courses	32%
Simultaneous viewing of PPT presentations	19%
Discussion forum	47%
Online content to replace classroom lectures	46%
Online quizzing / self assessments	45%

T = Teaching
D = Developing

Electronic Portfolios	30%
Podcasting	30%
Blogging	28%
Virtual Games	17%
Online databases to retrieve full text articles	48%
Reference tools online	36%
Requesting a Journal article online	34%
Interlibrary loan	25%
E-reserves at the library	17%

Calendar	36%
Online drop box for assignments	32%
Interactive multimedia	25%
Group projects	23%
PowerPoint with audio	23%

Early Adopters



The Early Adopters are the gatekeepers who test and approve new technologies for use on campus. They keep their eyes on the Innovators who are novelty seekers. Early adopters tend to be leaders among the faculty; persons who are respected and whose examples are followed by others. Before adopting a new technology, they will seek more information from journals, conferences, and others who are already implementing the innovation. If this group accepts the technology, they raise the adoption level to the

1.1.1

Legend
Access & Equip
Tool Software
Digital Lifestyle
ERP Software
Online Library

PDA	11%
Reserving books online	10%
Checking budget balances	15%
Submit purchase requisitions/orders	14%
Create or approve budgets	12%
Electronic portfolios	

Classroom Technology
Synchronous online tools
Asynchronous online tools

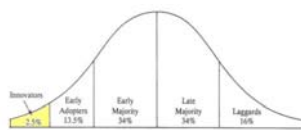
1.1.2

16% take-off point which increases the rate of adoption.

The Early Adopter faculty at Muskegon are currently working at incorporating virtual games into their teaching and learning practices as well as various means of capturing lectures and making them available to students online or via podcasting. Calculator based laboratories are also being incorporated into some of these classes. Faculty adoption of these technologies can be facilitated by access to hardware, software and training.

16%
Calculator based laboratories
12%
Games
9%
Podcasting
7%
Interactive white board
12%
Application sharing
10%
Voice over IP
9%
Group text chat
9%
Two-way audio and video conferencing
8%
Electronic hand raising
6%
Synchronized web browsing
3%
Simulations
16%
Lectures w/ audio and video capture
15%
Games
9%
Lectures via podcasting
6%

The Innovators

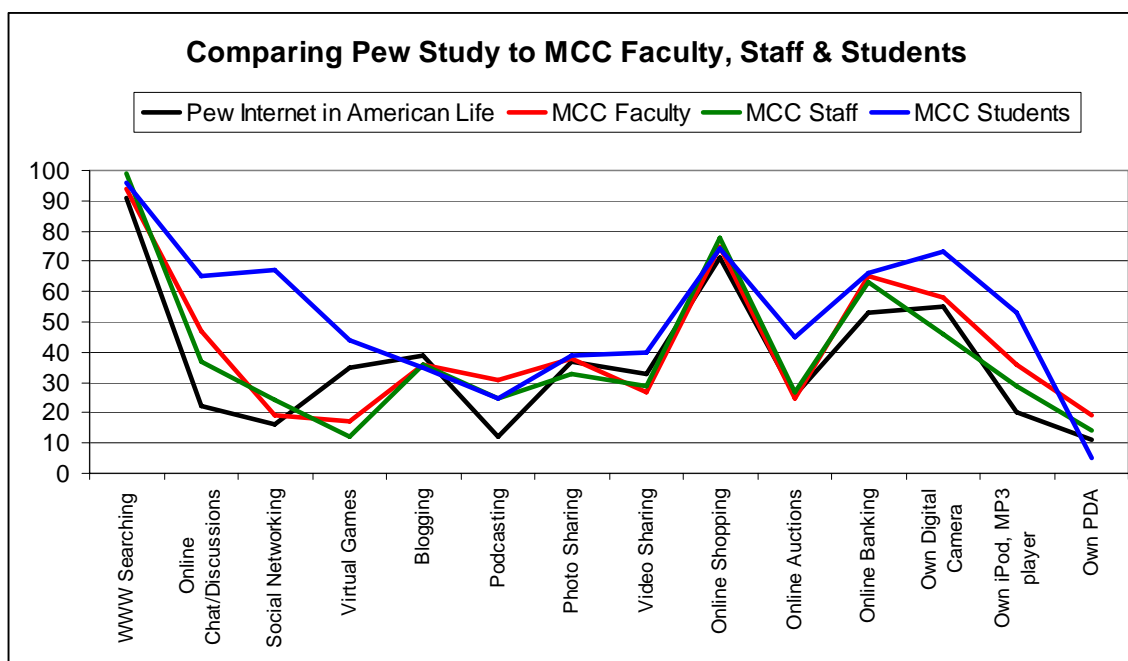


The Innovators are the faculty who are always keeping their eyes open for new things. They jump from one new technology to another, keeping those that work for them and discarding those that do not. They tend to have more money than other groups and will often purchase the technology on their own. Innovators can be attracted to a technology by the request and support of administration. The innovations they are testing often do not show up on surveys as they have not yet entered the mainstream. This survey did not identify any technologies currently under adoption by the Innovators.

Analysis Framework 2: Pew Internet and American Life Project²

The mission of the Pew Internet and American Life project is to track the penetration of Internet use and the adoption of digital technologies into the lives of American adults. Each year the project conducts multiple studies using online surveys and random dialing phone interviews. From these sources, they have assembled statistics on various web-based activities and digital technologies and it is employed here to compare the technology use patterns of MCC faculty with that of a national sample.

Employing the Pew Project to Interpret Muskegon findings



Compared to the Pew National sample, the Faculty at Muskegon Community College are ahead of the national sample in the use of Internet searching, social networking, ownership of digital cameras, MP3 players and PDAs. They also lead in convenience features such as online shopping. They lag behind the national sample in use of virtual games and blogging. The MCC students (shown in blue) exceed the faculty level of online activities including virtual games, podcasting, and blogging, but are behind them in the personal uses of the Internet for shopping and auctions. The MCC staff use these web-based features somewhat less than the MCC faculty except for the areas of virtual gaming and online auctions.

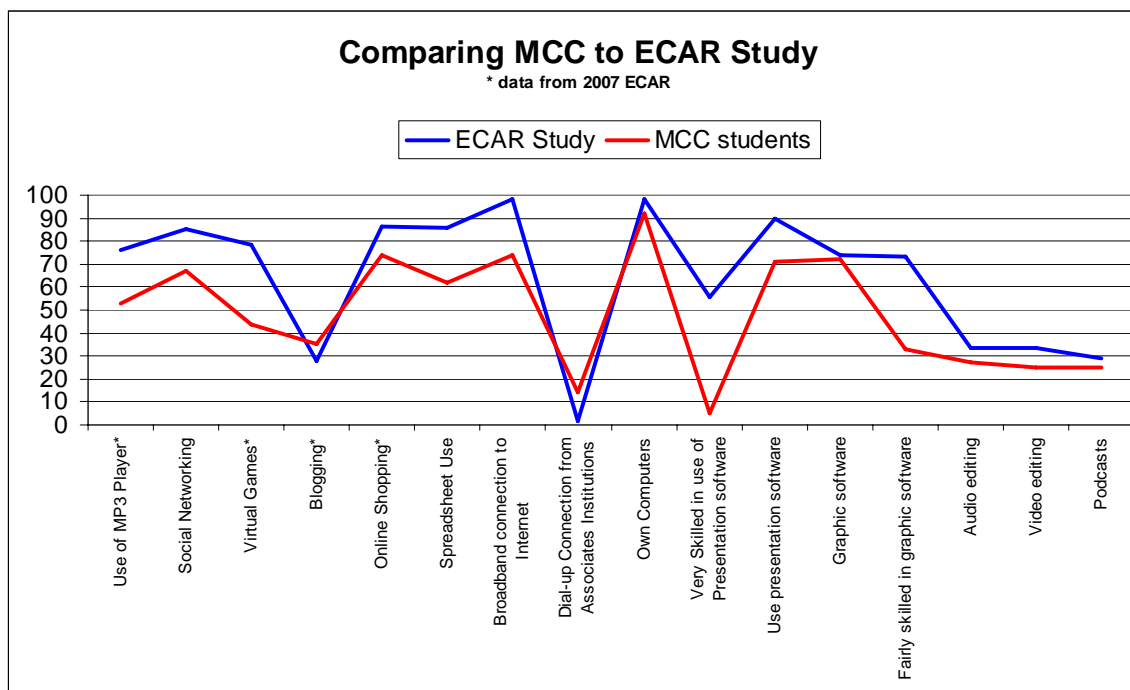
² From "Internet Activities" downloaded from http://www.pewinternet.org/trends/Internet_Activities on 8.28.08.
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Analysis Framework 3: ECAR Study of Undergraduates and Information Technology

The second study, the ECAR Study of Undergraduates and Information Technology³ is an annual study conducted by the Educause Center for Applied Research (ECAR) to fulfill three purposes:

1. To track the information technology use, preferences, and behaviors of undergraduate students especially as it is used in learning.
2. To provide information to college administrators regarding the technology expectations of undergraduate students.
3. To inform the practices of faculty involved in creating technology-rich learning environments for their students.

Where the Pew study seeks to describe our digital lifestyles, the ECAR research examines a more focused question –what technologies do we employ in the teaching and learning process? These two studies provide a macro view of our digital lifestyle and a micro view of how we use technology on campus in pursuit of academic activities and both offer robust comparisons for MCC students.



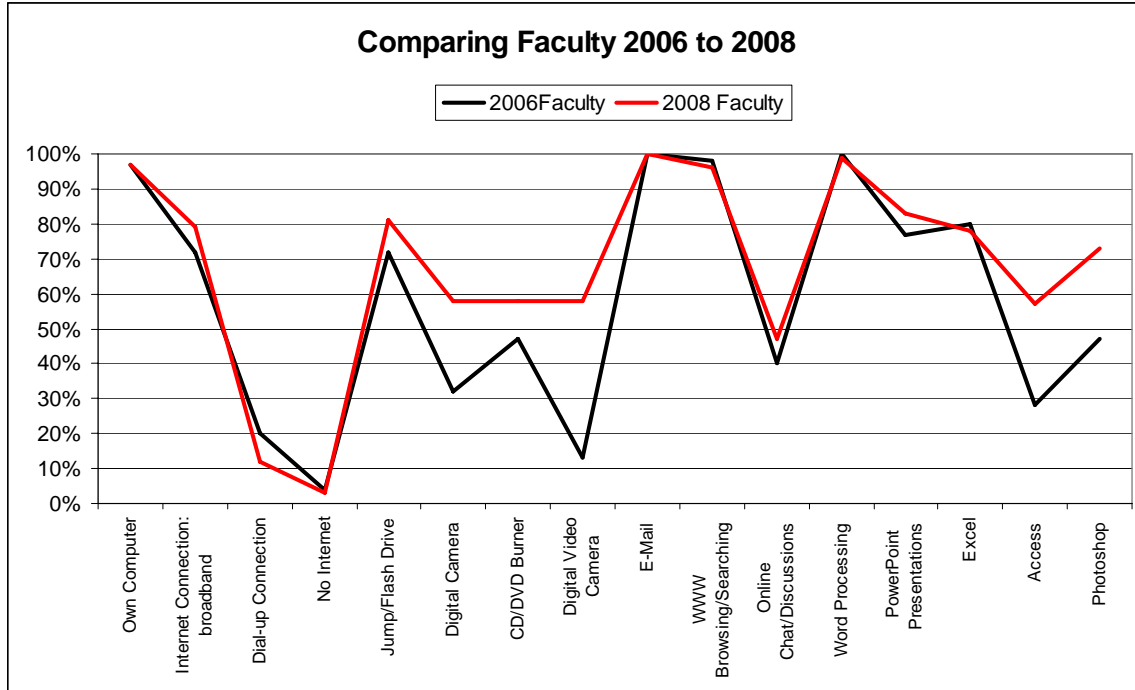
MCC students report usage of dial-up access to the Internet at higher rates than the ECAR study sample. They also slightly exceed the sample in the involvement in blogging. In all other areas, the MCC students show less involvement than the national sample in ownership of equipment and use of online facilities.

³ <http://connect.educause.edu/library/abstract/TheECARStudyofUnderg/45075>

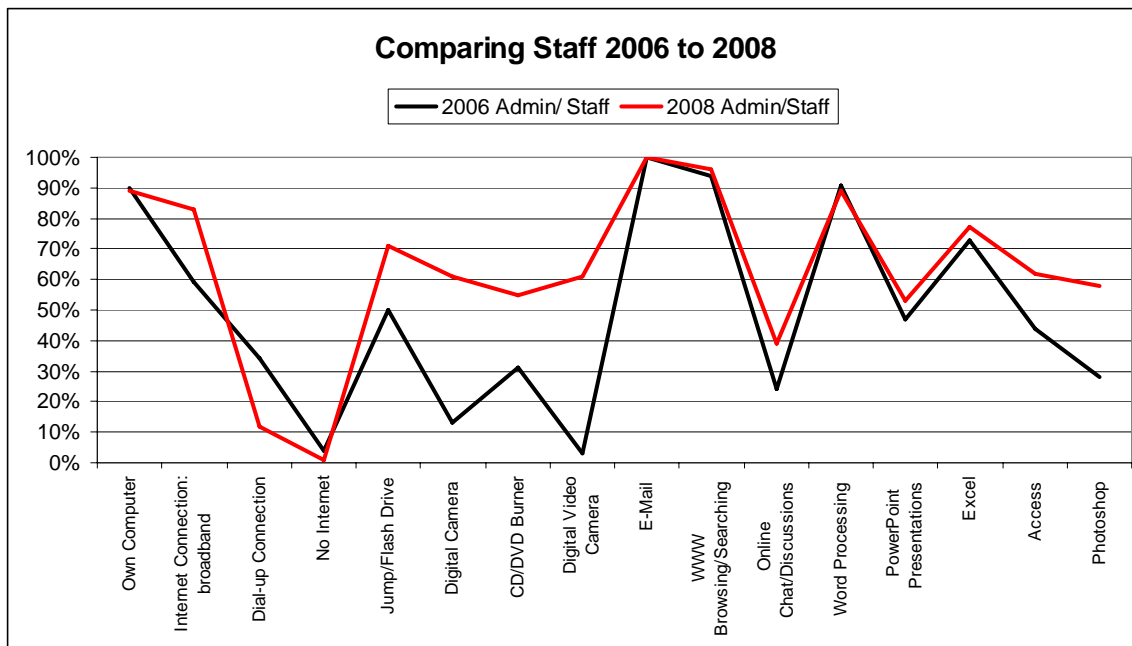
Progress in Technology at MCC from '06-'08

Use of Tool Software and Digital Equipment

The levels of technology use have remained fairly constant amongst both faculty and staff at MCC from 2006 to 2008. The graph below shows that among faculty, the major changes have been in the decrease of dial-up Internet connections, the increase in broadband connections, and the increase in the ownership of various digital technologies. Tool software usage is nearly constant except for the increases in use of databases (Access) and image editing (Photoshop) software.

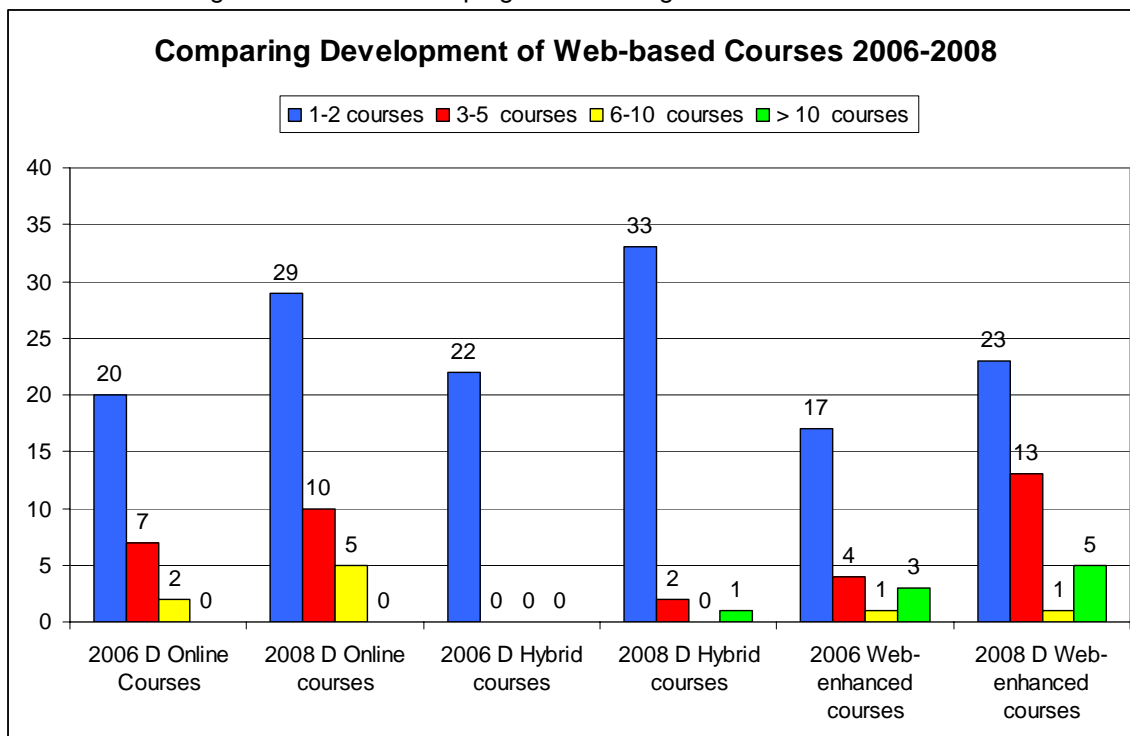


The MCC staff saw more dramatic increases in use of broadband Internet connections, reduction in the number of dial-up Internet connections, and great increases in the ownership of digital technologies. The increases in database use and image editing software use mirrored that of the faculty.



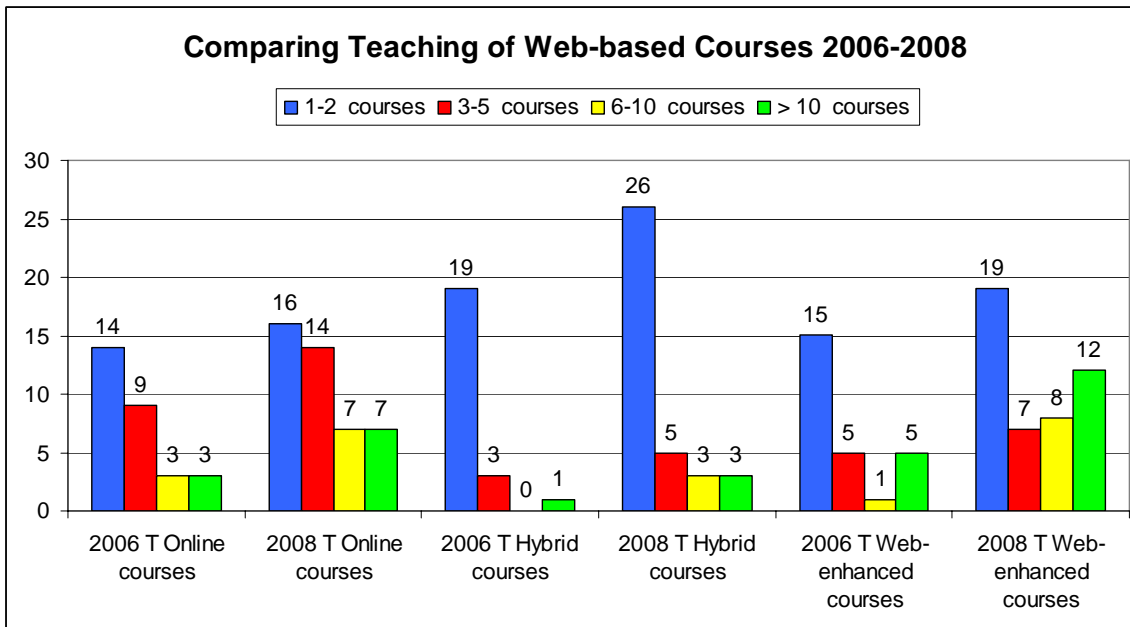
Web-Based Courses 2006-2008

From 2006 to 2008 the number of adjunct faculty increased from 141 to 367. This growth makes the use of percentage comparisons misleading, so the numbers of faculty rather than the percent will be used to show the growth in both developing and teaching web-based courses.



As indicated on the preceding graph, the number of instructors who developed online courses grew from 29 faculty in 2006 to 44 faculty in 2008. Likewise, the number of instructors who taught online

classes grew from 29 faculty in 2006 to 44 in 2008. Also impressive is the increase in the number of instructors who taught multiple courses.



Key Findings

1. Lack of access to both up-to-date computers and the Internet were reported by 16% of responding students.

Some direct quotations from faculty and staff survey comments follow:

Our internet at home is too slow for half the things I need to do online. When it comes to doing online homework or registering for classes, I need to go to my grandparent's house and use their internet. The pages just don't load at my house with our dial-up connection.

Computer is about 10 years old, very slow, error pops up a lot when I try to forward/send e-mails/info.

Unfortunately, my computer is a few years old, and unable to perform many of the tasks utilized on newer programs. I am also financially unable to purchase some of the programs the school uses for my home computer.

I have dial up connection, if I am required to view video or audio as a part of my assignment I have to use the computers at school because it takes a half hour to download a short feed.

2. Most faculty and staff agree that integrating technology into the daily operation of the college and into teaching and learning processes are very important.

Some direct quotations from faculty and staff survey comments follow:

We live in a society that is technology-based, as do our students. Integrating technology in the process is vital if we want to reach today's students.

Critical...it's the way of the future. Plus it expands our student base from immediate area to national...international.

All students need these skills, and we must properly and effectively model how to use technologies. Additionally, the efficiency of the entire education process can be improved with the use of certain technology.

It is imperative to my job. All the data I need to report are stored in Datatel/Colleague. Without the knowledge in how to extract that data, I am helpless.

We cannot operate without technology in our daily operations – watch what happens when we lose power.

EXTREMELY – we are an educational institution and need to be able to show students and the public that we are the best in whatever we do.

3. Faculty and Staff see lack of training and time to participate in training as a major factor in discouraging their adoption of more technology.

Some direct quotations from faculty and staff survey comments follow:

Little time to learn. Training to use what we have doesn't appear to be a priority now that we are up and running – we talk about it a lot, but there is no action. Expecting those who did much of the work to implement Colleague to do the training continues to burden those who carried the load for two years.

Many educators, less familiar and less comfortable with technology than their students, struggle to seamlessly integrate a growing list of technology tools into their regular curriculum.

Need training in query building. I have all the skills to be at a higher level and no one to direct me.

Not enough trainings on campus, or time for training. Online self training would be best for me.

Lack of time to do current job and then learn additional skills and then integrate into current courses-being pulled in many different directions. Need a block of time to set aside that I can devote just learning technology to integrate.

4. Faculty and Staff training preferences are nearly identical. Every training option was selected by at least 26% of the respondents. This wide acceptance of all forms of training can be used to overcome some of the typical obstacles of training including trying to schedule training at convenient times for all participants and having training resources available on a 24/7 schedule to accommodate learners.

Staff Training Preferences		Faculty Training Preferences	
Group hands-on workshop	82%	Group hands-on workshop	78%
Individual training session	67%	Individual training session	70%
Group demonstration	61%	Group demonstration	45%
Online tutorials (animations)	55%	Online tutorials (animations)	41%
Online Live Workshops	40%	Online written instructions	34%
Online written instructions	38%	Online Live Workshops	30%
Online Archived Workshops	37%	Telephone support	32%
Telephone support	33%	Online Archived Workshops	26%

5. Distance Learning is at Take-off Point

The development and teaching of web-based courses including web-enhanced courses, online courses and hybrid courses are being adopted by the Early Majority of faculty, representing 17% to 50% of the faculty respondents. These faculty members indicate strong interest in learning to develop and teach more web-based courses.

Student respondents indicate that 55% of them have already taken at least one online course. Thirty-five percent (35%) of students have taken at least one web-enhanced course and 33% have taken a hybrid course.

When asked which asynchronous online tools they had used, faculty indicated they principally used email followed by a number of CMS course tools such as the grade book, announcements and the drop box. Less frequently used are the online content, discussion forums, simulations, games and podcasting.

Asynchronous Online Feature	% Of Faculty Who Use
Email	88%
Grade book	70%
Announcements	55%
Online quizzing	47%
Calendar	46%
Discussion forum	46%
Online drop box	36%
Online content	32%
PowerPoint with audio	29%
Interactive multimedia	25%
Group projects	23%
Simulations	16%
Lectures w/ audio and video capture	15%
Games	9%
Podcasting	6%

Students indicated that the most important tools for learning online were email, followed by grade book and announcements, but then moving to online content. The complete the list is included below.

Asynchronous Online Feature	Importance to Learning
Email	98%
Announcements	98%
Course grade book	97%
Online content	96%
Online quizzes, self assessments	95%

Assessment drop box	94%
Document Sharing	88%
Online Lectures	86%
Multimedia	85%
Discussion forum	80%
Group projects	72%
Voice over technology for live chats with instructors	58%

Some of the features that students consider important to their learning are among the features used less often by faculty. An example of this is the discussion forum which is important to 80% of students but used by just 46% of faculty. Providing requested support to students may improve their learning.

