| | | | |
|---|---|---|---|
| | **needs of the organization and one that others will want to imitate.** | | |
| | • See plans under # 1 | P | FY 10 – FY 12 |
| | • Implement SaaS solution (if approved) | P | FY 13 – FY14 (SEE # 1) |
| | • Implement a student and staff training program that will increase the "first call resolution" rate | O | FY 13 |
| | | | |
| U | **5.New Staff and Student Orientation**<br>**By 2015 ITSD will implement an Orientation program for new staff and students** | | |
| | • Implement a "Buddy System" for IT orientation – preferably deployed during the first week of employment | P | FY 11 |
| | • Implement employee training program based on:<br> ▪ Service catalog<br> ▪ Workflow<br> ▪ Service Level Agreements (SLAs)<br> ▪ IT Services Request Forms<br> ▪ IT Policies & Procedures (Security, role of IT Service Desk, Customer Service Center)<br> ▪ Assistance for initial setup of desktop, phones and mobile devices<br> ▪ Organization chart<br> ▪ Data Center Tour | P | FY 12 |
| U | **6. Establish a Network Operations Center (NOC)**<br>**By 2014 ITSD will Implement a Network Operations Center (NOC) that Controls / Monitors all IT Hardware, Software, and Datacom/ Telecom Components** | P | FY 12 – FY 14 |
| | • Collaborate with Facilities & Public Safety in the Design and Development of the NOC | | FY 12 |
| | • Determine the Applications (mission critical) and the Hours of Coverage Needed | | FY 12 |
| | • Determine Staffing Levels, Hire & Train Staff | | FY 13 |
| | • Test System | | FY 13 |
| | • Add Additional Applications & Services | | FY 14 – FY 15 |

# Appendix 2:

# ITSD Customer Satisfaction Surveys 2010-2011

# MISO Survey - Summary

The MISO Survey is a web-based quantitative survey designed to measure how faculty, students, and staff view library and computing services in higher education. In this year's survey our focus was on I.T. services as the library was conducting their our LibQual survey. However, moving forward the library and I.T. will partner in the MISO survey.

The MISO Survey addresses the following research questions:

- What services and resources are important to our constituents, and how successfully do our organizations deliver them?
- How effectively do we communicate with our campus communities about our services and resources?
- How skilled are our constituents in the use of software and library databases? What additional skills do they wish to learn, and how do they wish to learn?
- Which software and hardware tools do our constituents use, and which of these tools do they own?
- What roles do our constituents play on campus? What demographic factors identify them?
- What benchmarks can be established for excellent delivery of library and computing services?

## Summary of Results

### Faculty

Our response rate was very high - 46% (420 faculty responded). The majority of the respondents were Instructors/Lecturers and Assistant Professors. Over 40% that completed the survey were not tenure track faculty.

Overall Satisfaction of IT Services was spread closely between "Somewhat Satisfied" (37%) and "Satisfied" (39%)

Service areas that scored the highest were – E-Mail Services including SPAM filtering and Virus protection, IT Helpdesk, Instructional Technology Support and Network Stability – each garnering over 40% of the "Satisfied" response.

Other areas that also scored well were – Blackboard, Classroom Support, IT website, Status Information on Computing problems, Desktop Support, Training & Peoplesoft self-service.

Network speed and the Time it takes to resolve your desktop/laptop issue, were areas that faculty were "Somewhat Satisfied"

Availability and performance of wireless was spread evenly between the 5 categories (Dissatisfied, Somewhat Dissatisfied, Somewhat Satisfied, Satisfied and Not Applicable)

**We asked the faculty how often they use our services:**

It must be noted that besides Blackboard, Technology in the Classroom, Training and Peoplesoft Self-Service, the rest of the services "NEVER Used" had the highest percentage. These include Wikis, Blogs, Video Conferencing, Wireless Access, Xythos, Borrowing Laptops and other Technologies, Computer Labs & PC Repair Shop.

The faculty responded favorably in keeping them informed on Training and Scheduled System Downtime. Areas we could improve on are – Data backup solutions, who to contact for PeopleSoft Issues, Wikis, Blogs & the Pc repair Shop.

**IT Staff – we asked a series of questions about our staff in service areas:**

Instructional technology staff – about 58% of the faculty agreed that the staff were friendly, knowledgeable, reliable and responsive.

IT Help Desk, classroom technology and the training staff – over 50% of the faculty that responded in each of these 3 categories agreed that the staff were friendly, knowledgeable, reliable and responsive.

Service areas that faculty have not interacted with are – Peoplesoft support staff, telecom, web services & the Pc repair shop.

**Interested in Learning / Training**

There are 3 areas that faculty would like to learn more about – Backing up data, avoiding and solving computer problems.

They learn best through one-on-one instruction, workshops, self-direction with documentation and online tutorials.

# Summary of Results

**Staff** -- We received responses from 608 staff [The survey was NOT sent to IT staff]

Overall satisfaction with IT Services came in at 48%, with 32% being somewhat satisfied.

Services that had a 50% or higher satisfaction level were – email (60%), virus protection, email spam filtering, network stability & the helpdesk.

Services that had a 40% or higher satisfaction level were – IT Helpdesk schedule, peoplesoft self-service, network speed, status information on computer problems & desktop support.

The staff were mixed with the wireless coverage and performance – spread evenly between somewhat satisfied, satisfied and not applicable.

**We asked the staff how important are these services:**

The following services were very important to staff – email, virus protection, spam protection, campus telephone services, desktop support, wireless, & desktop/laptop replacement.

There were a few services that staff flagged as being "Not Important"; most of them were ones that faculty would use such as Blackboard. However Xythos was among the list of services that staff deemed as not important.

**Communications:**

Areas that staff felt well informed were – Scheduled downtime, Training, desktop support and Peoplesoft support. Support for R25 and the Repair Shop were two areas that staff felt they were not informed at all.

**IT Staff – we asked a series of questions about our staff in service areas:**

The helpdesk, telecom, and training – over 50% of the faculty that responded in each of these 3 categories agreed that the staff were friendly, knowledgeable, reliable and responsive.

**Interested in Learning / Training**

The staff were interested in learning about – Spreadsheet, database, presentation software, web authoring, Graphics (Photoshop), Backing up data and avoiding and solving computer problems.  The staff were not interested in learning about email, voicemail, Peoplesoft & search engines.

They learn best through one-on-one instruction, workshops, self-direction with documentation and online tutorials.

Other interesting facts:

Over 67% oif the respondents were women.
39% were Administrative or academic support and 32% were professionals &
87% were here on campus longer than a year.

# Summary of Results

## Overall Satisfaction of Services

A little over 33% of the students were satisfied with the overall IT services while 26% were somewhat satisfied.

Areas that students were most satisfied were – blackboard, Peoplesoft self-service, email services, spam filtering, virus protection (over 40%)

Students were also satisfied with Computer labs, IT Helpdesk, network stability, network speed, and support when you have a WISER problem. (over 30%)

29% of the students that responded were satisfied with wireless access while 22% were dissatisfied.


## Communications

The students responded that that were informed about – scheduled downtime, and desktop support; but were not informed at all about Wikis, Blogs, Backup solutions, Training and who to contact for instructional technology needs.

## What is important?

For the students the following services are very important – Blackboard, WISER self-service, Wireless access, network stability and network speed, email services, & virus protection. [between 50% & 70%]

## What do our students use?

Our students use blackboard & wireless – more than 3 times a week.

Our students are NOT using, Training, Blogs, IT Website.


## IT Staff – we asked a series of questions about our staff in service areas:

The helpdesk – between 35% and 39% of the students found the helpdesk staff to be friendly, knowledgeable, reliable and responsive

WISER Support, Training, Instructional Technology staff were areas that students did not have enough information.


## What would students like to use in the future?

Animations, Blogs, Clickers, Digital audio & video, eBook readers (Kindle), lecture capture, podcasts, Skype were tools or services that students would like to use.  Lecture capture and the eBook readers were the most popular.

**Other interesting facts:**

Social networks and text messaging (including IM) & Skype were the 3 most popular services that students use today.

82% of our respondents have a laptop/netbook.
80% are Windows while 31% are Mac and 8% Linux.

62% of the students that responded were Women
64% were undergrads and 31% grad

Ready, Set, RECORD with **Camtasia Relay**®

**TechSmith**
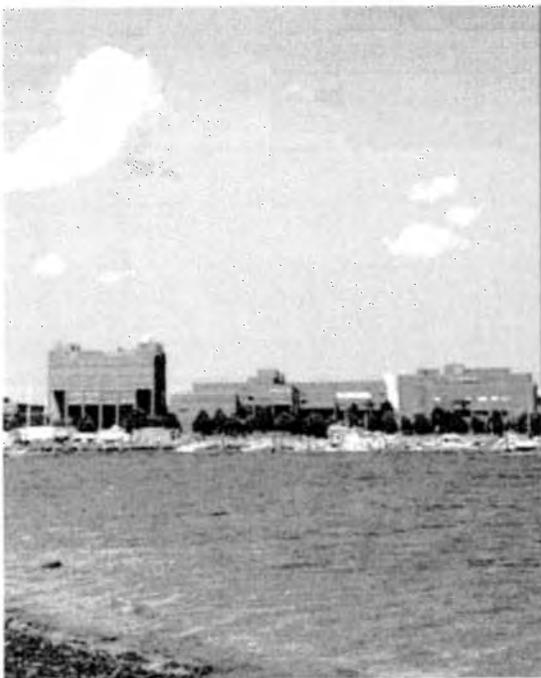
## UMASS BOSTON

### Fast Facts

A research university with a teaching soul, UMass Boston is nationally recognized as a model of excellence for urban universities.

› More than 14,000 students
› 900 faculty members
› Over 150 academic programs for undergraduate, graduate, and non-degree-seeking students offer limitless opportunities.

## Ready, Set, RECORD

When the need for lecture capture and recorded content became apparent, UMass Boston turned to their IT team to research, test and choose the best fit option for their school. They needed a solution that would easily integrate with their existing systems, which include Blackboard and iTunesU, be easily implemented and easy to train faculty to use.

Camtasia Relay was chosen as UMass Boston's lecture capture solution. They started by piloting Camtasia Relay's capabilities for 9 months before rolling it out to all who were interested in creating recorded content for their classes.

*"We chose Camtasia Relay because it hands ownership of the recording to faculty with very little preparation training. They can record from their own laptops, as well as their office workstations so this kind of accessibility is a real plus."*
- Mary Simone, IT Project Manager and Trainer, UMass Boston.

## The Set Up

Training and implementation of the Camtasia Relay pilot only took approximately one month, which included one workshop, instructions and further support through their wiki pages and some initial field support in classrooms to ensure no problems arose. Overall, Camtasia Relay was very easy for UMass Boston to deploy. All training and set up took less than one month.

As UMass Boston does not have their own media server, they upload their recordings to TechSmith's Screencast.com, an online hosting platform. They simply record their lecture, send it to Camtasia Relay server for processing, and then upload the video to Screencast.com for students to access and review.

## Results

During the Camtasia Relay pilot, faculty and students both responded very favorably to the positive benefits of using recordings for classroom review.

The success thus far is measured by the number of times a video is viewed. Since rollout, UMass Boston's estimated total views of recordings are over 6,000!

They now have over 32 faculty and staff using Camtasia Relay to record content for student review and/or training tutorials, with this number growing each semester.

## What did the Students Think?

As part of the Camtasia Relay pilot program, UMass Boston implemented a student survey to measure reaction, usefulness and the value of recorded materials for students. Here's what some of them had to say:

*"This program is the future of education! I honestly see this in all classrooms from high school to college someday. If all my classes had this software set up, my GPA would be much higher! And your program was easy to access!"*
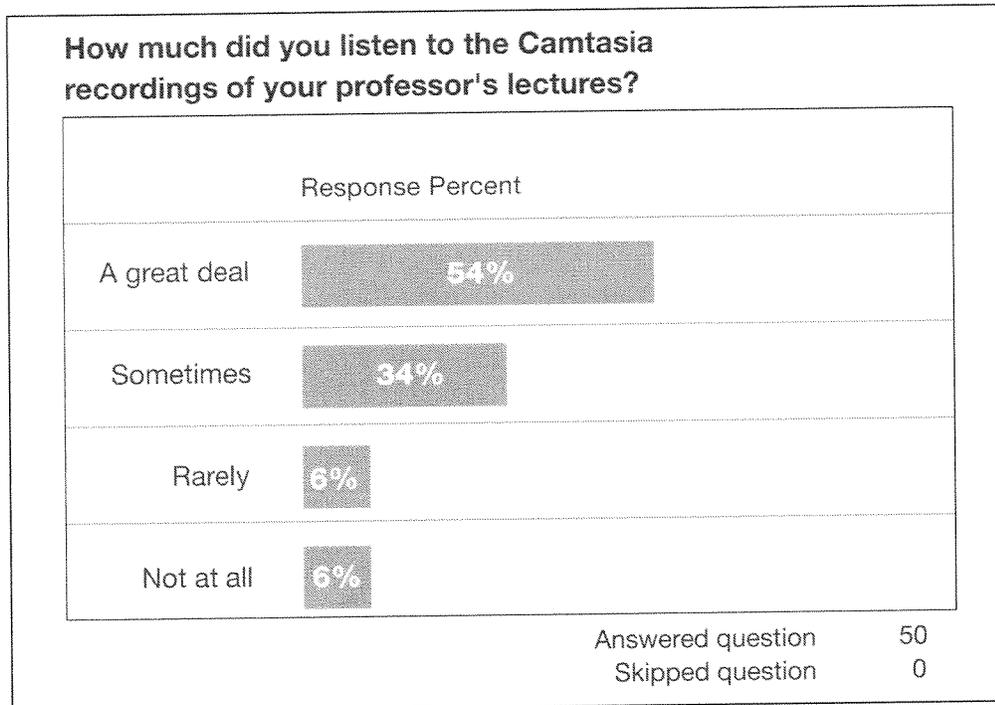
*"The availability of recorded lectures is a tool that I find indispensable for exam preparation."*

*"It makes time management a lot easier, especially for students with jobs and families."*

*"Very useful at exam time to refresh my memory on a large amount of abstract material."*

*"You can listen to them anytime you'd like from anywhere with an internet connection. I believe the recordings were particularly well done for this course... This course should serve as a model for all other courses."*

*"This strategy was very important and helpful to me this semester in that it enables me to get more depth of the course or subject matter… in such a huge class at some point in time I get distracted or get left back in the lecture due to noise. Also, English is my second language as such when the instructor is teaching on a fast pace, I also get left back or lost in the lecture. But with the audio recording I can listen to the entire lecture at home. This new method is very important therefore I hope all nursing classes have the opportunity to do likewise."*

## How much did you listen to the Camtasia recordings of your professor's lectures?

Response Percent

| | Response Percent |
|---|---|
| A great deal | 54% |
| Sometimes | 34% |
| Rarely | 6% |
| Not at all | 6% |

| | |
|---|---|
| Answered question | 50 |
| Skipped question | 0 |

To view an example of a Camtasia Relay recording from UMass Boston, please click below:

http://bit.ly/UMB_Test

## Get product details, attend a webinar, download a free trial:

www.camtasiarelay.com **Sales line: (888) 750-0685**

# ClassCapture Student Satisfaction survey Spring11

## 1. Please provide the following demographic information.

| | | Response Percent | Response Count |
|---|---|---|---|
| Gender: | | 100.0% | 13 |
| Age: | | 100.0% | 13 |
| Native Language: | | 100.0% | 13 |
| | answered question | | 13 |
| | skipped question | | 0 |

## 2. How much did you listen to the camtasia recordings of your professor's lectures?

| | | Response Percent | Response Count |
|---|---|---|---|
| a great deal | | 84.6% | 11 |
| sometimes | | 7.7% | 1 |
| rarely | | 7.7% | 1 |
| not at all | | 0.0% | 0 |
| | answered question | | 13 |
| | skipped question | | 0 |

## 3. Please identify anywhere you accessed the recorded lectures?

|  | | Response Percent | Response Count |
|---|---|---|---|
| from home | | 76.9% | 10 |
| on campus | | 53.8% | 7 |
| | answered question | | 13 |
| | skipped question | | 0 |

## 4. How would you evaluate the technical quality of the recordings you accessed?

|  | | Response Percent | Response Count |
|---|---|---|---|
| very good | | 92.3% | 12 |
| good | | 7.7% | 1 |
| fair | | 0.0% | 0 |
| poor | | 0.0% | 0 |
| | answered question | | 13 |
| | skipped question | | 0 |

## 5. Do you think the recordings were valuable to your learning the course material?

|  | | Response Percent | Response Count |
|---|---|---|---|
| I learned more than I expected | | 76.9% | 10 |
| I learned as much as expected | | 23.1% | 3 |
| I learned less than expected | | 0.0% | 0 |
| I learned nothing | | 0.0% | 0 |
| | answered question | | 13 |
| | skipped question | | 0 |

## 6. Please let us know what you find most useful about the availability of the recordings in this course?

|  | Response Count |
| --- | --- |
|  | 13 |
| answered question | 13 |
| skipped question | 0 |

**Q1. Please provide the following demographic information.**

| | Gender: | |
|---|---|---|
| 1 | female | Jun 1, 2011 6:24 AM |
| 2 | Male | May 17, 2011 7:22 AM |
| 3 | Female | May 15, 2011 6:22 PM |
| 4 | female | May 15, 2011 1:56 PM |
| 5 | Male | May 14, 2011 6:43 PM |
| 6 | male | May 14, 2011 6:19 PM |
| 7 | Female | May 14, 2011 3:39 PM |
| 8 | female | May 13, 2011 9:52 PM |
| 9 | male | May 13, 2011 8:16 PM |
| 10 | Female | May 13, 2011 6:40 PM |
| 11 | Male | May 13, 2011 6:37 PM |
| 12 | F | May 13, 2011 1:17 PM |
| 13 | 26 | May 13, 2011 1:10 PM |

| | Age: | |
|---|---|---|
| 1 | 35 | Jun 1, 2011 6:24 AM |
| 2 | 21 | May 17, 2011 7:22 AM |
| 3 | 27 | May 15, 2011 6:22 PM |
| 4 | 24 | May 15, 2011 1:56 PM |
| 5 | 22 | May 14, 2011 6:43 PM |
| 6 | 22 | May 14, 2011 6:19 PM |
| 7 | 50 | May 14, 2011 3:39 PM |
| 8 | 00 | May 13, 2011 9:52 PM |
| 9 | 25 | May 13, 2011 8:16 PM |
| 10 | 23 | May 13, 2011 6:40 PM |
| 11 | 29 | May 13, 2011 6:37 PM |
| 12 | 24 | May 13, 2011 1:17 PM |
| 13 | Female | May 13, 2011 1:10 PM |

| | Native Language: | |
|---|---|---|

**Q1. Please provide the following demographic information.**

| | | |
|---|---|---|
| 1 | Vietnamese | Jun 1, 2011 6:24 AM |
| 2 | English | May 17, 2011 7:22 AM |
| 3 | English | May 15, 2011 6:22 PM |
| 4 | Russian | May 15, 2011 1:56 PM |
| 5 | English | May 14, 2011 6:43 PM |
| 6 | russian | May 14, 2011 6:19 PM |
| 7 | englis | May 14, 2011 3:39 PM |
| 8 | english | May 13, 2011 9:52 PM |
| 9 | Vietnamese | May 13, 2011 8:16 PM |
| 10 | English | May 13, 2011 6:40 PM |
| 11 | Armenian | May 13, 2011 6:37 PM |
| 12 | Chinese | May 13, 2011 1:17 PM |
| 13 | Arabic | May 13, 2011 1:10 PM |

**Q6. Please let us know what you find most useful about the availability of the recordings in this course?**

| | | |
|---|---|---|
| 1 | It's very usefull and again and again | Jun 1, 2011 6:24 AM |
| 2 | Sometimes I run a little late and I miss the first half of the lecture. Sometimes I have a paper to write and I skip class all together. Whatever the case I know that I can always attend the lecture because of Camtasia, It is the best. It give me the ability also to go back to a lecture and review. | May 17, 2011 7:22 AM |
| 3 | The slides that went with the audio was good because I could rewind and listen to the material. | May 15, 2011 6:22 PM |
| 4 | I loved the course recordings. There were always there to listen to if you missed a class. It was very convenient for staying on top of the lectures. I wish everyone did it. | May 15, 2011 1:56 PM |
| 5 | Ease of use, and the ability to scroll through slides as well as scroll through lecture audio. One thing I would implement is a search function. | May 14, 2011 6:43 PM |
| 6 | When the course is as hard as molecular biology you sometimes miss important ideas in class, but this program allows you to come back home and listen to whatever yiu missed during lecture. | May 14, 2011 6:19 PM |
| 7 | gave me the flexibility to listen to the lectures over and over to get all of the details. It was great listening to the lectures at my own schedule and pace. | May 14, 2011 3:39 PM |
| 8 | no comment. | May 13, 2011 9:52 PM |
| 9 | I like it since i dont have enough time to attend the lecture | May 13, 2011 8:16 PM |
| 10 | I liked how you were able to look at the slides and listen to the lecture at the same time. | May 13, 2011 6:40 PM |
| 11 | Posibility to listen to lectures before exams as well as the ability to re-listen hard-to-understand-concepts portions of a lecture | May 13, 2011 6:37 PM |
| 12 | If you write the lecture notes or drawing on the computer instead of the back broad that will be more helpful. | May 13, 2011 1:17 PM |
| 13 | These recordings made this course more desirable and I will recommend it to everyone who wants to learn the valuable information Dr. Ackerman has to offer. I enjoyed the class thoroughly and used the recordings on regular basis due to the class time which did not make getting to campus very easy for commuters who have to drive into Boston between 7 and 10 AM. | May 13, 2011 1:10 PM |

# UserSatisfaction with Camtasia Class Capture   SurveyMonkey

## 1. Rate your experience with Camtasia ?

|  | very | somewhat | not at all | Response Count |
|---|---|---|---|---|
| Satisfied | **55.6% (5)** | 44.4% (4) | 0.0% (0) | 9 |
| Disatisfied | 0.0% (0) | **50.0% (2)** | **50.0% (2)** | 4 |
|  |  |  | Why ? | 6 |
|  |  |  | answered question | 9 |
|  |  |  | skipped question | 0 |

## 2. How would you rate the following?

|  | excellent | good | fair | poor | NA | Response Count |
|---|---|---|---|---|---|---|
| training you received | **66.7% (6)** | 33.3% (3) | 0.0% (0) | 0.0% (0) | 0.0% (0) | 9 |
| software troubleshooting support | **55.6% (5)** | 44.4% (4) | 0.0% (0) | 0.0% (0) | 0.0% (0) | 9 |
| smart classrooms technical support | **55.6% (5)** | 22.2% (2) | 0.0% (0) | 0.0% (0) | 22.2% (2) | 9 |
| wireless microphones | **44.4% (4)** | **44.4% (4)** | 11.1% (1) | 0.0% (0) | 0.0% (0) | 9 |
| turn around time to receive link to recorded camtasia file | 22.2% (2) | **66.7% (6)** | 11.1% (1) | 0.0% (0) | 0.0% (0) | 9 |
| quality of recordings | **44.4% (4)** | 33.3% (3) | 22.2% (2) | 0.0% (0) | 0.0% (0) | 9 |
| student satisfaction with recordings | **44.4% (4)** | 22.2% (2) | 22.2% (2) | 0.0% (0) | 11.1% (1) | 9 |
|  |  |  |  | Please feel free to comment |  | 3 |
|  |  |  |  | answered question |  | 9 |
|  |  |  |  | skipped question |  | 0 |

## 3. How much time after the semester terminates, do you wish IT to retain your recorded files

| | | Response Percent | Response Count |
|---|---|---|---|
| one semester | | 11.1% | 1 |
| one academic year | | 88.9% | 8 |
| Other (please specify) | | | 1 |
| | answered question | | 9 |
| | skipped question | | 0 |

## 4. Would you be willing to share your experience with Camtasia with other faculty and/or staff ( click all that apply)?

| | | Response Percent | Response Count |
|---|---|---|---|
| in a workshop presentation | | 66.7% | 6 |
| on a panel discussion | | 66.7% | 6 |
| as a telephone contact | | 44.4% | 4 |
| as an email contact | | 66.7% | 6 |
| | answered question | | 9 |
| | skipped question | | 0 |

## 5. Please provide us with personal contact information.

| | | Response Percent | Response Count |
|---|---|---|---|
| Name: | | 100.0% | 9 |
| Department | | 100.0% | 9 |
| Email Address: | | 100.0% | 9 |
| Phone Number: | | 100.0% | 9 |
| | | answered question | 9 |
| | | skipped question | 0 |

### Q1. Rate your experience with Camtasia ?

| 1 | I actually didn't have chances to use the sofware much. | May 31, 2011 1:17 PM |
|---|---|---|
| 2 | FLAKY PROGRAM SOMETIMES DOES NOT UPLOAD FOR PROF | May 24, 2011 5:51 AM |
| 3 | It's not a perfect system. It didn't record the first half of the first session of our seminar series. It dropped the sound for the last 10 minutes of the last session. The mike doesn't pick up interaction with class members. I find it difficult to get a good view of the slides on the uploaded version. | May 23, 2011 1:04 PM |
| 4 | Great tool to allow students to listen to the course discussion when they have missed class. | May 18, 2011 8:21 PM |
| 5 | it works most of the time - which is better than people | May 13, 2011 1:13 PM |
| 6 | several presentations did not post due to large raw file size | May 10, 2011 5:24 AM |

## Q2. How would you rate the following?

| | | |
|---|---|---|
| 1 | I used Camtasia only once at home and posted it on Blackboard for my students. The training session was helpful and easy to understand. I'd like to use it if I have a chance. It would be good if the captured screen is a little bigger. | May 31, 2011 1:17 PM |
| 2 | chris pahud and mary simone and her staff john and jessica did a great job of getting the faculty class room capture software to work. It took a lot of behind the scenes troubleshooting to pull this off. great job folks. | May 24, 2011 5:51 AM |
| 3 | I attribute the success of the camtasia recordings to the efforts of Chris Pahud. If it weren't for him checking the equipment every week to make sure everything was working properly, I would not have been as satisfied. Being in the Archives building is a bit of a challenge as well. | May 9, 2011 8:49 AM |

## Q3. How much time after the semester terminates, do you wish IT to retain your recorded files

| | | |
|---|---|---|
| 1 | There is no place to check other! We would like IT to retain these recordings indefinitely. We have links to the recordings on the SSMC website and would like them to be available for the life of the 5 year project. | May 23, 2011 1:04 PM |

## Q5. Please provide us with personal contact information.

### Name:

| | | |
|---|---|---|
| 1 | Kayo Yoshida | May 31, 2011 1:17 PM |
| 2 | Christopher Pahud | May 24, 2011 8:08 AM |
| 3 | robert.fitzgerald | May 24, 2011 5:51 AM |
| 4 | Lois Biener | May 23, 2011 1:04 PM |
| 5 | Basye Hendrix | May 18, 2011 8:21 PM |
| 6 | steven ackerman | May 13, 2011 1:13 PM |
| 7 | David Pruett | May 10, 2011 5:24 AM |
| 8 | Esther Seibold | May 9, 2011 8:49 AM |
| 9 | Jacqueline Fawcett | May 9, 2011 8:02 AM |

### Department

| | | |
|---|---|---|
| 1 | Modern Languages | May 31, 2011 1:17 PM |
| 2 | Classroom Technology Support | May 24, 2011 8:08 AM |
| 3 | it media sevices | May 24, 2011 5:51 AM |
| 4 | Center for Survey Research | May 23, 2011 1:04 PM |
| 5 | Communication Studies | May 18, 2011 8:21 PM |
| 6 | bio | May 13, 2011 1:13 PM |
| 7 | Performing Arts | May 10, 2011 5:24 AM |
| 8 | Nursing | May 9, 2011 8:49 AM |
| 9 | Nursing | May 9, 2011 8:02 AM |

### Email Address:

| | | |
|---|---|---|
| 1 | kayo.yoshida@umb.edu | May 31, 2011 1:17 PM |
| 2 | christopher.pahud@umb.edu | May 24, 2011 8:08 AM |
| 3 | robert.fitzgerald@umb.edu | May 24, 2011 5:51 AM |
| 4 | lois.biener@umb.edu | May 23, 2011 1:04 PM |
| 5 | basye.hendrix@umb.edu | May 18, 2011 8:21 PM |
| 6 | steven.ackerman@umb.edu | May 13, 2011 1:13 PM |
| 7 | david.pruett@umb.edu | May 10, 2011 5:24 AM |
| 8 | esther.seibold@umb.edu | May 9, 2011 8:49 AM |

**Q5. Please provide us with personal contact information.**

| | | |
|---|---|---|
| 9 | jacqueline.fawcett@umb.edu | May 9, 2011 8:02 AM |

| | Phone Number: | |
|---|---|---|
| 1 | 617-287-7561 | May 31, 2011 1:17 PM |
| 2 | 7-5975 | May 24, 2011 8:08 AM |
| 3 | 781-287-5965 | May 24, 2011 5:51 AM |
| 4 | 6172877200 | May 23, 2011 1:04 PM |
| 5 | 978 973 3742/c | May 18, 2011 8:21 PM |
| 6 | 6172876682 | May 13, 2011 1:13 PM |
| 7 | 615-848-8666 | May 10, 2011 5:24 AM |
| 8 | 617-287-7567 | May 9, 2011 8:49 AM |
| 9 | 7-7539 | May 9, 2011 8:02 AM |

**SERVICE:** CAMTASIA RELAY- STUDENTS
**DEMOGRAPHIC:**
Students; average ages= 24-3-; 50% respondents male and female; 50% had a first language other than English.
**FULL RESULTS:** attached pdf
**HIGHLIGHTS:** 76.9% access recordings from home; 84.6% watch the recordings a great deal; 92.3% were satisfied with the technical quality of recordings; 76.9% learned more than expected because of recordings.
**ANALYSIS:** Students are very pleased with service and find it indispensable to their learning.

## SOME STUDENTCOMMENTS:

1. Sometimes I run a little late and I miss the first half of the lecture. Sometimes I have a paper to write and I skip class all together. Whatever the case I know that I can always attend the lecture because of Camtasia, It is the best. It gives me the ability also to go back to a lecture and review.

2.I loved the course recordings. There were always there to listen to if you missed a class. It was very convenient for staying on top of the lectures. I wish everyone did it.

3.When the course is as hard as molecular biology you sometimes miss important ideas in class, but this program allows you to come back home and listen to whatever you missed during lecture.

4. Gave me the flexibility to listen to the lectures over and over to get all of the details. It was great listening to the lectures at my own schedule and pace.

5.These recordings made this course more desirable and I will recommend it to everyone who wants to learn the valuable information Dr. Ackerman has to offer. I enjoyed the class thoroughly and used the recordings on regular basis due to the class time which did not make getting to campus very easy for commuters who have to drive into Boston between 7 and 10 AM.

**SERVICE:** CAMTASIA RELAY- FACULTY AND STAFF
**DEMOGRAPHIC:**
Faculty and Staff;
**FULL RESULTS:** attached pdf
**HIGHLIGHTS:** 55.6 percent were very satisfied; 44.4% somewhat satisfied; 66.7% were satisfied with training. All technical support, troubleshooting, smart classroom support received above 50% satisfaction; lowest rating is for wireless microphones whereby 44.4% satisfied.
**EVALUATION:** Overall, faculty satisfaction is excellent or good. However, he biggest challenge to delivering consistently good Camtasia performance is in backend support. We should extend the support to training all the media lab technicians in the use of the wireless microphone, and in processing and upload of files. This would greatly improve overall satisfaction in the areas that were not as highly rated. Also, we will have to commit more monies that previously estimated to continue storage of recordings. Faculty wishes to retain recordings up to 5 Years! We will have to offer training to faculty on how to download their recordings and save them on their external hard drives.

**SOME FACULTY COMMENTS:**

1.I attribute the success of the camtasia recordings to the efforts of Chris Pahud. If it weren't for him checking the equipment every week to make sure everything was working properly, I would not have been as satisfied. Being in the Archives building is a bit of a challenge as well.

2. Several presentations did not post due to large raw file size.

3.it works most of the time - which is better than people.

4.I used Camtasia only once at home and posted it on Blackboard for my students.

5. It would be good if the captured screen were a little bigger
Chris Pahud and Mary Simone and her staff john and Jessica did a great job of Getting the faculty classroom capture software to work. It took a lot of behind the scenes troubleshooting to pull this off. Great job folks.

**SERVICE:** Digital Learning Studio
**DEMOGRAPHIC:** Faculty and Staff

**FULL RESULTS:** attached pdf
**HIGHLIGHTS:** Great satisfaction with consultants by those surveyed: 81.3% stated that service was very good. 68.8% of 16 clients surveyed have met with consultants in the DLS offices, while 31.3% work with media production specialists on the lab floor. However, 43.8 % of all clients do also work independently on the floor. The types of projects that clients surveyed are most active in are: 43.8% audio and video editing and 37.5% blackboard and wikispaces respectively. Camtasia, web browsing and Adobe usage is equal at 37.5%. No clients worked on iTunes.
**ANALYSIS:** The most valuable data from this survey is in the area of suggestions for DLS service portfolio in the training area of question 4. It is not surprising that 62.5 % clients prefer one on one consultation to any other form of training. Although, 50.8% would like an online manual to be used as a self-directed tutorial. There are also suggestions about need for training in Adobe CCS5, making podcasts, working with imovie, final cut pro, advanced web publishing, and marketing media.

**SOME CLIENT COMMENTS:**
Service is very good, but hours are rather limited. Is it possible to hire more staff? or students to expand open hours closer to main library's? I know, wrong time of the century to seek changes related to health of the economy, but it'd help, especially for those faculty with late aft or evening schedules

There should have been an option for EXCELLENT!
John was excellent and very patient

**SERVICE:** Language Lab
**DEMOGRAPHIC:** FACULTY, 1200 STUDENTS SERVED

**FULL RESULTS:** attached pdf
**HIGHLIGHTS:** 92.3% of language faulty very satisfied or satisfied with services; 91.7% use blackboard; 10% use wimba voice tools; 30% use webcape placement tests; 45.5% UL computer lab for languages (red); 20% use SCOLA
**ANALYSIS:** language Faculty do not find Wimba adequate for their oral proficiency needs of student. The lab will launch a roll out of Voice Thread in fall to fill this need. Faculty would like monthly updates about lab consultant support, and so we will try to put out a newsletter blog monthly for this purpose. SCOLA will be dropped because its usage does not warrant limited demand. The monies have been applied to Voice Thread. Recommendation to work on a web based app for Pin yin tones with Chinese faculty. Also, in Fall some workshops in the services of blackboard and wiki, and voice thread will be especially targeted for language faculty.

**SOME FACULTY COMMENTS:**
Overall, I am completely satisfied and giving credit to staff for their good performance and flexibility. I would be interested in obtaining consultations on using software through a blog or a messange (sic)

Always done well and in plenty of time for the semester. Thank you!
Every semester the language lab and Blackboard staff help us to build the Blackboard class, which include all recordings for the textbook. That is very nice. However, I don't think many of my colleagues are fully equipped with the knowledge to use other tools in Blackboard. Training specifically targeting language professors is necessary and helpful.
Overall, I am completely satisfied and giving credit to staff for their good performance and flexibility. I would be interested in obtaining consultations on using software through a blog or a messanger

**SERVICE:** CIT and EDTECH conference 2011
**DEMOGRAPHIC:** Faculty and Staff

**FULL RESULTS:** attached pdf

**HIGHLIGHTS:** Surveys were filled out for each session, and for overall conference. The surveys were administered in paper for the sessions. However, we received only 9 completed surveys on paper for overall evaluation. An email link was sent out after the conference to over 100 attendees, we received 25 responses.

**ANALYSIS:** The overall conference evaluation was a success in all categories. Attendees would like to see more publicity for the event in the future. The combination of CIT and EDTech together offered a good variety of sessions. Of course, as in all events, not everyone can be pleased. There were comments about bad elevators, bad food, bad logistics, bad registration, and bad presentation rooms. These comments were a minority.

**SOME ATTENDEE COMMENTS:**
1. A great conference overall. Running the two conferences together seemed to work very well. Keep them together in the future.

I thought the combination of IT and CIT worked well, although I didn't have a chance to attend sessions that did not feature technology. If the conferences are combined in the future, maybe there could be ways to combine non-technology and technology presentations in the same sessions. This would showcase both types of teaching and learning.

5 I'm not sure if this was addressed in any of the sessions, but I think it's important to theorize "textual appropriation," an increasingly important practice in a digital Age.

6 Good variety

7 Great selection of topics.

8 I was very happy to see the sessions (I attended) focused on teaching and learning enabled by technology, not driven by it. I think too often technology becomes the focus of sessions/conferences. Often there are many technologies that can do similar things so specific sessions on "I use [insert latest technology]" are less valuable than "I do [insert teaching or learning activity]." To further this, I would love to see sessions where presenters who have similar teaching styles or objects talk about how they are achieving their goals but with different technologies. One presentation this year that highlights this was a session on tracking student changes or versions of written assignments. One professor showed how she did this using Blackboard and another using WikiSpaces. That said, I also think there should be some (perhaps a larger session) on adopting multiple technologies across the campus, program or course. Great, great, great

# ED TECH OPERATIONS - LAB SURVEYS
## Technology & Support

### Q1. Did the audio visual and computer equipment function?

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Functioned perfectly | 46.6% | 27 |
| Some equipment functioned | 50.0% | 29 |
| Most did not function | 3.4% | 2 |
| answered question | | 58 |
| skipped question | | 8 |

- Functioned perfectly 46.6%
- Some equipment functioned 50.0%
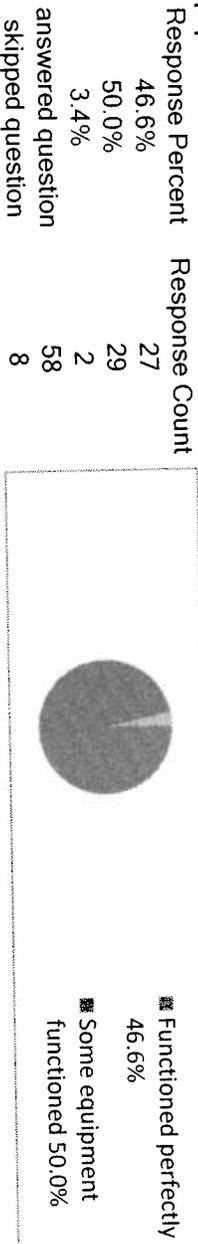
### Q2. If you encountered problems with equipment, was it fixed in a timely manner?

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Within 5 minutes | 43.1% | 25 |
| Less than 15 minutes | 25.9% | 15 |
| More than 15 minutes | 17.2% | 10 |
| Not fixed | 13.8% | 8 |
| answered question | | 58 |
| skipped question | | 8 |

- Within 5 minutes 43.1%
- Less than 15 minutes 25.9%
- More than 15 minutes 17.2%
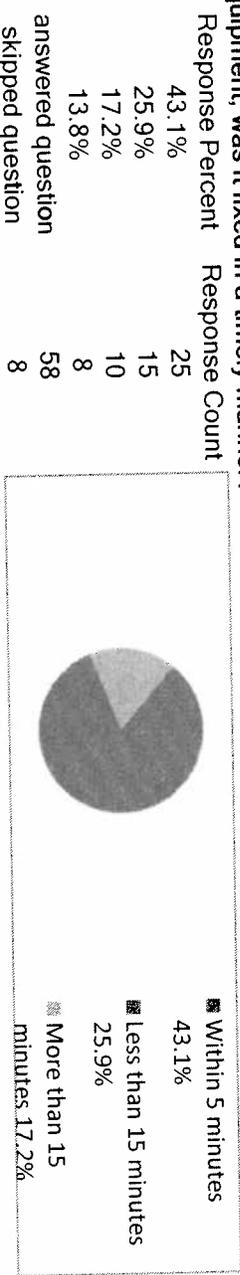
### Q3. Was the setup of the equipment easy to use?

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Very easy | 53.4% | 31 |
| Easy | 37.9% | 22 |
| Fairly easy | 8.6% | 5 |
| Not easy | 0.0% | 0 |
| answered question | | 58 |
| skipped question | | 8 |

- Very easy 53.4%
- Easy 37.9%
- Fairly easy 8.6%
- Not easy 0.0%
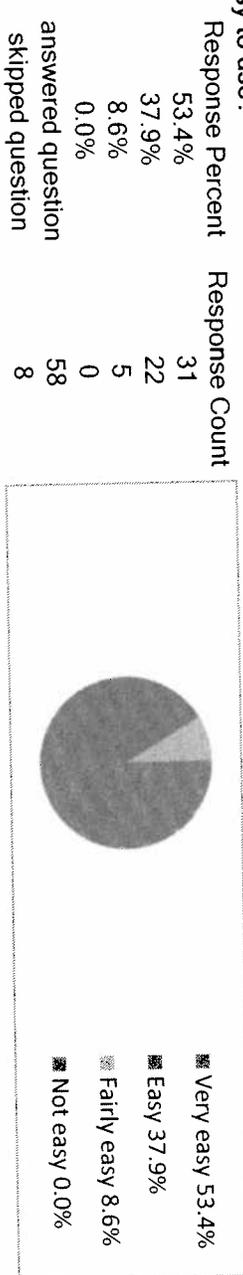
### Q4. Did the configuration and set up of the podium and workstations meet your needs?

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 84.5% | 49 |
| No | 15.5% | 9 |
| answered question | | 58 |
| skipped question | | 8 |

- Yes 84.5%
- No 15.5%
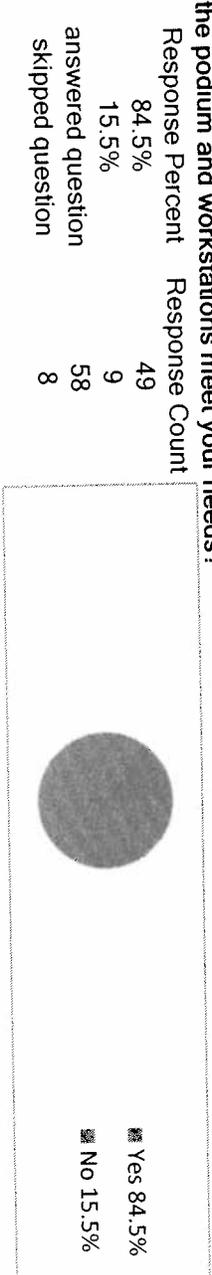
# ED TECH OPERATIONS - LAB SURVEYS
## Technology & Support

### Q5. Was the room clean?

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Very clean | 17.2% | 10 |
| Clean | 58.6% | 34 |
| Fairly clean | 22.4% | 13 |
| Not clean | 1.7% | 1 |
| answered question | | 58 |
| skipped question | | 8 |



- Very clean 17.2%
- Clean 58.6%
- Fairly clean 22.4%
- Not clean 1.7%
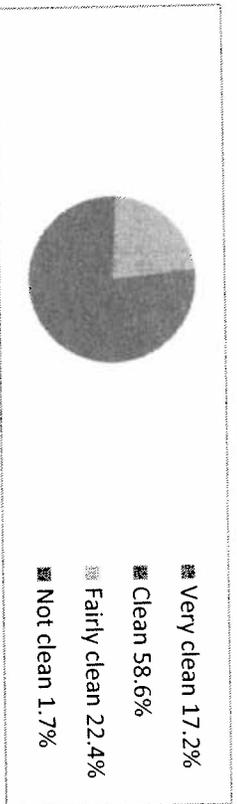
### Q6. Was the staff helpful?

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Very helpful | 65.5% | 38 |
| Helpful | 25.9% | 15 |
| Fairly helpful | 6.9% | 4 |
| Not helpful | 1.7% | 1 |
| answered question | | 58 |
| skipped question | | 8 |



- Very helpful 65.5%
- Helpful 25.9%
- Fairly helpful 6.9%
- Not helpful 1.7%
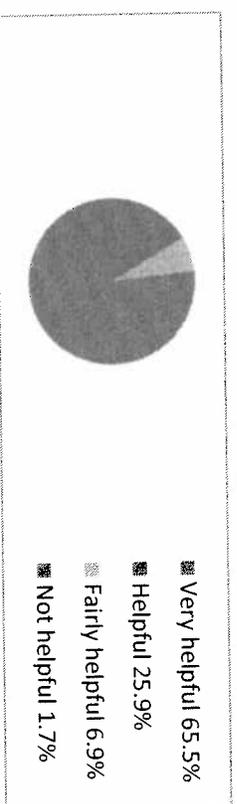
### Q7. Was the staff courteous?

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Very courteous | 72.4% | 42 |
| Courteous | 19.0% | 11 |
| Fairly courteous | 6.9% | 4 |
| Not courteous | 1.7% | 1 |
| answered question | | 58 |
| skipped question | | 8 |



- Very courteous 72.4%
- Courteous 19.0%
- Fairly courteous 6.9%
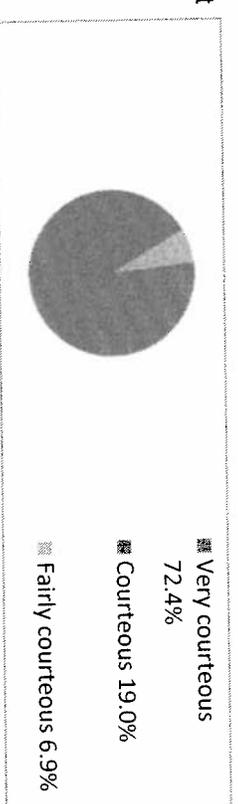
### Q8. How was the service you received overall?

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Excellent | 53.4% | 31 |
| Very Good | 36.2% | 21 |
| Fairly Good | 3.4% | 2 |
| Not Good | 6.9% | 4 |
| answered question | | 58 |
| skipped question | | 8 |



- Excellent 53.4%
- Very Good 36.2%
- Fairly Good 3.4%
- Not Good 6.9%
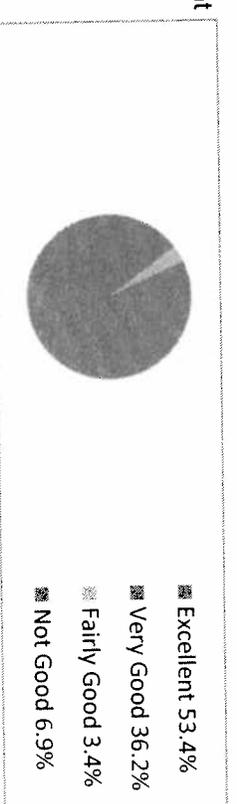
# Survey Answers By Question

UMASS
BOSTON

## IT Client Services – Customer Survey

| 1) Has your issue been completely resolved to your satisfaction? | Count | % |
|---|---|---|
| **Answers: (Only one answer was allowed)** | 231 | 94 % |
| Yes | 14 | 6 % |
| No | | |

| 2) Would you like someone to follow up with you on this matter? | Count | % |
|---|---|---|
| **Answers: (Only one answer was allowed)** | 24 | 10 % |
| Yes | 221 | 90 % |
| No | | |

| 3) How would you rate the OVERALL ability of our service representatives to help you or find someone who could? | Count | % |
|---|---|---|
| **Answers: (Only one answer was allowed)** | 185 | 76 % |
| Excellent | 35 | 14 % |
| Very Good | 13 | 5 % |
| Good | 6 | 2 % |
| Fair | 6 | 2 % |
| Poor | | |

| 4) How would you rate the ability of the service representative who eventually solved your problem to understand the issue and find the solution? | Count | % |
|---|---|---|
| **Answers: (Only one answer was allowed)** | 198 | 81 % |
| Excellent | 30 | 12 % |
| Very Good | 7 | 3 % |
| Good | 2 | 1 % |
| Fair | 8 | 3 % |
| Poor | | |

| 5) How would you rate the amount of time it took between your initial contact with the IT Service Desk and the first contact from the person who eventually resolved your problem? | Count | % |
|---|---|---|
| **Answers: (Only one answer was allowed)** | 159 | 65 % |
| Excellent | 43 | 18 % |
| Very Good | 12 | 5 % |
| Good | 13 | 5 % |
| Fair | 18 | 7 % |
| Poor | | |

| 6) Taking into account the complexity of your problem, how would you rate the amount of time it took to finally resolve your problem? | Count | % |
|---|---|---|
| **Answers: (Only one answer was allowed)** | 169 | 69 % |
| Excellent | 43 | 18 % |
| Very Good | 10 | 4 % |
| Good | 6 | 2 % |
| Fair | 17 | 7 % |
| Poor | | |

**7) Comments:**

**Answers: (Only one answer was allowed)**

essay

| | Count | % |
|---|---|---|
| | 0 | 0 % |

# CIT and EDTECH CONFERENCE 2011 EVALUATION

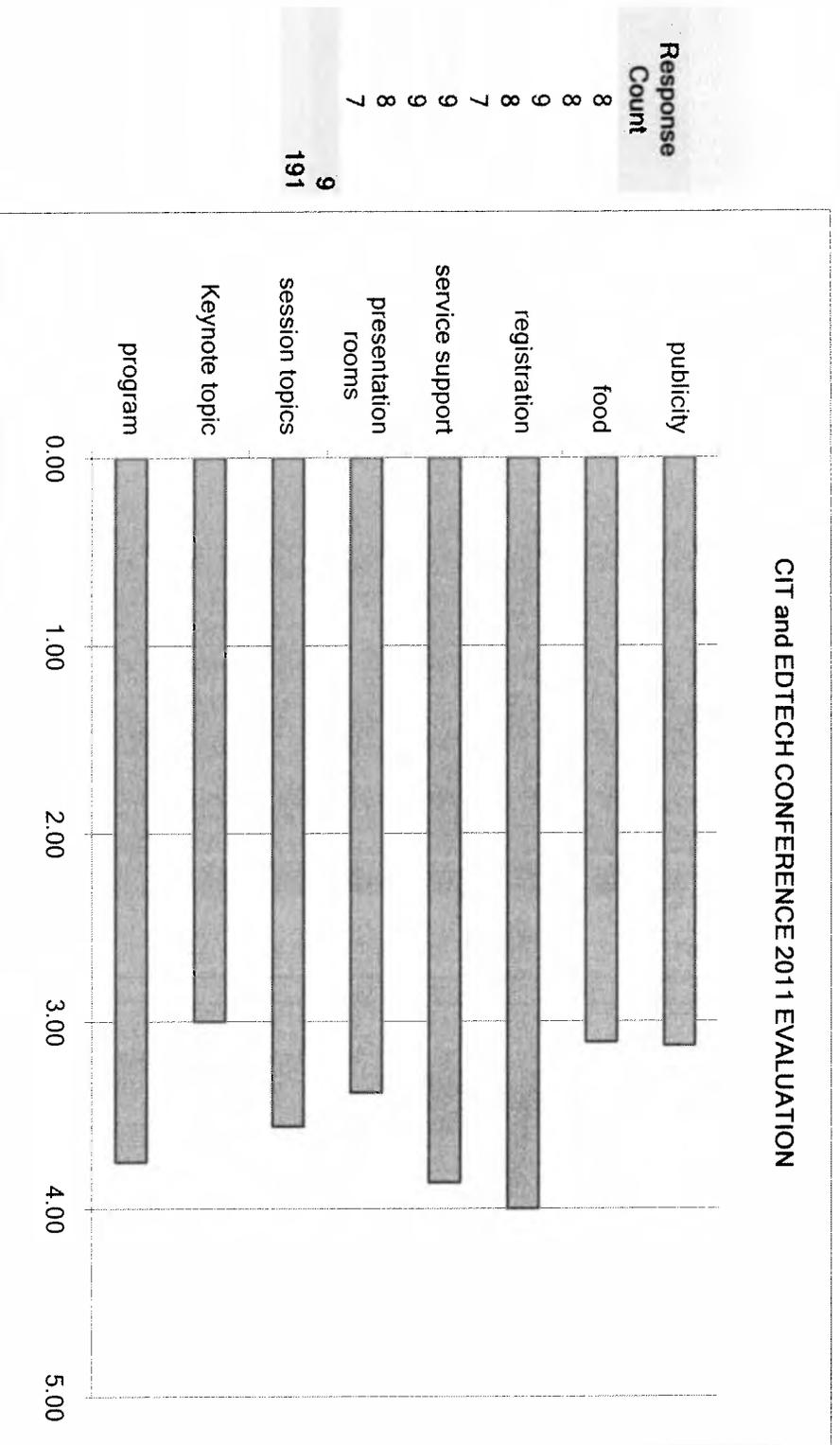Please provide an overall rating for this conference. include feedback to the planning committee.

| Answer Options | very good | good | fair | needs improvement | Rating Average |
|---|---|---|---|---|---|
| program | 6 | 2 | 0 | 0 | 3.75 |
| Keynote topic | 5 | 0 | 1 | 2 | 3.00 |
| session topics | 5 | 4 | 0 | 0 | 3.56 |
| presentation rooms | 5 | 2 | 0 | 1 | 3.38 |
| service support | 6 | 1 | 0 | 0 | 3.86 |
| registration | 9 | 0 | 0 | 0 | 4.00 |
| food | 3 | 4 | 0 | 0 | 3.11 |
| publicity | 4 | 1 | 3 | 0 | 3.13 |
| | | | | answered question | |
| | | | | skipped question | |

Please write any feedback comments to the presenters in the space provided.

| Number | Response Date | Please write any feedback comments to the presenters in the space provided. Categories |
|---|---|---|
| 1 | May 19, 2011 2:09 PM | CIT ignored too much in keynote⊞More writing options needed in sessions⊞Need a wt |
| 2 | May 19, 2011 2:08 PM | coffee in the afternoon please! diet sodas for lunch. |
| 3 | May 19, 2011 2:08 PM | presentation rooms needed a blackboard or a whiteboard, or a paper set. i felt like the |
| 4 | May 19, 2011 2:08 PM | Sessions are too long . Keynote not interesting |
| 5 | May 19, 2011 2:07 PM | The presentation rooms in LL are definitely better than other rooms in Floor 3 & 4. The |
| 6 | May 19, 2011 2:07 PM | Excellent, well organized, conference. |
| 7 | May 19, 2011 2:07 PM | presentation rooms were cold. ⊞all but the first session of the day went over the time li |

CIT and EDTECH CONFERENCE 2011 EVALUATION

| | Response Count |
|---|---|
| publicity | 8 |
| food | 8 |
| registration | 9 |
| service support | 8 |
| presentation rooms | 7 |
| session topics | 8 |
| Keynote topic | 9 |
| program | 9 |
| | 7 |
| | 8 |
| | 9 |
| | 191 |
| | 9 |

iteboard in presentation rooms

cit folks were ignored at the keynote/lunch.

white lab, especially, has a big background noise.

mit. it made rest of day seem rushed/over scheduled.session handouts would be most appreciated.

# Language Faculty Technology Interests 2011

SurveyMonkey

## 1. Are you satisfied with the language lab support services that you receive from the Digital Learning Studio

|  | | Response Percent | Response Count |
|---|---|---|---|
| very much | | 53.8% | 7 |
| yes | | 38.5% | 5 |
| somewhat | | 0.0% | 0 |
| not much | | 7.7% | 1 |
| | Please write any comment concerning services or staff here. | | 2 |
| | | answered question | 13 |
| | | skipped question | 0 |

## 2. Rate the following categories of technology as they relate to your teaching and your students learning.

| | Currently Using | Would Like to Use | Would Like To Learn | Not Relevant | Response Count |
|---|---|---|---|---|---|
| Blackboard language lab for courses | **91.7% (11)** | 0.0% (0) | 0.0% (0) | 8.3% (1) | 12 |
| UMASS BOSTON language lab website | **41.7% (5)** | 8.3% (1) | 8.3% (1) | **41.7% (5)** | 12 |
| computers in UL Red computer Lab for language lab website access | **45.5% (5)** | 9.1% (1) | 9.1% (1) | 36.4% (4) | 11 |
| Wimba Voice tools for Blackboard labs | 10.0% (1) | **30.0% (3)** | **30.0% (3)** | **30.0% (3)** | 10 |
| Adobe Creative Suite 5 | 0.0% (0) | 30.0% (3) | 20.0% (2) | **50.0% (5)** | 10 |
| Camtasia (Classroom Capture) -- Records audio and captures your screen for viewing via the web | 10.0% (1) | 20.0% (2) | 30.0% (3) | **40.0% (4)** | 10 |
| Microsoft IT Academy Training -- An online training program covering a wide variety of Microsoft products | 0.0% (0) | 11.1% (1) | **55.6% (5)** | 33.3% (3) | 9 |
| Wikispaces -- A website that allows for easy creation and editing of content for collaboration | 10.0% (1) | **50.0% (5)** | 30.0% (3) | 10.0% (1) | 10 |
| Blog - EduBlog -- a type of website, usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. | 0.0% (0) | **40.0% (4)** | 20.0% (2) | **40.0% (4)** | 10 |
| Webcape- foreign language placement tests | **30.0% (3)** | 10.0% (1) | **30.0% (3)** | **30.0% (3)** | 10 |
| SCOLA foreign language broadcasts | 20.0% (2) | 10.0% (1) | **50.0% (5)** | 20.0% (2) | 10 |
| Voice Thread | 9.1% (1) | **45.5% (5)** | 18.2% (2) | 27.3% (3) | 11 |
| | | | | answered question | 13 |
| | | | | skipped question | 0 |

## 3. Name any software or instructional support service which you are you interested in receiving from the DLS that is not currently available to you ?

|  | Response Count |
|---|---|
|  | 13 |
|  |  |
| answered question | 13 |
| skipped question | 0 |

## 4. Please comment on the quality of the language service support that you have received from the the Digital Learning Studio and mention any service you would like to receive or you would like your students to receive in the future.

|  | Response Count |
|---|---|
|  | 13 |
|  |  |
| answered question | 13 |
| skipped question | 0 |

**Q1. Are you satisfied with the language lab support services that you receive from the Digital Learning Studio**

| 1 | I really haven't had the time to contact the Digital Learning Studio so I don't even have much of a sense of how helpful they could be! | May 28, 2011 1:28 PM |
|---|---|---|
| 2 | I always got help and answers to my questions in a speedy manner that I greatly appreciate. | May 11, 2011 10:52 AM |

**Q3. Name any software or instructional support service which you are you interested in receiving from the DLS that is not currently available to you ?**

| | | |
|---|---|---|
| 1 | I would be very interested in working with other faculty in Chinese and DLS to set up a web-based workbook for Chinese pinyin and tones. Ideally the web site would allow students to listen to very short sound files (1-3 syllables each) and enter their guess at the spelling using the keyboard. The website would then provide feedback (correct/incorrect) and allow students second and third chances at incorrect answers. Final score would be recorded for instructor access. I don't know if this is something that DLS would be able to help us put together? | May 28, 2011 1:28 PM |
| 2 | Not aware of any. | May 26, 2011 9:08 AM |
| 3 | I would like some hands on training on my wiki account. | May 24, 2011 10:14 AM |
| 4 | None. | May 24, 2011 4:37 AM |
| 5 | n/a | May 23, 2011 6:29 PM |
| 6 | None | May 23, 2011 2:31 PM |
| 7 | NONE | May 13, 2011 5:54 PM |
| 8 | I cannot name anything, but I can say that the voice box in Blackbox is cumbersome and often leads to access issues, and therefore complaints. | May 13, 2011 4:11 PM |
| 9 | Nothing in particular, but I would like to get a regular update of what resources are available for teaching at least a month before a new semester starts, so plans to incorporate these tools can be made accordingly. | May 12, 2011 9:19 PM |
| 10 | What is Voice Thread? | May 12, 2011 2:35 PM |
| 11 | None at this time. | May 11, 2011 3:34 PM |
| 12 | Wimba Voice tools  EduBlog Webcape | May 11, 2011 10:52 AM |
| 13 | 1 organized semester long seminar taylored to the needs of  foreign language professors | May 11, 2011 9:15 AM |

**Q4. Please comment on the quality of the language service support that you have received from the the Digital Learning Studio and mention any service you would like to receive or you would like your students to receive in the future.**

| | | |
|---|---|---|
| 1 | See answers to questions 1 and 3. Also, support with wikispaces for skit writing, recording, and placing online with password protection. Thanks! | May 28, 2011 1:28 PM |
| 2 | Excellent quality, very satisfied. Thank you. | May 26, 2011 9:08 AM |
| 3 | I would like my online students to be aware of this resource , may be there could be an announcement of the content page of online classes... | May 24, 2011 10:14 AM |
| 4 | Everything is perfect now. | May 24, 2011 4:37 AM |
| 5 | n/a | May 23, 2011 6:29 PM |
| 6 | No complaints. | May 23, 2011 2:31 PM |
| 7 | GOOD | May 13, 2011 5:54 PM |
| 8 | I teach online, so my contact is indirect. I do think that most of the time, the students' needs are met, when they contact the help line. | May 13, 2011 4:11 PM |
| 9 | Every semester the language lab and Blackboard staff help us to build the Blackboard class, which include all recordings for the textbook. That is very nice. However, I don't think many of my colleagues are fully equipped with the knowledge to use other tools in Blackboard. Training specifically targeting language professors is necessary and helpful. | May 12, 2011 9:19 PM |
| 10 | It has been fine for what I've needed. | May 12, 2011 2:35 PM |
| 11 | Always done well and in plenty of time for the semester. Thank you! | May 11, 2011 3:34 PM |
| 12 | Overall, I am completely satisfied and giving credit to staff for their good performance and flexibility. I would be interested in obtaining consultations on using software through a blog or a messanger. | May 11, 2011 10:52 AM |
| 13 | I stopped using these services because i cannot keep up with all the changes/innovations that really do not improve education (for they are a function of marketing strategies by publishing houses and other for profit technology driven enterprises). In addition, they tend to infantilize university education by providing instruction at the lowest possible communicative level. Foreign language education at the University level should not me the same as foreign language education in high school. I realize this is not the fault of the Language Lab at UMB, but as long as it joins the above mentioned marketing trends, I will have no use for the lab in any of my courses. | May 11, 2011 9:15 AM |

Instructional Technology Survey Results

In our first customer satisfaction survey conducted in Instructional Support, we received 36 responses from faculty. Of those respondents, 27 (or 75%) gave the higest possible overall rating--"Excellent: Often Exceed Expectations." Another 7 faculty members ( or 20%) rated our staff and services as "Good: Meets Expectations." Only 2 (or 5.7%) gave the rating "Average: Usually Meets Expectations; Concerns Remain."

The most common method for contacting our staff was via email. Significantly, approximately one third of respondents had used the shared support email address published on our Blackboard login page to request assistance. This is a departmental account that our staff monitor regularly on a rotation, and we place high importance on prompt response and resolution to issues reported, as well as answering questions of a general nature. A cross-tabulation of those respondents who use this shared account and those who rated us as excellent reveals a high correlation between these two variables.

--Mark

# Appendix 3:
# ITSD Professional Development Activities

*ITSD participates in the following professional organizations:*

ACUTA
EDUCAUSE
North East Regional Computing Program (NERCOMP)
Open Courseware Consortium (OCWC)
Project Management Institute (PMI)
Quality Matters (Inter-institutional Quality Assurance in Online Learning)
Society for Information Management (SIM) – Boston Chapter
Society of College and University Planners (SCUP)


*ITSD staff members participated in the following training/professional development:*

Formal Classes
Doctoral Program, Law and Policy, Northeastern University
UMass Boston, CS615, Database Technology Certificate Program
EEOS 370 Remote Sensing (requirement for GIT certificate) Fall 2010

Conferences/Meetings
AcademiX 2011
ACUTA 2011 Annual Conference
An Event Apart (for Web Professionals)
BATEC
Boston College Ed. Tech Day
Boston College Security Boot Camp
Boston PHP Conference
Campus Technology 2010 Annual Conference
CIT/Educational Technology Conference, May 12, 2011
CollegeNet Annual Conference
CollegeNet X25 Customer Focus Panel
EDUCAUSE 2010 Annual Conference
Emerging Technologies for Online Learning [week-long Annual Sloan-C conference in San Jose, CA
Framingham State College EdTEch Day
HEUG, PeopleSoft  2010 Annual Conference
Inspire, ImageNow Annual Conference for Document Management
Last Hope Conference on System Security
NERALLT Fall and Spring Conferences
NERCOMP 2011 Annual Conference
NERCOMP SigMaster Meeting
N.E. HEAT User Groups

N.E. Series25 User Group
Northeastern University EdTech Day
Open Course Ware Consortium Global Conference 2011
PKAL National Colloquium: What We Know About Planning Learning Spaces and What We Still Need to
Know - November 5 - 7, 2010 – Virginia
Project Management Institute, Mass Bay Chapter
Securing the e-Campus 2010
Society of College and University Planners 2010 Annual Conference
Society of Information Managers CIO Summit 2011
Teaching with Technology mini-conference 2011
VMWare Virtual World

Workshops/Training
25Live Workshop
Accommodating Students with Disabilities [Sloan-C Workshop]
Apple X Seminar
BATEC Google workshop
BATEC Photoshop workshop
Behind the Scenes: Producing for the Synchronous Classroom [insynctraining.com]
Best Practices in Online Instruction [wimba.com webinar series]
Best Practices for Polling in the Online Classroom [Insynchtraining]
Blended Learning: Using the HyFlex Course and Design Process (Sloan-C Workshop)
Capturing Classroom Lecture with Camtasia
Collaboration and Sharing in Xythos
Connectivism & Connected Knowledge 2011
Data Analysis using SPSS, Northeastern University
Designing for the Virtual Classroom [Dr. Anne Kwinn]
Digital Chalk Demo [digitalchalk.com]
Dreamweaver
Dynamic Collaboration, Discussion, and Facilitation Practices (Sloan-C Workshop)
Editing Your Web Site
Ellis Lab, Expression Engine CMS Training at UMass Boston
EPO Training
Fair Use and the TEACH Act (Sloan-C Workshop)
Flattening the Classroom: Building Collaborative Learning Environments [Educause]
Games Synchronous Trainers Play [Bozarthzone!]
Grant Training, Northeastern University
Have your Cake and eat it Too! Online  faculty development programs using wimba classroom .mp4
archives
How to Learn Online [insynctraining.com]
How to teach Software Applications Online [insynchtraining.com]
HR Self Service User and Manager training
Intro to PHP Sitepoint course
Learning Google Analytics
MERLOT 101: An Introduction to MERLOT (Sloan-C Workshop)
Mobile Learning in Higher Education – September 2010
MobiMOOC

Navigating Copyright in Higher Ed: UMass Online meeting
NERCOMP, Deploying Usability Testing & Web Analytics for User-Centered Digital Interfaces
NERCOMP, Security Awareness
NERCOMP SIG  Mobile Devices
NERCOMP, Mobile Learning in Higher Education
NERCOMP SIG Final Cut Express
NERCOMP, Web Governance
NERCOMP Windows 7 Deployment
Outlook Mail Management
Persystent training
Photoshop
PMI, Effort Tracking
PMI, Elaborating the WBS
PMI, Implementing ASM
PMI, Project Collaboration Tools
PMI, Phased Earned Value Management
PMI, Showing PMO Value
PMI, Top Ten Laws of Program Management,
Podcasting in Higher Education: Current Trends and Applications [Sloan-C Workshop]
Presentation BootCamp Nercomp Sig
Read & Write Gold training
Research Collaboration in Virtual Spaces
Sexual Harassment Training
Simulations in Higher Ed [wimba.com webinar series]
Speaking with Sizzle, Substance, and Style [insynctraining.com]
SQL Saturday
Ten Learned Commandments
The 10 Biggest Myths about Synchronous Online Teaching [wimba.com]
Top 10 Tips of Effective Application Training in the Virtual Classroom [insynctraining.com]
The other side of the Coin: Asserting Fair use rights, NERCOMP SIG Meeting
The Synchronous Training Primer [insynctraining.com]
Using CSS3 & HTML5 Sitepoint course
Using Sakai to meet accreditation standards, Roger Williams University
Using the Quality Matters Rubric to Improve Your Online Course (Sloan-C Workshop)
VMWare Spirit Boston
What Guild Research Has to Say about e-learning trends [e-Learning webinar]
When the Social, not the Medium, is the Message: A Workshop on Community-building and
Learning Design – UMOL -  Dr. James Dalziel: July 2010
Windows 7 MacAcademy Training
Writing for the Web
Wikispaces
Xythos Training at ICI
X25 Training

Participation in University and other Professional Committees
Academic Council
Academic Technology Committee
Administration and Finance Advisory Group

Administration & Finance Policy Council
Blackboard Collaborate Product Advisory Board
Bloomberg Project poster planning meetings
Camtasia Upgrade Committee
CCNE Site Visit – CNHS Accreditation
Classroom Technology Committee
Commencement Committee
Distance Learning Workgroup
eLearning Cabinet (UMass)
EdTech Annual Conference Planning Committee
EdTech Newsletter Committee
Facilities – Assistant Director of Trades – Search Committee
Faculty Development Committee
General Academic Building Steering Committee
HR – Organizational Development Director – Search Committee
Implementation Design Team for UMass Boston Strategic Plan
Integrated Science Complex Steering Committee
iTunesU Development Committee
Nursing Poster Conference Committee
One-stop Committee
Safety Committee
Security Council
Strategic Planning – Administrative and Physical Support Workgroup
Strategic Planning – Student Employment Sub Group
UMOL Learning Platform Review Committee
UMOL Sync Conferencing workgroup
University of Massachusetts Information Technology Leadership Team
University Master Planning Committee
Various meetings for Posters (Plagiarism, IT Security Awareness, IT Service Desk Logo, Faculty Poster Templates, College of Nursing Showcase Ecard  and Templates)
Web Rearchitecture Leadership Committee

Events Hosted:
Cybersecurity Month Lecture Series, October 2010
Teaching with Technology - College of Nursing and Health Sciences – Poster Session  – Fall 2010
Educational Technology Conference – Spring 2011

# Appendix 4: ITSD Presentations/Publications 2010-2011

<u>Anne Agee</u>
"Building a Research Cyberinfrastructure at a Small/Medium Research University." With Theresa Rowe, Melissa Woo and David Wood. *Educause Quarterly* 33:3 (2010).

"Challenges and Triumphs of Supporting Research at Small to Medium Research Institutions." With Theresa Rowe, Melissa Woo and David Woods. EDUCAUSE National Conference. Anaheim CA. October 2010.

"Technology: Understanding the Challenges and Opportunities." HERS Institute. University of Denver, September 2010; Wellesley College, October 2010; Bryn Mawr College, June, 2011.

"The CIO as a Transformational Leader." CIO Executive Leadership Summit. Boston MA. 10 March 2011.

"Time Management, Prioritization and the Fine Art of Delegation." EDUCAUSE/NERCOMP Managers' Series. Norwood MA. September 2010 and April 2011.

<u>Robert Caron</u>
"R25 Pricing, Event Costing Functionality", NE Regional Series25 User Group, UMass Lowell, January 2011

<u>Ellen Foust</u>
Wimba Voice Tools Poster Session, CNHS/ IT/ University Showcase, December 2, 2011

<u>Alan Girelli</u>
"Two Markets, Two Universities: An Experimental, Cross Cultural, Technological Course" 2011 CIT and Educational Technology Conference. (Submission accepted with minor revision requirements; revision work in progress.)

2011 CIT and Educational Technology Conference: "Transforming Teaching and Learning". Presentation titled "Two Markets, Two Universities, One Blackboard Course Shell," (describing the UC Fall 2010 Online MKT 478 pilot transnational marketing course.)

With Valerie Haven presenting "Inviting Students with Disabilities into the Synchronous Environment: A Case Study" for 2011 Blackboard Collaborate conference session in Las Vegas, July 12, 2011. Presentation regards implications of the accessibility suite deployed for deaf/blind students.

Wimba Classroom Poster Session, CNHS/ IT/ University Showcase, December 2, 2011

<u>Apostolos Koutropoulos</u>
Social Media for the Health Sciences (guest lecture for Victoria Palmer-Erbs, NU212)

Communities of Practice (guest lecture for Sharla McAuliffe, INSDSG603)

<u>Mark Lewis</u>
"Immersion and Continuity: A Blended Model for Introductory Language Courses at the University Level." NERCOMP Annual Conference, Poster Session, Providence RI March 2011

"Key Issues in Learning Objects." CIT / Ed Tech Conference, UMass Boston May 12, 2011

Eileen McMahon

What Teachers Want: Reusing OpenCourseWare in the High School Classroom, OCW Global Conference 2011, Cambridge, MA May 5, 2011

Using Google Analytics for Performance Management and Organizational Development, Ed Tech Conference, UMass Boston, May 12, 2011

Learning and Collaborating with Google Apps, Mass Teachers Conference, Williamstown, MA, August 2010

Credit Where Credit is Due, Copyright, Fairuse and the Creative Commons, Boston High School Teachers Workshops, July 2010

Apurva Mehta

Savings through Helpdesk - ACUTA – Washington DC - October 2010

Linda Modiste, Jim Wyse, Lisa Link, Martha Scanlon
"Web Rearchitecture Project, Lessons Learned." NERCOMP Annual Conference, Poster Session, Providence RI March 2011

Theresa Nelson-Miller
*Using SafeAssign* Poster Session with Sheryl LaCoursiere at CNHS/ IT/ University College Showcase, December 2, 2011

Alexandrine Policar
Doctoral Research Proposal, Northeastern University, September 2010
Doctoral Dissertation Defense/Presentation, Northeaster University, April 2011

Robert Sarao

Public Service Presentation and Posters: "Don't Get Phished."
"Security Awareness on Campus." NERCOMP Annual Conference. Providence RI, March 2011.

Mary Simone

"Transforming Nursing Education with Class Capture technology." Mary Simone and Esther Seibold, DNSc, RN. Poster Session, College of Nursing Health and Sciences and IT/University College Event. UMASS Boston, December 2, 2010.

"Ready, Set, Record with Camtasia Relay." Case Study of UMASS Boston by Mary Simone and Mike Kujansuu for Tech Smith Corporation Newsletter, January 2011.

"Digital  Portfolio Workshops for Chinese Language Teachers." The University of Massachusetts Confucius Institute , January 8, 12 and February 12 and March 15, 2011.

"Training Faculty to integrate WIKIS in foreign language courses at UMASS Boston."  New England Association of Learning Lab Directors.  Connecticut College, March 25, 2011.

"IT and Library Collaborations, the Digital Learning Studio and More." NERCOMP. University of Holy Cross, April 14, 2011.

"Create  Your Own Free Cartoon Avatar." UMASS Boston "Take Our Daughters & Sons to Work Day." April 28, 2011.

"Training Teachers to Integrate Wikis in Foreign Language Classes."  NECLTN, New England Chinese Language Teachers Association, UMASS Boston, May 4, 2011.

# Appendix 5: Selected ITSD Metrics for 2010-2011

## Application Services

### Web Services

- Web Rearchitecture project Strategy, Design, Information Architecture and IT Acceptance Testing Phases for Content Management System (CMS) build completed.
- Received **406** work orders for web development and design services and completed **359**.
- Established moratorium on work orders for existing web site, redeployed IT resources to Web Rearchitecture Project effective May, 2011
- **Over 8.9** million visits to UMass Boston's Main Page, an increase from AY09-AY10 of **70.1%**
- **Over 197** thousand visits to www/umb.edu/m (mobile site launched in May 2010)
- Visited by 216 countries, top 6 are US, Canada, China, India, UK, and Germany
- **Over** 1.2 million visits to the IT Home Page

### Enterprise Applications & Projects

- Provided 90 training sessions in PeopleSoft & Document Imaging for 387 staff members.

### Campus Applications & Database Support

- Use of R25 Class & Event Scheduling for 16,970 classes and 3,310 on campus events

## Client Services
- Total # of tickets created at the service desk: 28,789
    - WISER: 11,006
    - Blackboard: 997
    - Repair Shop: 360
    - Desktop Consultants: 3,702
    - GIS : 42
    - Network: 2,253
    - Faculty/Staff eMail: 1,666
    - Student eMail: 2,963
    - Systems/Servers: 249
    - Web: 144
    - Operations: 152
    - Telecom: 1,650
    - Mobile Device Support: 325

# Communications and Infrastructure

## Video Production Center

- Provided AV Support and Video Recording for over 50 Events in 2010/2011
- Produced over 80 video files for: Chancellor's Office, Office of Government Relations and Public Affairs, University Advancement, Provost Office, Athletics, McNair Program, OLLI Program, Labor Resource Center, McCormack Graduate School, University Communications, etc
- Created over 945 Video File Creations for YouTube, Real Media, Flash Video, Accordent Capture System, etc...
- Over 590,000 views on the UMass Boston YouTube site
- 844 hours of classroom capture services for ITV and Face to Face Classes
- Provided Over 175 hours of Videoconferencing Support
- Spent over 1,120 hours installing new AV equipment or repairing existing equipment in Classrooms, etc...
- Supported 17,354 hours of Wimba Synchronous Meeting sessions
- Created Over 725 Slides for UMB Digital Signage System
- Installed (11) 55" LCD TV Monitors in our Classrooms and Conference Rooms
- Built (6) TEC 1 Classrooms and (1) TEC 2 Classroom
- Installed AV Equipment in 5 Biology Labs
- Installed Accordent Classroom Capture Systems in 3 Classrooms

## Telecom User Services

- 160+ Blackberries in service
- 70+ Iphones in service
- 85 Cell phones in service
- 1687 Helpdesk Tickets processed

## IT Systems & Networking

- Viruses    11804
- Total Messages    49,634,077
- Total Spam    8,657,644
- Annual Spam %    17.44 %

# Educational Technology

## Digital Learning Studio

- Language lab Blackboard courses: 119 blended; 11 online
- 6,101 hits on iTunes U courses
- 6,668 views of 605 recordings
- 361 wiki created, and 3,555 wiki users
- 1012 numbers of visits to DLS media production
- 164 events in media group viewing room ; 1102 number of visitors

## Labs

- **199,910** visits to the UMass Boston Labs

- **1,438** visits to the Adaptive Computing Lab
- **68,944** visits to the Graduate Research Center
- **10,342** class hours held in the labs
- **842** hours of Mobile Classroom Usage
- **1,848,493/1,604** BW/Color Pages printed all Pharos systems
- **360** hours of Decision Making Research Lab Usage (formerly Green Lab)
- **41** Student poster consults and printing
- 119 virtual blackboard language labs; served 1500 students

## Media Services
- Equipment Loans from Media Labs – 14,810
- Service Transactions in TEC's – 7,343
- Special Events Supported – 538
- Over 46,200 hours of laptop usage was documented in the Technology Enhanced Classrooms
- Increased Classroom support of Camtasia Relay program
- Construction of new Level 2 TEC – M-3-204C
- Construction of new Level 1 TEC's – W-3-125 & W-4-122
- Upgrade of multimedia a/v cart in Sm. Science Auditorium
- Upgrade wireless microphone system in H-11-B
- New flat panels installed in M-1-415, 421, M-2-415, 420, 421, M-3-415, W-1—4-, W-4-138, W-4-141, W-5-041

## Training and Instructional Support
- Faculty Consultations: 919
- Blackboard courses: 271 online, 686 web-enhanced, 7 blended
- 485 wikis, 3,294 users, 46,431 individual page edits
- 436 blogs, 431 users, approximately 1,000 people visit the Blog network per week
- 77,585 people visited the UMB OCW site in the past 12 months which consists of 52 published courses
- 453 staff, faculty and student accounts in Google Apps site
- 42 faculty in 25 departments use iClicker personal response systems in their classrooms
- 292 course sections in which faculty implemented SafeAssign Plagiarism Detection software
- Events supported in Presentation Rooms + the Media Viewing Room: 2,252
- 122 classes offered in MS Office, Xythos, Intro to Technology and Statistics; 803 people attended
- 164 events in the DLS, with 1,102 visitors attending

# Appendix 6:

## Information Technology Architecture Report, Summary of Options

# University of Massachusetts – Boston
# Information Technology Enterprise Architecture (ITEA)

## Phase 1 - Report of Options – Summary of Recommendations
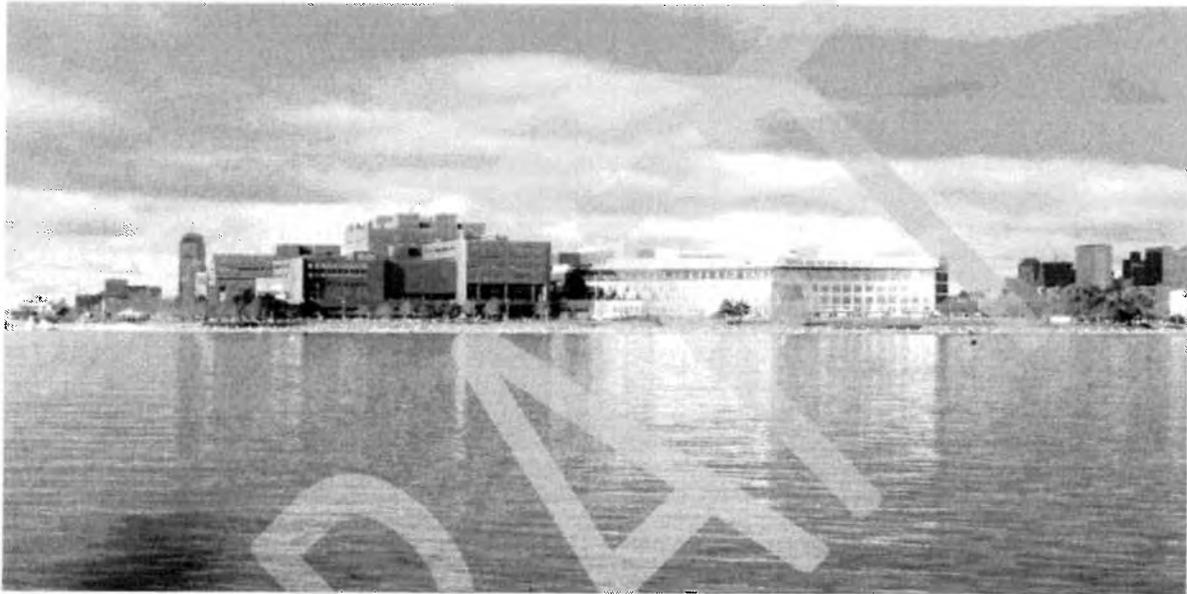


Prepared for :     Anne Scrivener Agee
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                   Daryl Ford
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                   UMass ITEA Group

                   May 2, 2011

## VANTAGE

# Contents

**Vantage Technology Consulting Group**

# 1. Introduction

This document is the Executive Summary of the *University of Massachusetts – Boston IT Enterprise Architecture Phase 1 Report of Options* based on Vantage Technology Consulting Group's (Vantage) activities at the University of Massachusetts – Boston (UMB) to date. Please see the full Report for details and back-up documentation for the recommendations in this Executive Summary.

Over the past eight months (September 2010 through April 2011) Vantage has worked with UMB Information Technology Services Division (ITSD) and the various Information Technology (IT) groups to determine alternatives for addressing the IT challenges that UMB will face over the next several years.

Like most Universities, UMB is dealing with rapid changes in technology – not only tin the technology itself but also in how technology is used. Changes in technology include technologies to support convergence, unified communications, mobility, collaboration, access to resources anytime/anywhere, and services "in the cloud". These in turn are being driven by the shifting physical workspace (remote workers and teleworkers), increased use of flex work schedules, consumer-grade technologies accelerating new work styles, and the emerging "new worker" persona (multi-tasking, technology native, expected to work despite location or time)[1].

At the same time, the UMB campus is undergoing a series of its own changes. The underground garages are deteriorating and, after having been closed for more than five years, are now slated for demolition. In addition to the obvious impact on building facades and inter-building spaces, all of the communications utilities need to be replaced as a result. Two new buildings, an Integrated Science Center (ISC) and a General Academic Building (GAB1) are being built in the near future (by 2014) with several more buildings (another academic building as well as residence halls and parking structures) to follow thereafter. At the same time, the present Science Building, which houses the UMB data center, is slated for demolition and the data center must be relocated before that can occur.

There are numerous ways to address any given technical problem. All of those ways have advantages and disadvantages in terms of cost, performance, operations, and support. Therefore, the purpose of this report is to refine the results of Vantage's assessment and interactive design meetings into a series of straightforward choices that UMB can develop into an overall IT Enterprise Architecture[2].

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[1] Source: The Future of Workplaces, A study by Gigaom Pro. March 2011

[2] It should be noted that Vantage's original scope of work called for two options to be developed. As the project progressed, it was agreed by all parties that it made more sense to provide options for each of a number of technologies so that those options could be mixed and matched to create the Enterprise Architecture approach to be used for Phase 2 of the project.

**Vantage Technology Consulting Group**

## 2. Methodology

Vantage's methodology for this portion of the work consisted of the following tasks:

- Development of a technical baseline of technologies presently in use at UMB.
- Interactive design sessions with ITSD staff.
- Meetings with UMB stakeholders.
- Meetings with UMB providers, other vendors, BVH Integrated Services (UMB's utility corridor consultants), and other internal and external project team members
- Review of standards and best practices at peer institutions
- Vantage off-site design activities.

Pursuant to the UMB project scope, this Phase 1 report has been designed to present a series of design options in each of several technical areas (data center, telephone system, data networks, etc.). After the UMB ITEA Team selects their desired approaches, as Phase 2 of this project, Vantage will work with the Team to prepare the gap analysis, address migration strategies, and address other areas such as organizational issues and governance.

## 3. Systems and Design Options

### 3.1. Data Center

Since the Data Center is located in the Science Building which is slated for demolition by mid-2014, a new data center needs to be sited, designed, built, populated, and tested well in advance of that time. Vantage explored several different designs for the new data center at UMB including various on-site and off-site options. Vantage recommends an on-site modular data center with off-site disaster recovery as the optimum mix of cost containment, future flexibility, and disaster recovery support.

This option sets aside the same amount of space as a fully-built-out data center, however, only the space needed for near-term data center requirements would initially be built-out. Sufficient utilities (power and chilled water) will be brought to the data center space for potential long term growth that can accommodate power and heat densities well beyond that supported by current technology. Significant capacity for growth is built into this recommendation to support future research computing resources. A number of data center equipment vendors provide modular units for cooling as well as modular power units that can start small and grow incrementally to meet increasing demands. This provides a highly flexible, cost effective approach for a data center when future demands are unknown and unforecastable.

All servers on campus which are determined by UMB to support mission-critical data or services[3] should be located in the Data Center where they can be secured, environmentally protected, provided with clean power, backed-up, and professionally managed.

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[3] The determination of "mission critical" will need to be defined by ITSD in conjunction with UMB management. Once determined, the policy must be enforceable and enforced.

## 3.2.   Telephone System

The voice system serving UMB was initially installed in 1987-89 and most recently upgraded in 2008. The upgrade, among other things, enabled the system to support the latest technology (Voice over Internet Protocol or VoIP). The upgrade also included replacement the obsolete voice messaging system with a newer unified messaging system[4]. The topology of the voice system is a traditional star topology with the PBX at the center and copper cabling radiating out to all served buildings on campus. There are no plans by the manufacturer to phase-out this system they for the next 5 to 7 years. Once UMB completes the planned hardware upgrade in 2013/2014 and stays current with software versions, they will have a telephone system that will be supported until at least 2020.

Our understanding of this project is that UMB would like the selected telephony approach to meet the following goals:

- Provide the flexibility to allow UMB to meet changing demands.
- Position UMB for the future and changes in technology.
- Help UMB control cost and provide services cost effectively.
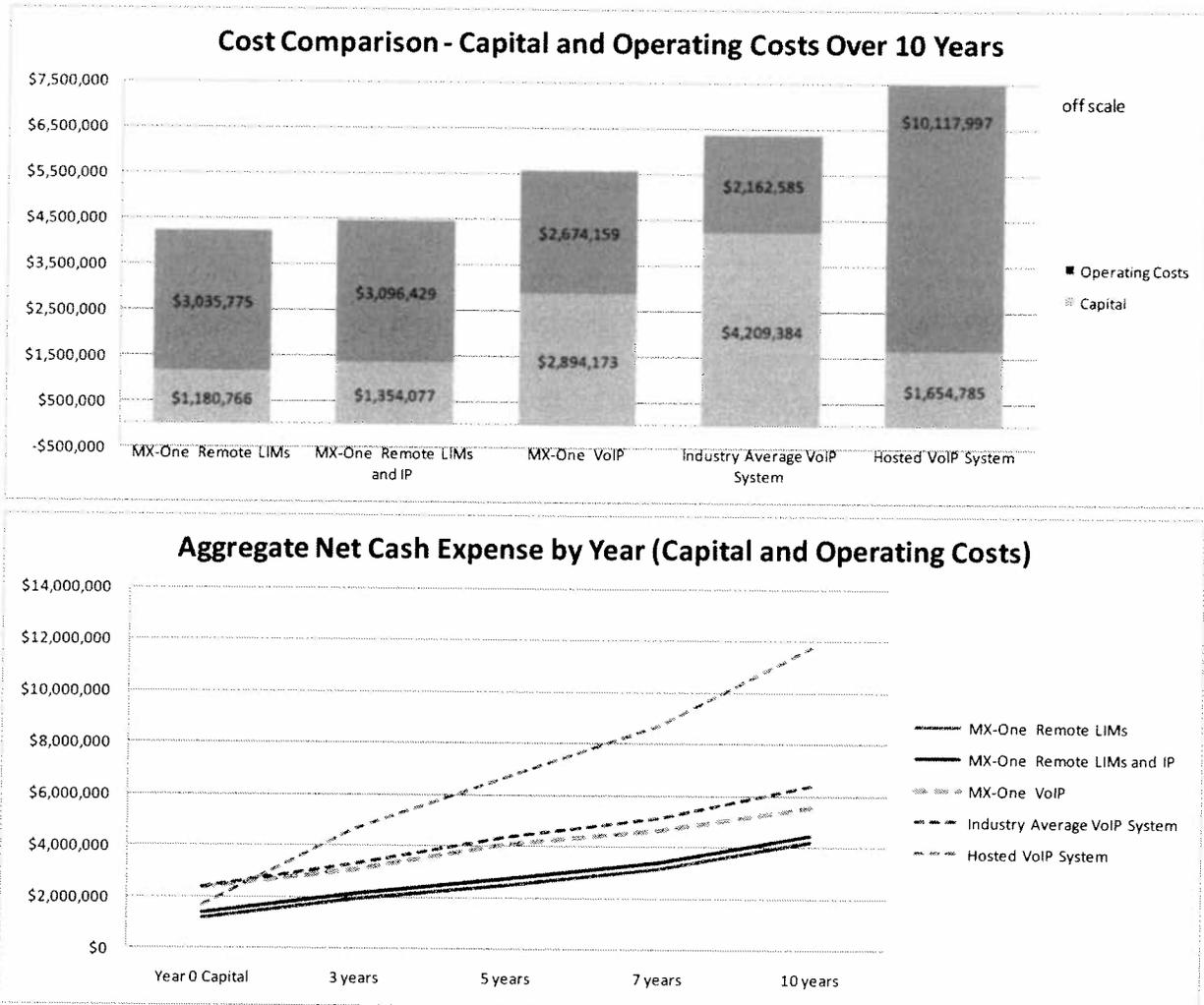- Be reliable, both on a day-to-day basis as well as in cases of emergency.

Toward this end, Vantage explored various phone system alternatives including different options within the present phone system as well as replacement of the phone system with a newer, all VoIP system.

Vantage recommends that UMB remain with the present phone system, upgrade it as planned, and move various parts of the system (called Line Interface Modules or LIMs) from the PBX room out to all existing buildings. These remote LIMs can then be connected over the planned fiber optic ring rather than replacing the obsolete and expensive copper cabling presently used. All new buildings will use VoIP. This approach strikes a balance between newer technology (VoIP where needed and applicable) and extending the life of the present technology where it meets needs and is cost effective.

The charts below provide the relative costs for the phone system:

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[4] Unified messaging provides for the delivery of voice mail messages through the email system offering a single point of messaging for email, voice and even fax.

**Cost Comparison - Capital and Operating Costs Over 10 Years**



**Aggregate Net Cash Expense by Year (Capital and Operating Costs)**



The cost associated with a wholesale change to VoIP, either with the existing phone system or by replacing it, does not provide benefits to UMB commensurate with the significantly increased costs. All of the IP solutions cost significantly more for two reasons. First, UMB will be replacing functional telephone instruments and other equipment with new equipment with only limited improvements in functionality, and second, UMB will need to undertake some data network improvements in order to be ready to deploy VoIP. Therefore, Vantage does NOT recommend either a full deployment of IP or a Hosted IP solution at this time.

The approach recommended by Vantage offers a smooth, prudent migration path from traditional telephony to VoIP, when and where cost effective for the University. The recommended combination of traditional telephony and VoIP provides the following advantages:

- Reasonable cost.
- New technology where needed.
- Continues the investment made in staff training, spare parts, and vendor relationships.
- Allows for a smooth transition to VoIP rather than a much more disruptive "flash cutover".

- Allows for continued testing of VoIP technology without a wholesale commitment to it.
- Allows for improvements to the UMB data network over time rather than all at once Allows for other options (such as more traditional and proven ways to support off-campus locations) to be implemented where they might be more cost effective or provide operational benefits.

## 3.3. Networks

### 3.3.1. Data

#### 3.3.1.1. Internet and Wide Area Connections

Vantage stakeholder interviews indicated that available Internet bandwidth was insufficient for UMB's teaching and research requirements. This is due to a combination of the size of the UMB Internet connection (260 Mbps[5]) and the packet shaper settings. The addition of residence halls will place additional high-bandwidth demands on UMB WAN connections. Bandwidth utilization is something that needs to be proactively and continuously managed to meet the changing needs of the University. ITSD is planning on doubling the Internet bandwidth to 512 Mbps before the next academic year. It is important to note that the cost to upgrade to bandwidth is not just the cost of the bandwidth itself but also the potential impact on the redundant firewalls, IDS/IPS, and packet shaper. Vantage recommends that ITSD work more proactively with the UMB community to determine bandwidth needs and enhance connectivity accordingly.

Vantage also recommends that UMB investigate alternate provider connectivity to include vendor diversity and to continue to ensure that MITI is cost competitive with commercial alternatives.

#### 3.3.1.2. Campus Network

The UMB data network runs primarily on Enterasys data switches. In January 2011, ITSD completed a project to upgrade the data network core, collapsing the three core nodes to two, dropping the Campus Center, and upgrading the core switches. As part of this core upgrade, most distribution level switches (generally one per building) have diverse and redundant 10Gb connections to the new core. The building distribution switches provide non-diverse 1Gb fiber uplinks to each edge switch located in the various data closets. The edge switches have a maximum speed to the desktop of 100 Mbps and do not provide power of Ethernet (PoE). PoE is a common way of providing power to VoIP telephone sets, wireless access points, and some video surveillance cameras.

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[5] According to the Vantage Peer Review report, 260 Mbps is the lowest among UMB's peers, however many of these also have on-campus residential students.

The existing edge data switches are ageing, have passed the end-of-sale date, and are approaching the end-of-support dates. Vantage recommends that UMB enhance edge switch connectivity to 1Gb ports by replacing these ageing switches.

Based on the new fiber ring topology proposed, Vantage recommends that UMB build a new network core in Service and Supply (or wherever the new data center is sited) and the Campus Center or GAB1. Because of phasing, it will likely be practical to build the new core infrastructure in parallel rather than migrate the existing infrastructure. The S-series cores installed in January 2011 may then be used in other applications, as part of a future N-series upgrade, or as spares. An appropriate placeholder budget is $300,000 for these core switches and any additional blades that may be required at the distribution layer.

Vantage recommends that during the switch upgrade planning, alternate vendors be involved to ensure pricing and feature parity. Vantage also recommends that UMB consider the potential cost savings and implications of collapsing the distribution layer and/or stacking edge switches as part of the edge switch upgrade project.

### 3.3.1.3. Wireless

A consistent theme in Vantage's stakeholder interviews around the UMB campus has been a request to significantly improve wireless network coverage on campus within buildings well beyond the perception of that budgeted by ITSD. The perceived need for "more wireless" may be indicative of spotty coverage, slow speed, access restrictions, or complex log-in procedures. It may not necessarily indicate that wireless coverage is non-existent, only that in the eyes of the users it could be better. As UMB has experienced with the recent wireless deployment, determining the density (and thus the cost) of access points is a very difficult exercise. For existing buildings, Vantage recommends an interactive design session to help determine the resources required to cover and support the vast majority of building spaces. For new buildings, Vantage recommends that ITSD work with the low voltage IT consultants assigned to those projects (e.g.: ISC, GAB, etc.) to design as close to ubiquitous coverage as is practical in those spaces.

### 3.3.1.4. Network Management

Vantage has made a series of recommendations to improve network management on campus. These include implementing a secure out-of-band (OOB) network for the management of all critical devices, log aggregation/analysis and monitoring systems, Active Directory consolidation, on-site spares in-lieu of a rapid response time on support contracts, and replacing the ageing and insecure DNS system with a current and supported tool with zones properly configured using best practices.

### 3.3.2. CATV

CATV service is supplied on the UMB campus by Comcast cable. There is a great deal of hard-line coaxial backbone cabling that runs through the garages for CATV backbone distribution.   However, at the present time, UMB has less than 50 total cable boxes

campus-wide making the hard-line coaxial backbone significantly over-built for present usage.

Based on meetings between UMB, BVH, and Comcast to date, the present Comcast approach appears to favor continued use of analog hard-line coaxial cabling for CATV distribution throughout the campus. While this may be an inexpensive approach (for Comcast) as they can continue to deploy readily available, in-stock, obsolete equipment, it may not be in the best interest of UMB. The hard-line coax used for the CATV backbone is large and takes up a great deal of conduit space for its performance characteristics.

Since the hard-line coax will be removed as part of the garage demolition, this is an ideal opportunity to move away from obsolete analog technology and on to newer digital technology using the investment that UMB is making in single mode fiber optic cabling.

UMB's fiber ring design provides more than ample single mode fiber to every building. Use of this fiber not only improves signal quality, but also improves the utilization of limited conduit space and positions the University to better use future video solutions (HD, video on demand, IPTV, etc.). Under this recommendation, CATV would be brought to campus and distributed over fiber. In each building, a fiber to coax converter would allow the continued use of the in-place coaxial building cabling and the existing distribution amplifiers and taps.

### 3.3.3. Audiovisual, Distance Learning and Educational Technologies

While much of the technologies for AV/DL/Ed Tech are beyond the scope of the ITEA project, Vantage met with these groups to determine the impact on infrastructure and systems within scope. This impact has been incorporated into the appropriate sections of this report. Other relevant aspects associated with these services will be addressed as part of Phase 2 of this project.

### 3.3.4. VBrick

VBrick is a product that allows the capture and transport of video signals over IP data networks. UMB presently uses VBrick to transmit up to four (4) discrete video streams to various digital displays throughout the campus. The VBrick network uses ITSD fiber and copper but does not ride on the ITSD data network at this time.

The fiber optic plant options proposed all leave sufficient capacity to dedicate fiber for the VBrick network similar to today's topology. In the proposed fiber topology, fiber strands could be patched through to Healey for VBrick streams thus providing sufficient capacity (based on the existing VBrick deployment) for any location served by the new fiber plant. The key advantage of this option is that VBrick traffic will have no impact on the data network. ITSD is actively working towards VBrick convergence with anticipated completion by Fall 2011. Vantage recommends that UMB continue converging the VBrick network onto the enterprise data network. This option is the most easily scalable and takes advantage of the fault tolerance designed into the data network.

### 3.3.5. Sodexo

Due to PCI[6] compliance concerns, the Sodexo point-of-sale (PoS) network utilizes a dedicated network running on an SMC Tiger Access Digital Subscriber Line (DSL) unit located in the Quinn PBX room.

Vantage recommends that UMB converge the Sodexo network onto a secure portion of the enterprise data network. Vantage believes the additional risk posed by converging the traffic can be effectively mitigated with best practice network management methods to ensure the Sodexo portion of the network is secured to only Sodexo traffic. If for either technical or contractual reasons convergence would place any PCI liability or compliance efforts on UMB, Vantage recommends a separate LAN to ensure UMB avoids any such liabilities. Regardless of which option is chosen, none of these changes precludes UMB from continuing to charge Sodexo for network services and retaining the revenue source.

### 3.3.6. Building Management System (BMS)

The BMS utilizes two strands of the existing ITSD 62.5/125 multi-mode fiber from the PBX room to each building. It is not part of ITSD and is physically separate from the ITSD data network. The present BMS runs on obsolete data equipment (hubs) and is no longer supported by the industry.

As part of the new network design, multi-mode (MM) fiber will no longer be part of the fiber infrastructure on campus. Consequently, if the BMS continues to run as a segregated network, the hubs will need to be upgraded to operate on Single Mode (SM) fiber strands, or SM to MM transceivers will be required.

Vantage recommends that the BMS network be converged onto a secure VLAN of the enterprise data network eliminating the separate BMS hubs altogether. Depending on the locations of the various BMS endpoints, there may be a need for additional network drops to support BMS connectivity to the data network.

### 3.3.7. Fire Alarms

The fire alarm system requires four single-mode fiber strands per building (two in and two out), daisy-chained from building to building

The fiber ring design recommended by Vantage will provide more than enough fiber strands per building to accommodate fire alarm as well as ITSD services.

The fiber optic ribbon cable recommended by Vantage is made up of packets each containing 12 strands of fiber. Vantage recommends that one of the packets of 12 single mode strands in the 720-strand fiber ring be dedicated to the fire alarm service. These 12 strands will be routed directly to the fire alarm panel and will not be terminated with the other 8 packets for data purposes.

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[6] PCI compliance relates to Payment Card Industry standards for protection of credit/debit card information.

As required by code, the fire alarm system is completely separate from ITSD, however it does use ITSD fiber infrastructure. Vantage understands from BVH that Fire alarm circuits will continue to be provided over dedicated fiber that is part of the ITSD infrastructure. Vantage further understands from BVH that the fiber planned for this purpose will meet the fire-rating and code requirements, however should this be closely monitored and coordinated with the relevant authorities.

### 3.3.8. Public Safety

Public Safety has a segregated network protected by its own firewall connected to the campus network. Public Safety maintains their own network as well as a number of servers. All of these servers are located in the hallway of the Public Safety office and while they are in a non-public area of the Public Safety building, they are not immune to damage. There are several different campus surveillance and access control systems which all terminate at Public Safety with the exception of the campus safety access control system which is housed at the Campus Center. The video surveillance digital video recorders (DVRs) consume significant critical space in the Dispatch area and add to the heat and noise in that area. UMB does not have a single standard for access control or video surveillance systems.

Vantage recommends that UMB:

- Standardize on an IP-based video surveillance system which rides on the enterprise data network.
- Select a single, uniform system for the campus, based on the system selected for ISC and GAB1 and then expanded to the campus as a whole. Access control and video surveillance systems should be compatible and linked.
- Move the servers and data storage housed in Public Safety to the collocation area of the data center.
- Select a single 'owner' (e.g., Public Safety, Facilities or IT) for all of access control and video surveillance.

Vantage recommends that Public Safety and ITSD continue to work closely together to ensure all systems are managed and maintained to best practice standards and commensurate with the importance of the systems to campus operations.

### 3.3.9. Parking

The Parking network supports a revenue-generating, critical service at UMB. Despite this, the parking application is on servers in the Parking office, on and under the desk. The server on the desk is sitting on bottle caps for cooling and makes the environment too warm, both for the personnel and equipment sharing the space. The parking network utilizes ITSD fiber and copper infrastructure supporting older modems to control parking access, card readers, and gates.

The present Parking System will have to be replaced as part of the move from open parking lots to new parking structures especially given the expressed desire for digital signage

regarding parking spaces occupied/available, intelligent traffic control, etc. At that time, the new Parking Control System should be IP-based, distributed over the campus data network, and have the servers located in the Data Center and the hardware and operating systems (not the application) managed by, trained systems administrators. The parking control system should be interfaced with the video surveillance system and the access control system both of which should also be IP-based and either the system managed by ITSD and the application managed by Parking or the system housed in the data collocation center.

### 3.3.10. Cellular Telephone

Cellular telephones play an important role is today's life style for everything from getting work done on the move to emergency notification. Unfortunately, cellular coverage is not consistent throughout the campus form carrier to carrier or building to building. A Distributed Antenna System (DAS) is a radio and antennae designed to re-transmit cellular (and potentially other) signals to provide uniform coverage throughout the campus and its buildings. At the present time, UMB does not have a distributed antenna system. AT&T does have a macrocell located on the roof of the Science Building which does provide very good coverage for AT&T cell phones on the campus. The coverage for other carriers (Verizon, Sprint, and T-Mobile) is spotty at best. This situation has only gotten worse with "green buildings" that use heavy concrete walls and decks and low emissivity glass. (The same qualities that block thermal flow in low-e glass also block cellular radio frequency signals.)

DAS systems can be made up of macro cells (like your AT&T tower on the Science Building), microcells (smaller transmitters), distributed antennas, distributed radios, or any combination thereof.

Vantage recommends that UMB contact a company known as a "third party neutral host" to arrange for a cellular coverage survey and to open discussions with carriers about improving coverage on campus. A neutral host can be one of the carriers themselves or a specialized company like Next-G, ADC, Crown Castle, or American Tower. Clearly a good place to start is with AT&T since their antenna array on Science will need to be relocated regardless.

Where possible, all active electronics related to the DAS should be located in the data center collocation space or in the building distribution frame locations

It should be noted that rooftop locations for antenna placement are of value to the carriers and provide a potential revenue source for UMB and/or an avenue for getting carriers to fund the DAS deployment.

## 3.4. Computer Systems and Servers

### 3.4.1. Systems Management

To improve systems management on campus, Vantage recommends:

- Implementing "lights out" best practice methodologies such that all management changes that don't require a physical hardware change (e.g., moving a cable, racking a server) are managed through remote tools. The technology to do this is readily available and in most cases, part of the existing hardware.
- Log aggregation/analysis and monitoring systems where appropriate.
- On-site spares in-lieu of a rapid response time on support contracts.
- Standardize server hardware and operating configurations to the extent possible.
- Configuration documentation be kept up-to-date and coordinated with security decisions and the impact on disaster recovery.

### 3.4.2. Virtualization

Virtualization, in computing, is the creation of a virtual (rather than actual) version of something, such as a hardware platform, operating system, a storage device or network resources. Virtualization technology allows for management efficiencies and provides the ability to do many things faster, easier, and sometimes cheaper than without virtualization. While these management efficiencies have great value, the cost of providing existing services is typically higher than without virtualization. Virtualization decisions have considerable impact on storage, data center migration and disaster recovery strategies. Vantage recommends that as part of the kick-off for Phase 2, Vantage moderate an interactive design session with the systems group and ITSD management to discuss the pitfalls, costs and efficiencies gained in a virtualization deployment so that, together, we can develop a coherent strategy for the use (or not) of virtualization technologies.

### 3.4.3. ITSD Core Applications

Regarding ITSD core data applications, Vantage recommends:

- Consolidation of the various campus Active Directories (ADS).
- Continue the project to join Windows machines to the primary campus ADS and evaluate the need to enhance support for Macs.
- Offer, support and market a robust, enterprise class file sharing service campus-wide. A consistent message in the Vantage stakeholder interviews was the desire for what the users described as "desktop backups". Vantage recommends that the best way to offer this service is secure and robust enterprise file sharing with large quotas and the ability to access files from anywhere on or off campus.
- Many groups within and outside of IT run their own servers (often under their desks) with critical UMB functions that would benefit from consolidation, data center facilities and professional systems administration.

### 3.4.4. Data Storage

UMB has five independent storage area networks (SANs). Vantage recommends that UMB standardize on a single, flexible enterprise-class SAN platform for most services, and only

employ other storage solutions if specific applications are not supported. As storage is a foundation technology for other services, Vantage's recommendations for an overall storage strategy will be part of Phase 2. This strategy will be based on the decisions made in Phase 1 including virtualization, enterprise file sharing, service offerings, disaster recovery, and data center migration strategy. These same decisions will dictate the direction for backup technology and architecture as part of Phase 2.

## 3.5. Security

Regarding network security, UMB has come a long way in developing the elements necessary for an effective security management model. However, there are still improvements to be made. The present organizational structure separates security policy management and network security management making coordination much more difficult.

There is a tension between the desire to protect the institution and community (security) and the desire to make things as easy, transparent, and natural as possible for the users (access). The most secure data allows no access; the most accessible data is unsecured. Getting the balance right depends on perspective and complaints about restrictive access protocols are common in well-secured networks. Vantage recommends that UMB continue with plans to expand identity management in such a way as to allow increased access to services without compromising security and continue to work with the community to achieve that delicate balance necessary to protect information but allow access. As UMB builds its research and academic profile, this approach will increasingly become an issue with faculty.

ITSD believes they do not manage any infrastructure which contains personally identifiable information (PII) or other data with legal requirements surrounding its confidentiality. However, no audit has been conducted or users surveyed to confirm that this is the case. Vantage's experience with other similar institutions is that there is likely significant data covered by FERPA, HIPAA and other regulations on ITSD managed infrastructure that ITSD has not been made aware of.

UMB is actively working with the University of Massachusetts office of the CIO to develop a Written Information Security Plan (WISP) within the ISO 27001/2 framework. Many of the recommendation detailed in this report (including incident response and audit requirements) will likely by covered by the Controls surrounding the WISP as they are developed and detailed.

Other Vantage recommendations include:

- Create and maintain formal policies and procedures for incident response and analysis.
- Implement procedures for lessons learned and root-cause analysis after incidents.
- ITSD should work with the UMB community to ensure sensitive data is stored in compliance with all relevant regulations.
- Deploy additional Intrusion Prevention Systems (IPS).
- Integrate security best-practice into the future change management processes and related communications.

- Work with other area higher education institutions to apply their lessons learned in providing a sufficiently secure infrastructure that encourages the freedoms typically associated with successful academic environments.

## 3.6. Change Management and Stakeholder Communication

Change management is an approach for assessing, evaluating, and testing changes before implementing them and communicating to rest of the community the impact the change might have. Change management is not a product that can be purchased, but a way of doing things integral to the culture analogous to a safety culture in a manufacturing environment or a customer service culture in a sales environment. There are few formalized change management procedures or policies at UMB. As a result of the lack of formal policies for change management, communication of changes and their impact tends to be forgotten -- both within the ITSD organization and to and from the user community.

Vantage recommends that ITSD reach out to the UMB community to establish trust and two-way communication. While it will be a long process to change the "culture" of ITSD, this should begin with discussions amongst the IT groups (and with Vantage). Significant information can be gleaned in this area from the approaches of UMB Peers. Once a framework for change management has been agreed upon, it will be appropriate to find or develop tools that will assist in the implementation of this framework.

## 3.7. Research Computing

There are eight issues associated with building an information technology enterprise architecture to support research in general and research computing in particular. It is necessary to predict or determine the following:

1. The nature and amount of research expected.
2. The computing resources necessary to support the research.
3. Data storage resources necessary to support the research.
4. Location for computing and storage (UMB, UMass System, Vendor/Cloud).
5. Network resources necessary for UMB researchers.
6. Network resources necessary for peers/sub-contractors of grants.
7. Security obligations incurred by conducting the research.
8. Support necessary (desktop, programming, applications, database, interface) and how it is to be provided.

Since we cannot at this time reasonably assume that research or high-performance computing will be exclusively off-campus (relying on the UMass System, The Massachusetts Green High Performance Computing Center (MGHPCC) in Holyoke, outsourced services, or the cloud), the data center must be sized with the capacity to house any research and high-performance computing expected to be necessary for the types of research conceived, and to house the associated data storage. Additionally, the network must be designed in such a fashion that research applications requiring high throughput (e.g. high-definition video feeds) would be

possible without disrupting other mission critical data networking needs. Also Internet and Internet 2/research networks must have the capacity for UMB researchers to access resources located off-campus and for peers, subcontractors, and collaborators to access resources that are sited on the UMB campus.

It is also important to realize that new academic research, even that which pulls in large governmental and private funding, does not help the institution's "bottom line." On the contrary, even prestigious research universities typically put research on the obligation side of the ledger. This is because there are many research costs that cannot be recouped, even by grant overhead, and the grants obligate the institution to do particular research.

David Wedaman's 2006 ECAR Research Bulletin[7] provides an excellent framework for further discussion.

Research computing is highly individualized and often driven by research and grant requirements that are outside the control of the University. The prudent approach is to be able to provide and support many different research computing approaches in order to best meet the needs of the specific department doing the research.

Vantage recommends that IT create a Research Computing Support Group starting with a Research Coordinator position that will work with the research community to determine how research computing will be best supported at UMB. As Research Computing grows, the Group can be expanded to include technical and systems support personnel as required.

## 3.8. Computing/Applications/Services - Outsourcing

While many of the applications in use at UMB are beyond the scope of the ITEA project, Vantage met with the Applications Services group to determine the impact on infrastructure and systems within scope. This impact has been incorporated into the appropriate sections of this report. Other relevant aspects associated with these services will be addressed as part of Phase 2 of this project. However, one aspect to be addressed at this point is outsourcing.

The options for moving technology and technology management out-of-house (collectively referred to as "outsourcing") are more numerous than ever. The claims about these services can be compelling especially for an institution that is short on capital, dealing with personnel freezes and cutbacks, and facing replacement of obsolete technology. One specific area in question for UMB is whether to outsource Exchange mail services for faculty and staff.

Outsourcing has its place. It can be a cost effective method of supplementing in-house capabilities, providing additional expertise, and allowing an organization to concentrate its limited resources on those efforts which most greatly support its strategic mission. However, outsourcing is not an all-or-nothing decision. It can best be viewed as a continuum, moving from no outsourcing to full outsourcing. UMB must decide not only whether to outsource a

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[7] Supporting Specialized Academic Software: Is It Possible? ECAR Research Bulletin, Volume 2006 Issue 4.

**Vantage Technology Consulting Group**

function (IT, telecommunications, food services, custodial services), but which specific tasks within that function to outsource.

When technology is outsourced, there are numerous changes which take place. It cannot be assumed that one can transparently make a transition of this magnitude without significant and sweeping changes in day-to-day operations. Contrary to popular belief, outsourcing does not eliminate the institution's need to manage; it just changes the nature and level of management. Someone still has to manage the outsourcers, the contract, the interface with the school, etc. Failure to manage is the single most common cause that outsourcing endeavors fail. Outsourcing can work successfully for an institution in certain circumstances and for certain functions, but cannot be viewed as an across-the-board cure-all for the ills that plague IT in higher education. Outsourcing must be carefully evaluated and any financial benefits weighed against issues such as control, the strategic value of technology to the institution, staffing, and responsiveness. Properly applied, outsourcing offers many benefits; improperly applied, it offers even greater risks.

## 3.9. Help Desk/Desktop Support

Some aspects of Help Desk and Desktop Support are beyond the scope of the ITEA project. Vantage met with this group to determine the impact on infrastructure and systems within scope. This impact has been incorporated into the appropriate sections of this report. Other relevant aspects associated with these services will be addressed as part of Phase 2 of

## 3.10. Physical Infrastructure

### 3.10.1. Outside Cable Plant Overview

The outside cabling plant which interconnects the UMB buildings consists of copper, fiber, and coaxial cabling most of which will be destroyed when the garages are demolished.

### Copper Cabling

The copper cabling at UMB is used primarily for voice, fax, alarm circuits, DSL (such as Parking), and ISDN (video). Vantage recommends that UMB begins with the basic design of 100 pairs per major building and 50 pairs per minor building and make adjustments on a per building basis for those locations where more or less cabling might in order. The overall design objective will be to keep the aggregate cable count where it enters the data center or PBX room from the north or south loop to less than 800 pair (what can fit in two-4" conduits).

### Fiber Optic Cabling

The fiber optic backbone at UMB serves all buildings and consists of a mix of single-mode fiber, multi-mode 62.5 micron fiber, and multi-mode 50 micron fiber. With the exception of the recently-built Campus Center, no IDF has more than 12 strands of 62.5 multimode

fibers from the building distribution frame (BDF). In the future, additional fiber or higher bandwidth fiber may be required. UMB is planning to upgrade the riser fiber to 12 single mode and 12 50-micron multi-mode fibers to enable support of 10 Gbps connectivity to the IDF.

It is Vantage's understanding that the BDFs for Wheatley and McCormack are in jeopardy from the garage renovations and may need to be relocated and therefore redesigned. ITSD should investigate opportunities to enhance the environmental conditions in these BDFs or segregate the network BDF from the fire alarm and other utilities.

The design for fiber optic cabling for UMB is based around the concept that there will be two core data network nodes at opposite ends of the campus[8] and that every building will attach to both of those nodes via diverse routes. In addition the network nodes will be interconnected by means of additional fiber in order to allow additional routing, patching, and disaster recovery options. The data network topology is designed to be fault tolerant for a single fiber cut anywhere in the utility corridor. A break in the branch fiber entering an individual building may not be fault tolerant. As is the best practice today, all fiber will be 8 micron single-mode.

Vantage recommends the installation of a fiber ring around the campus using fiber optic cabling known as ribbon fiber. Ribbon fiber is a large count fiber cable design to be split into smaller bundles without compromising the integrity of the whole cable. In this scenario, a large count ribbon fiber (for example 720 strands[9]) would be run between the data center (assumed to be in Service and Supply) and Campus Center to the north and to the south. At each manhole where there are building entrance conduits, the required building count (e.g.: 48 strands) would be broken out from the cable, fusion spliced, brought into the building and terminated. The same count would then exit the building and be terminated in the manhole to continue on to the other end of the ring. This would provide the dual-homing from each building to S&S and CC.
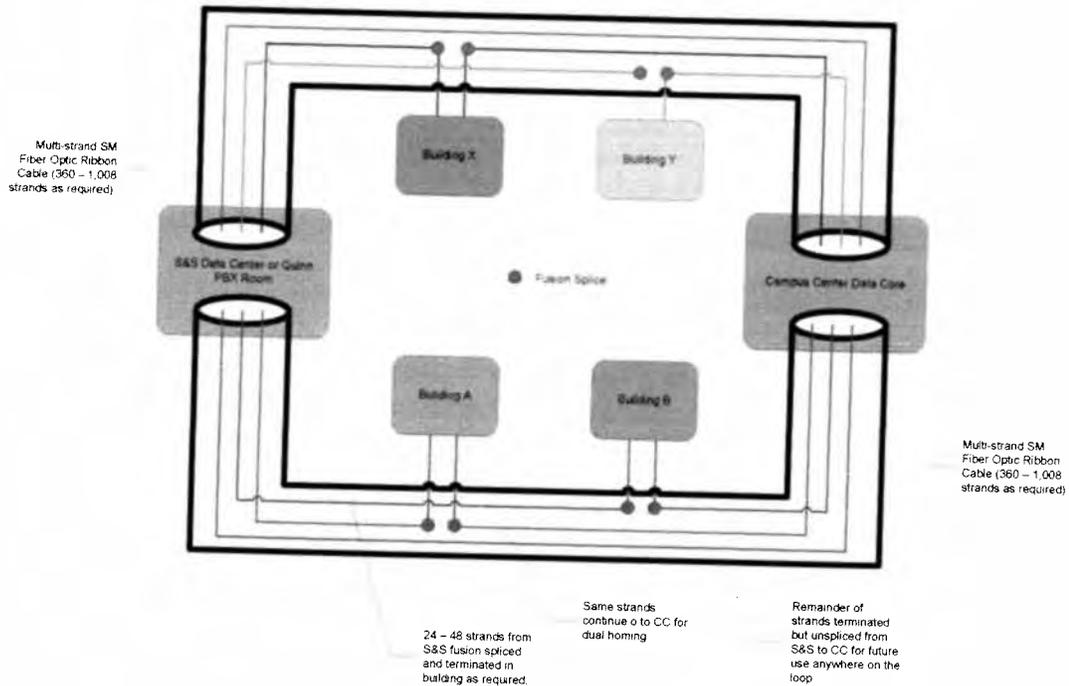
The diagram below shows schematically how such a fiber ring would be deployed.

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[8] Assumed at this time to be in the data center (S&S) and the Campus Center but GAB1 may replace the Campus Center.

[9] Corning Fiber 720 strand ALTOS ®ribbon fiber, gel-filled, armored, loose tube.

**UMass Boston Fiber Cable Plant**
**(Ribbon Cable Conceptual Design)**



The benefit of this approach lies in better conduit utilization (a single large bundle) and in future flexibility. If there are seven buildings on the south side of the utility corridor and 48 strands to/from each building, then 336 of the 720 strands would be in use. At any time in the future, additional strands can be tapped into for new buildings or for locations requiring additional fiber. In addition, if a new building is added, only the manhole feeding that building needs to be entered in order to tap into and fusion splice the cable. This approach will be particularly beneficial on the north section of the corridor where there are plans to build many new buildings.

### 3.10.2.     Coaxial Cabling

See CATV section 3.3.2 above.

### 3.10.3.     Physical Security of IT Spaces

Spaces assigned to ITSD for equipment rooms and tel/data closets has evolved over the years. Much of what IT has had to do is to make-do with available (often sub-optimal) spaces and conditions. Some IT spaces are shared and too many people have keys to IT spaces. Newer installations (such as the Campus Center) tend to more closely follow present standards and requirements and should be continued moving forward.

The physical security of IT spaces is critically important to communications security and reliability. Communications spaces should be dedicated to communications functions and not shared with any other department or service. Access should be limited to only those

with a need to be in the space. Vantage recommends the use of keypads or card readers to control and audit access.

## 3.11. Disaster Recovery/Business Continuity (DR/BC)

The overall purpose of a Business Continuity Plan (BCP) or a Disaster Recovery Plan (DRP) is two-fold: to make information easy to find when needed and to make that information easy to keep up to date so that it is accurate when needed. There are four basic categories that need to be addressed as part of disaster preparedness. These are:

1. Physical spaces (server rooms, telecommunications spaces, building entrance facilities, etc.)
2. Systems and network topology (design, redundancy, back-ups, etc.)
3. Personnel (attitude, knowledge, flexibility, dedication, training etc.)
4. Documentation (policies, procedures, inventories, call-out lists, etc.)

As part of our design criteria, Vantage has incorporated disaster avoidance and recovery as basic design tenets. Some of our design features include:

- Fiber optic ring topology.
- Dual homing fiber from every building to each of the two core switch locations.
- Redundant servers added into the telecommunications system design.
- Remote LIMs on the telephone system will be interconnected via the data network. The inherent network redundant and self-healing nature of the data network will extend to the telephone system as well.

The best approach for disaster planning is to accept the fact that a large, complex institution such as UMB can't plan for everything and realize that most of the response to any disaster must be done in the field and on-the-fly depending on the specifics of the situation. The disaster plan should have basic information – who, what, where, how many, areas of responsibility, etc. This way, it is much easier to define what constitutes a disaster and what you need to be ready to respond to it.

UMB does not have a complete inventory of all equipment – per building, by type, make, model, ports in use, configuration, etc. A comprehensive equipment database that can be sorted by any field can be an extremely useful tool. It can be used to obtain a list of all equipment in a damaged building or to locate a similar piece of equipment that can be re-purposed to meet a more critical need.

While there is a great deal of information available throughout ITSD (and a great deal in the heads of ITSD personnel), the information is not complete or consolidated in such a manner as to facilitate restoration. For example, if some of the servers had to be rebuilt, one would have to go to multiple sources to obtain full information on server type, make, model, capacities, operating software, applications, configuration, etc. This kind of information should all be consolidated in the disaster recovery documentation for easy access. UMB, as part of a UMass System initiative, plans to use Kuali Ready as the DR documentation and process template tool.

# 4. Stakeholder Coordination

Because of the scope technology and the number of inter-related projects that UMB is conducting simultaneously, it is extremely important to coordinate all of the technology aspects of these projects. The design work that Vantage is doing should be coordinated with BVH's utility corridor work, the low-voltage design for the ISC, the low-voltage design for the GAB, Facilities siting of the Data Center, the UITS relocation of the DTR racks for the Data Center, campus entrance facilities for Verizon, Comcast, and MITI providers, video surveillance and access control systems selection, and numerous other related projects. Vantage suggests a technology planning session where the stakeholders and associated consultants for all of these projects meet, discuss the inter-relationship of the activities, and determine how to best coordinate and communicate to avoid waste, duplication, and missteps.

Vantage is aware of the fiscal constraints under which all institutions of higher education are operating. IT has no inherent value in and of itself. IT's value to the institution lies where IT investments can be leveraged for improved innovation and efficiency in administration, teaching/learning, and research. In order for IT to be funded and supported properly, IT must be seen as a critical part of how other departments operate. The worst thing for the institution is for IT to be seen as just another utility, or, worse than that, an impediment. The challenge for UMB ITSD is to establish itself as a critical partner to all other departments in their operations. As part of this effort, Vantage recommends the establishment of an IT governance advisory group to improve communications and information flow between IT and the other departments on campus as well as a renewed commitment to customer service.

# 5. Conclusion

The University of Massachusetts – Boston has its share of both opportunities and challenges. But Vantage recommends that the challenges be regarded as further opportunities. While the renovation of the garages, the relocation of utilities, the redesign of roadways, and the new building construction projects will greatly complicate day-to-day IT operations, it also provides ITSD with unprecedented opportunities to replace systems, improve operations, and establish new directions and policies for IT moving forward. ITSD must make a clear decision to either narrow its focus and support an appropriate set of core services or provide a more complete suite of services. As part of Phase 2 Vantage will work with ITSD to determine what systems and services (but not necessarily applications) to support and manage across the UMB community.

Few colleges and universities have the chance to make the kind of wholesale changes and improvements that UMB will. The decisions made as a result of this Phase 1 report will establish the framework and context for IT at UMB for the foreseeable future. It is not an opportunity that should be squandered or taken lightly. The challenges facing UMB regarding Information Technology may be significant but need not be overwhelming. A focused, phased approach to understanding and resolving the issues (of which this report is part) will produce major benefits for the institution.

Vantage appreciates the opportunity we have to be a part of this exciting project and looks forward to assisting UMB in Phase 2 and making the recommendations in this Phase 1 report a reality.