INFORMATION TECHNOLOGY SERVICES
TECHNICAL SERVICES
June 2012

Program Description – Network Services is a service unit in Information Technology Services responsible for designing, acquiring, deploying, operating, and maintaining the campus voice and data infrastructure, plus all of the equipment necessary to support end users. Additionally, the unit maintains the District's mainframe and the administrative servers that supports multiple applications including Ellucian Colleague student information system, the SharePoint MyECC portal, staff and student email, internet access, the Millennium library automation system. Finally, the unit is charged to monitor network activity to prevent service outages caused by internal or external threats and malicious attacks intended to disrupt operations and corrupt or otherwise compromise essential data resources.

Program Goals –Network Services helps El Camino College utilize technology to provide students with the greatest opportunity for achieving their educational goals; faculty with the resources and support necessary for continued excellence in instruction; administrators and staff with the most efficient and effective work environment for overseeing daily institutional operations; and the community with effective, efficient, and timely responses to their needs for information, training, and instruction.

This activity supports:
> Institutional Strategic Initiative B:
> Strengthen quality educational and support services to promote student success.

> Institutional Strategic Initiative F:
> Support facility and technological improvements to meet the needs of students, employees and the community.

The unit goals for this program review are:

1. Maintain network systems reliability at as close to five nines (99.999%) of uptime as possible.
2. Reduce the time to restore network outages to one day or less.
3. Reduce time to modify service (voice and / or data) to 4 hours or less.
4. Notify the administration of network service issues within one hour or less of the event.

Program Environment
The operational hours of this unit are 40 hours a week; 7:45am to 4:30pm Monday through Friday. The unit exercises responsibility over the following:

1. Network connectivity for over 4,000 Pcs and printers and 1,600 telephone sets.
2. Deployment, operation, and maintenance of 90 virtual servers residing on 10 physical servers. (The Exchange/Outlook email system, SQL databases, and Colleague are not virtualized.)

3. Data backup regimen that protects the college's legacy information recourses and provides for rapid disaster recovery.
4. Storage Area Networks (SANs) including a 20 terabyte SAN servicing Colleague, a 300 terabyte SAN for video surveillance, and an 80 terabyte SAN for user generated "My Documents" data file.

The unit manager supervises 6 full time staff; 2 network staff, 2 telecommunications staff and 2 help desk staff. One of the telecommunications positions is vacant.

Data Resources
ITS Program Review depends on five sources of data to help assess program effectiveness:
1. **Remote monitoring and management tools**
   The unit uses Microsoft Systems Management Software to manage all desktops running the Windows operating system. It utilizes Active Directory to push upgrades and patches. The software also supports inventory management, which provides both hardware and software inventory across the network of all active PCs. The inventory accumulates and refreshes at prescheduled intervals. The unit has used this feature to locate and replace several generations of older desktops.

2. **Help Desk statistics** – This program review does not draw upon any data more recent than 2010-11. Since 1998-99, ITS has relied on its own in-house developed help desk software to measure the effectiveness of services being provided. The emphasis was on recording the service request, handing it over to a technician to revolve and documenting the outcome. The software has no real analytics for anything other than counting job tickets and recording the time to close. In 2010, ITS decided to write a SQL version of the help desk software and link it to the SharePoint portal. In early 2012 it became obvious that new help desk software, then in beta test, would not meet design expectations. The unit needs to move away from the help desk trouble ticket solution to service management software capable of the following:
   1. Utilize the power of SQL Reports to obtain more detailed information about the services users are requesting and how the unit in responding.
   2. Provide information about who in asking for services; track the data by division, unit, individual requester, and request type.
   3. Integrate the requesters into the service management process with verbal notification that the request had been received, the date and time of the visit, and a follow-up satisfaction inquiry.
   4. Categorize the various types of service requests to reveal patterns in the issues and opportunities for user training.
   5. Compile service information into an "expert system" that first responders can use to resolve issues on the spot.
   6. Integrate with Microsoft Systems Management Server to obtain accurate hardware and software inventory information.

3. **Colleague fixed assets inventory**
   a. little or no value:
   b. surplus equipment remains in the database;

     i. 10% 1999 or older;
     ii. 27% 2004 or older;
   c. 15-20% entry rate errors for what remains;
   d. no data entry standards
   e. mistaken pull down data categories.

 4. User logon data
   The unit tracks the number of students logging onto the portal and the PCs in the
   academic computer labs. This data is an indirect indicator of service reliability,
   accessibility, and ITS's ability to keep services up and running.

Program Effectiveness
Student Logon Data – Library
Beginning Fall 2011, ITS began tracking student logons in the library. This chart shows the data
for all the labs in the library for that semester.

Library LMTC - Sept. 1 - Dec. 16, 2011						
Month	LMTC 31 (Open Access)	LMTC 36 (Reading Lab)	LMTC 42 (Open Access)	LMTC 44 (Open Access)	LMTC 46 (Open Access)	Total
Sept.	9,999	257	2,066	2,354	1,166	15,842
Oct.	9,979	203	2,220	2,138	1,252	15,792
Nov.	9,326	227	2,550	2,327	1,423	15,853
Dec.	10,228	89	1,348	1,179	767	13,611
Total	**39,532**	**776**	**8,184**	**7,998**	**4,608**	**61,098**

Several things are significant in this data:
1. Students used the facility throughout the fall semester
2. Usage was constant; there were no peaks and valleys.
3. There were only 2 weeks between the beginning of December and the end of the semester
    and yet nearly 1,000 more students logged into the LMTC 31 than during the previous
    three full monthly totals.

Student Logon Data – MyECC Portal
ITS closely monitors the fall registration period from first day to register in mid-May to first
census in early September. This 118 day period experiences the largest logon surge of the year.
MyECC student SharePoint portal, which launched in July, 2007, attracted staggering numbers
of students during this period. Upgrading the student information system server and related
systems doubled student logons in 2010 and increased them by nearly a million in 2011.
Technical services plays a major role in preparing and monitoring the infrastructure to ensure
that students have access to the portal. It's success is in part their success.

Two charts below, "Student MyECC Logons Fall Enrollment Daily Count" and "Student
MyECC Logons Fall Enrollments Total Count by Year" shows the enrollment comparisons over
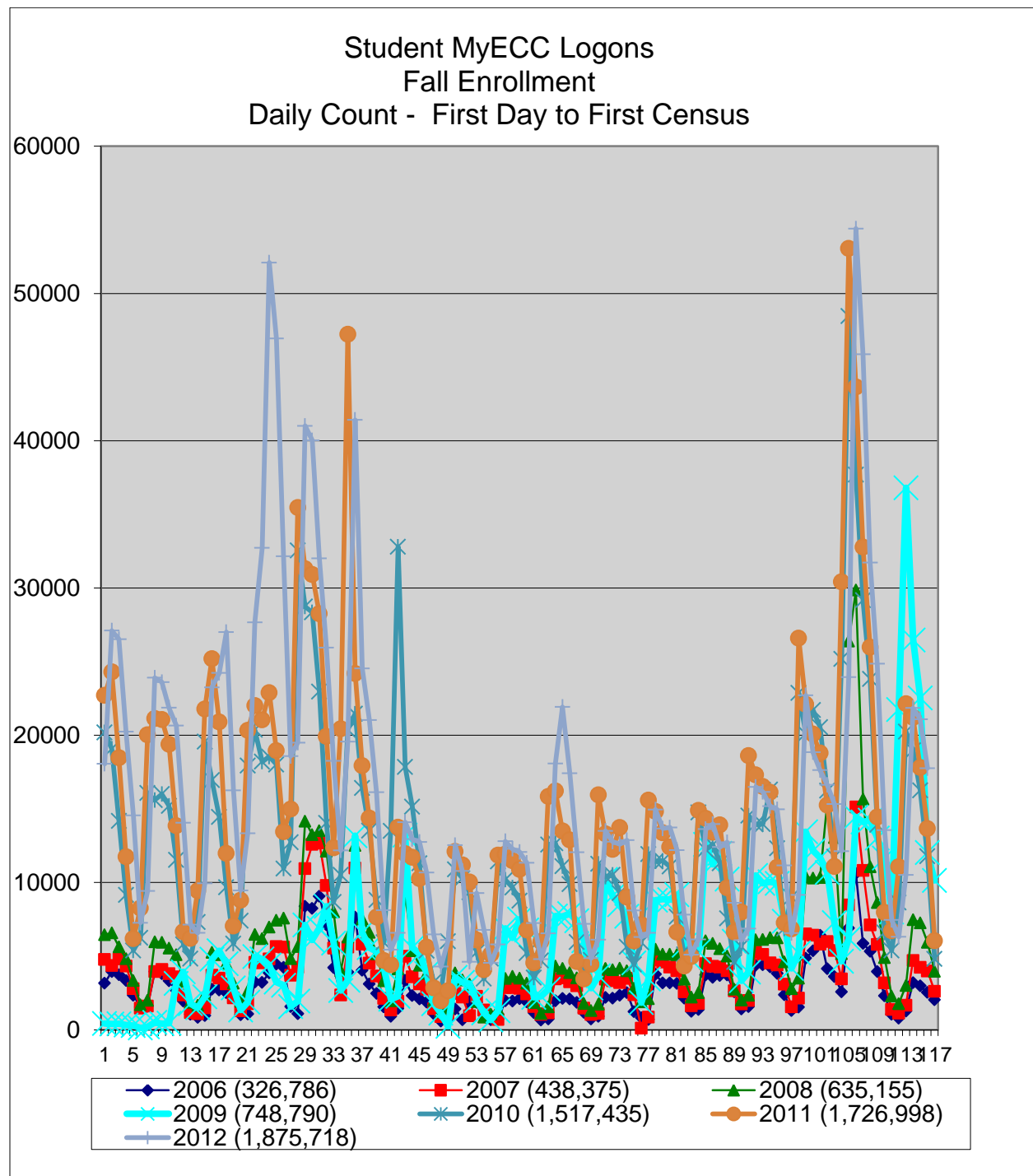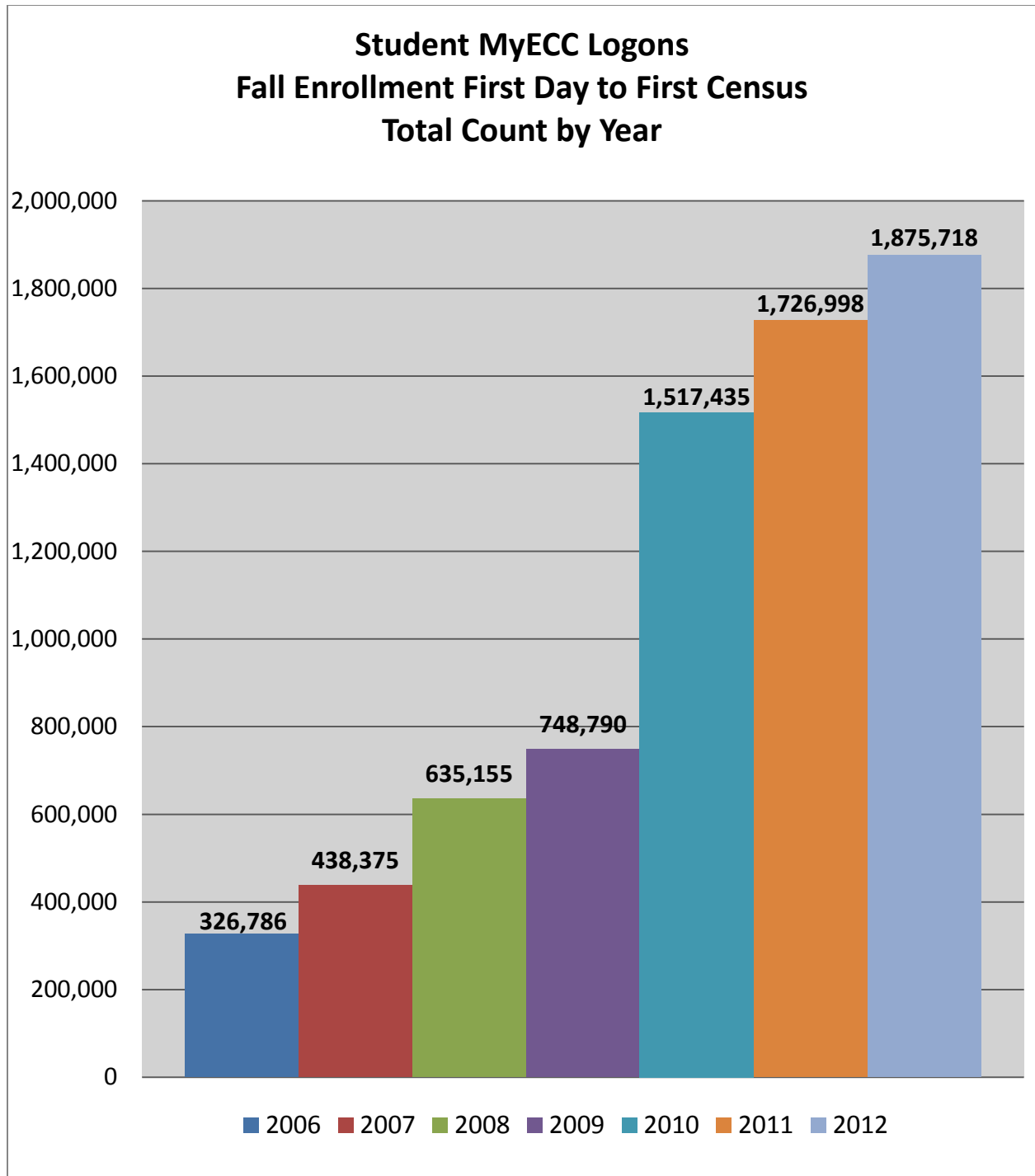six years from 2006 through 2012.

Chart A

Student MyECC Logons
Fall Enrollment
Daily Count - First Day to First Census

Legend:
- 2006 (326,786)
- 2007 (438,375)
- 2008 (635,155)
- 2009 (748,790)
- 2010 (1,517,435)
- 2011 (1,726,998)
- 2012 (1,875,718)

Chart B

Student MyECC Logons
Fall Enrollment First Day to First Census
Total Count by Year

2006	2007	2008	2009	2010	2011	2012
326,786	438,375	635,155	748,790	1,517,435	1,726,998	1,875,718

Changing Conditions
The migration of the telephone system from ISDN / Centrex to Cisco IP Telephony has dramatically altered the duties and responsibilities of the Telecommunications Technicians from the traditional "moves, adds, and changes" work to more sophisticated tasks associated with Unified Messaging, Unified Meeting Place Express, IP Communicator, Emergency Messaging, and Visual Voicemail. All of this technology resides on the same devices that carry the college's data traffic. The Telecommunications Technicians are functioning side by side with the Network Technicians working on the same equipment and doing many of the same tasks. The job descriptions should be revised and upgraded.

All academic, administrative, and student support functions of the college are now dependent on very complex computer networking and data systems that interconnect departments across the District, the District with state and federal governments, and the college with higher education institutions across the country and throughout the world.

New technology is enabling ITS to utilize remote management tools to monitor and service many of the computers and other devices attached to the network. As a result, technology maintenance and upgrade procedures are migrating from high touch - low online to low touch - high online.

State contracts are providing centrally funded high speed bandwidth connections to the college are being upgraded from one to ten gigabit connection speeds. Network Services has cut the District over to a new ten gigabit campus network backbone.

The help desk technicians are resolving 80% of incoming trouble issues that were going to technical services technicians as work tickets. These trouble issues are becoming increasingly sophisticated. The help desk is pushing out software deployments and upgrades that technical services used to do manually.

Conclusions and Recommendations
1. Deploy a new service management program (help desk) and continue to refine the new equipment deployment process and the others tasks performed by this unit..
2. Evaluate the staffing and organization of Informational Technology to ensure the unit is adequately staffed and trained for its mission as the district's leader in planning and integrating technology into the school's academic and administrative business practices.
3. Eliminate the position of Telecommunications Technicians.
4. Create a new position of Network Technician I