



Sinclair  
Community  
College

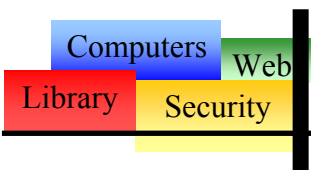
# **INFORMATION TECHNOLOGY DIVISION STATUS REPORT AND STRATEGIC OBJECTIVES AY 2005-2006**



# **Information Technology Division**

## **Status Report and Strategic Objectives for AY 2005-2006**





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# Section 1

# Executive Summary



## Executive Summary

### Challenges

Information Technology (IT) has become such an integral part of our operational landscape, the success of many other initiatives are highly dependent on technological development and maintenance.

There are many challenges in the Information Technology Division today from funding to infrastructure security to identity management to staying current with governmental and regulatory changes. However, first and foremost, IT projects must support the strategic initiatives of the institution.

The five basic objectives for IT for AY 2005-2006 are as follows:

1. **Achieve innovation and growth while managing costs**. We cannot stop innovating, and we cannot stop growing, but we must be strong financial stewards.
2. **Enhance the strategic value of IT**. The strategic contributions of IT must be identified, measured, and articulated effectively to all constituents.
3. **Manage IT resources efficiently and effectively**. The IT services must be run with fiscal discipline, accountability, a responsive customer service mindset, and a commitment to flawless operations.
4. **Develop the next generation of IT leaders**. We must mentor our IT staff to become true leaders, to build productive relationships with faculty and staff and with external partners.
5. **Manage user expectations**. Unknown, unclear, and unrealistic expectations of IT on the part of any constituents are precursors of failure. We must understand and manage expectations to guarantee success.

### IT Budget Trends

The Operating Budgets and the Renewal and Replacement Budgets for the past three, the current, and the next academic years are provided in Figures 1.1 and 1.2, respectively. Although we have made some significant advances in information technology over the last four years, both of these budgets have remained at approximately the same level. The only exception is when the Learning Resources Center was moved to the IT Division in AY 2004-2005. As illustrated in Figure 1.1, the Operating Budget actually decreased nearly 1% from AY 2001-2002 to AY 2005-2006. Similarly, the Renewal and Replacement Budget decreased approximately 8% during the same time frame.



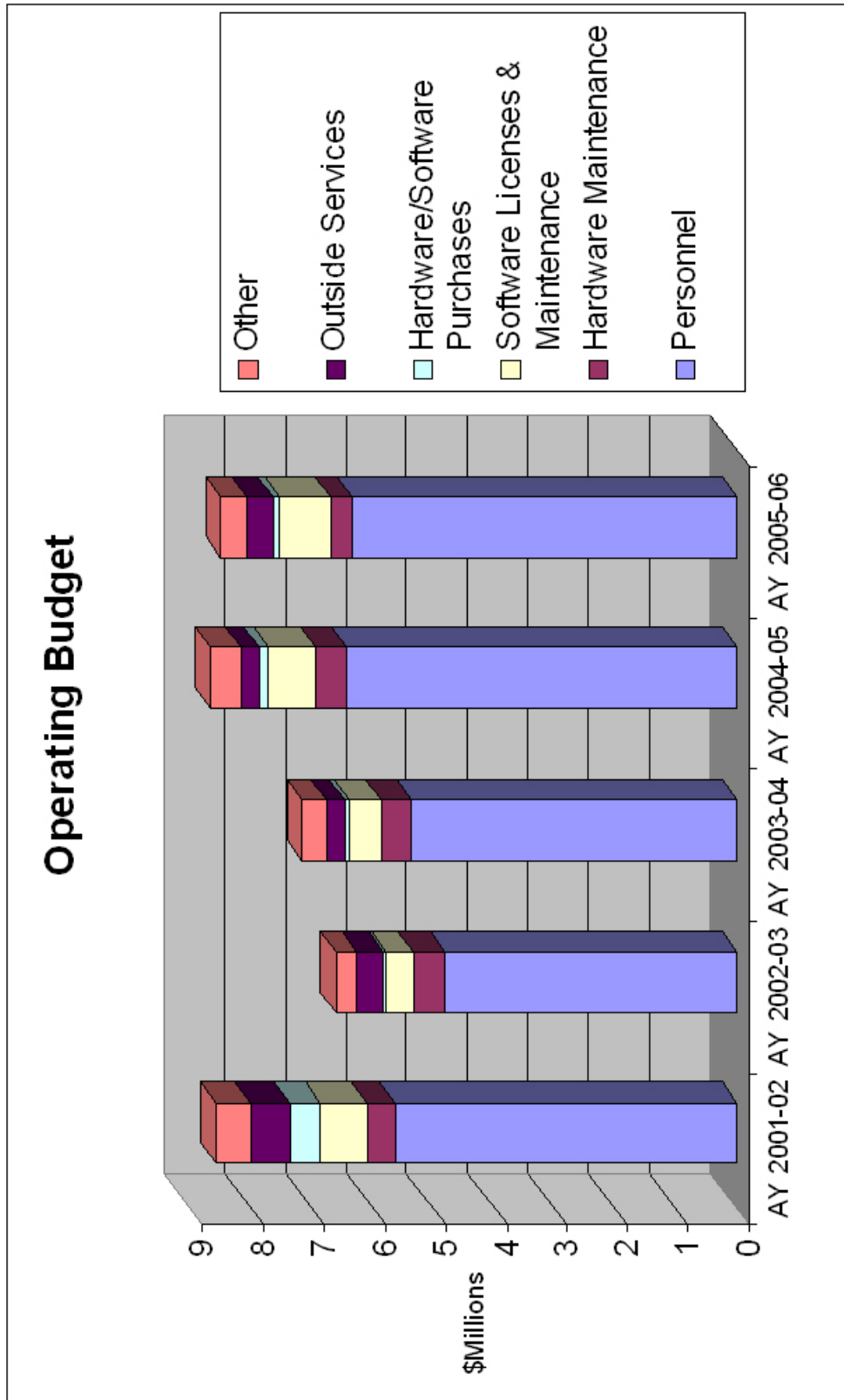


Figure 1.1. Operating Budgets.

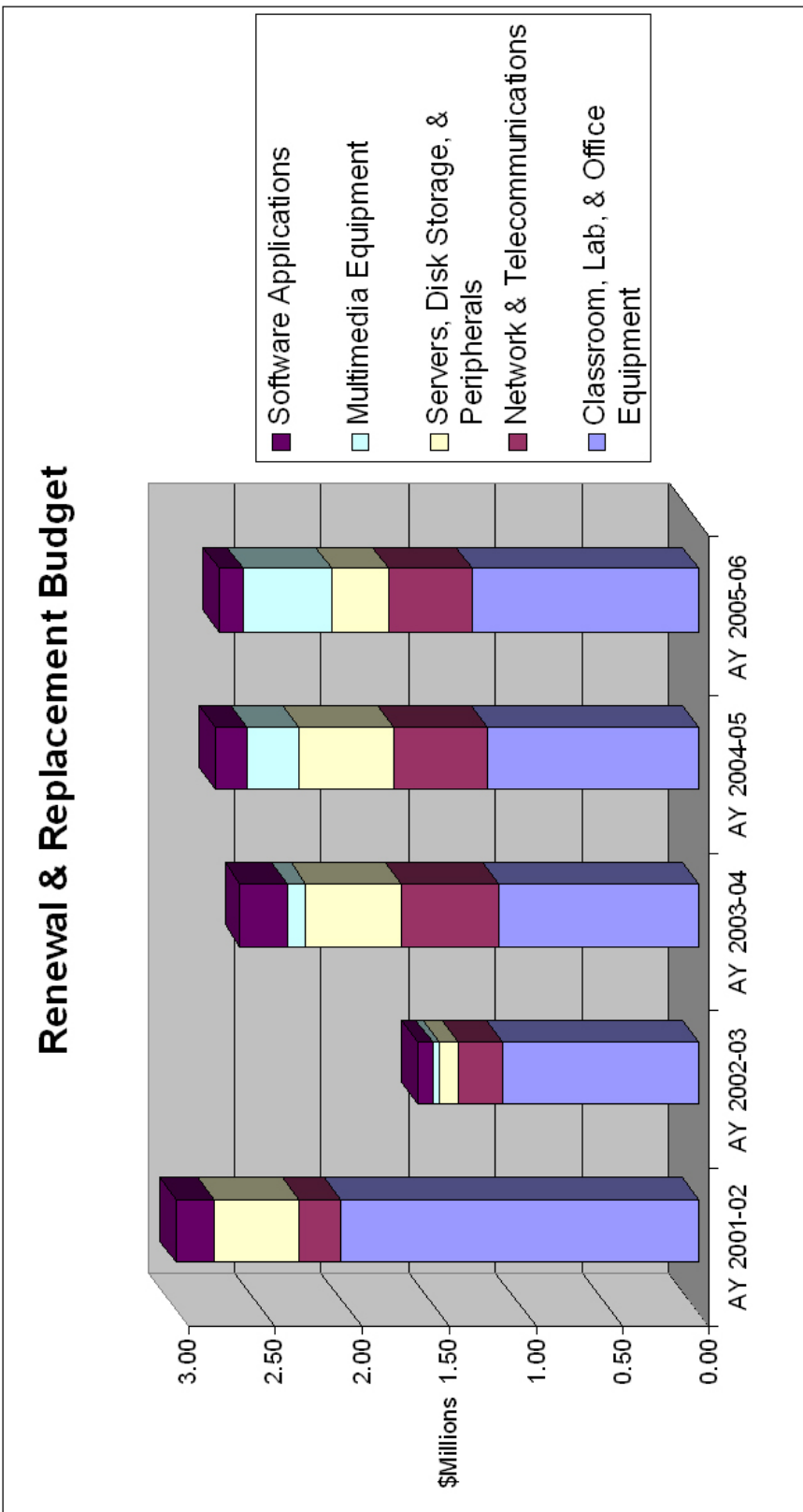


Figure 1.2. Renewal & Replacement Budgets.

## **Major Accomplishments for AY 2004-2005**

Nearly 200 projects were in process or started during AY 2004-2005. Several were delayed due to budget constraints; some were cancelled due to the emergence of more effective technologies or alternative methods to achieve the same end result; a few will continue into AY 2005-2006; 88 were completed; and 50 are targeted for completion by 6/30/2005.

Descriptions of 8 of these Major Accomplishments follow.

### **Implement Exchange 2003**

It has been four years since Sinclair Community College installed the Microsoft Exchange 2000 messaging system. Since then, there has been an increased use of, and reliance on, e-mail in the general course of college business. During AY 2004-2005, Sinclair Community College's Exchange 2000 based messaging infrastructure was upgraded to a Exchange 2003 based messaging infrastructure to provide a more robust and reliable system. This new infrastructure was architected to provide Sinclair with a messaging system that will scale to meet Sinclair's needs for the foreseeable future.

Because the full benefits of Microsoft Exchange 2003 can only be realized through the use of Microsoft Outlook 2003 clients, a separate project was initiated to upgrade all Microsoft Office installations for faculty/staff to Office 2003, which in turn upgraded all Exchange clients to Outlook 2003. The Outlook 2003 upgrade was completed in January 2005.

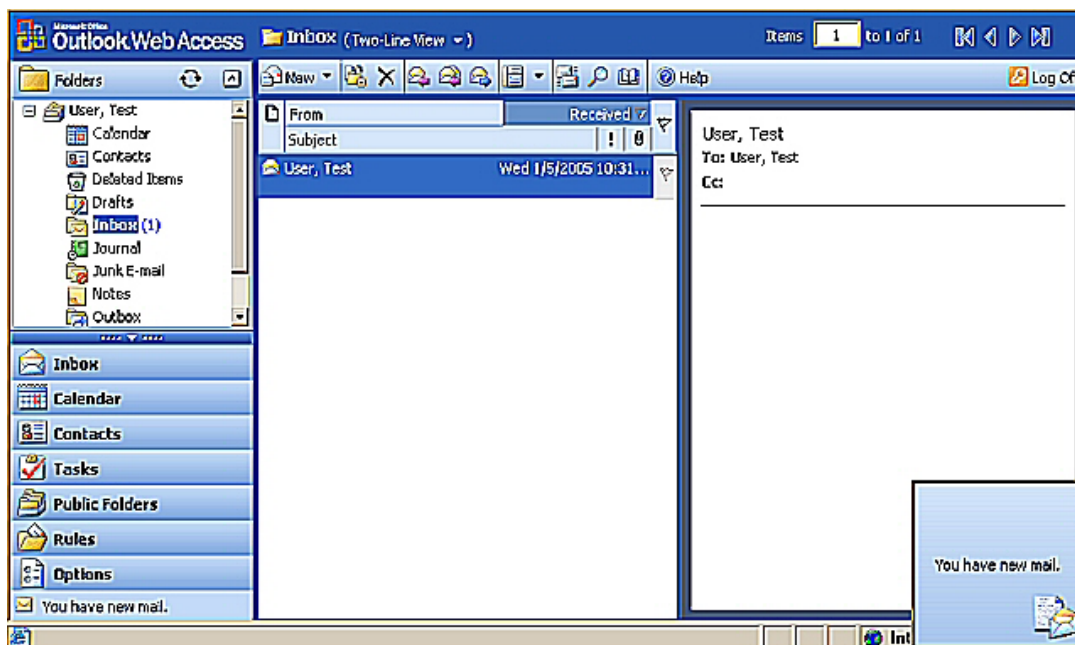


Figure 1.3. Exchange Server 2003's enhanced user interface for Outlook Web Access (OWA).

## Implement Standardization of Server Images

Information Technology Services regularly deploys/re-deploys servers and applications to support college-wide initiatives. Due to the amount of ITS resources used in the deployment/re-deployment effort, this project was initiated to create a process in which a software application (Altiris) is used to automate the installation of a standardized server operating system image. This has decreased the amount of ITS resources necessary to deploy/re-deploy servers from 1 - 2 days, to hours, while at the same time, providing a more consistent, standardized operating system installation.

## Upgrade Storage Area Network Infrastructure Components

The Storage Area Network (SAN) is a dedicated network for data storage devices (i.e., disk drives, tape drives, etc.). It is separate from the Local Area Network (LAN) that connects the workstations and servers. This separation allows high-speed access to data and applications by the servers without impacting LAN traffic.

In the AY 2003-2004 budget, ITS identified the need to replace the 2 disk arrays that provided 4 terabytes of data storage shared by approximately 35 servers connected to the SAN. As we reviewed technologies from various vendors, we determined that we could also replace the tape libraries and the switches that provide connectivity to the SAN within the allocated budget. In addition to the hardware components that made up the SAN, we determined that we could replace the backup software that was used in conjunction with the tape libraries, a critical need that we had planned on budgeting in the next year's operating budget.

By combining the SAN switches, disk array, tape library (shown in Figures 1.4, 1.5, and 1.6), and backup software in a single RFP, a much higher incentive for competitive pricing was provided to the vendors. The resulting configuration provides greater reliability, decreased maintenance costs, and double the amount of disk storage on the SAN to 8 terabytes.



**Figure 1.4.** The HP EVA5000 storage array holds 122 disk drives with 8 terabytes of disk storage.



**Figure 1.5.** The HP MSL6030 and MSL6060 combine to provide 6 400gb tape drives and 90 tape slots.



**Figure 1.6.** 4 Brocade fiber channel switches provide the connectivity for the servers that access the SAN and the tape libraries shown above.

## Curriculum Management Tool (CMT)

Web systems worked with the Academic Division to create a web-based system for initiating, tracking, and approving changes to courses and programs. This system replaces the previously used Keyfile system which did not provide all of the functionality needed and stored curricular information in a format that was not easily retrieved by other systems. The web-based system, shown in Figure 1.7, includes review and approval processes and stores information in a Microsoft SQL Server database.

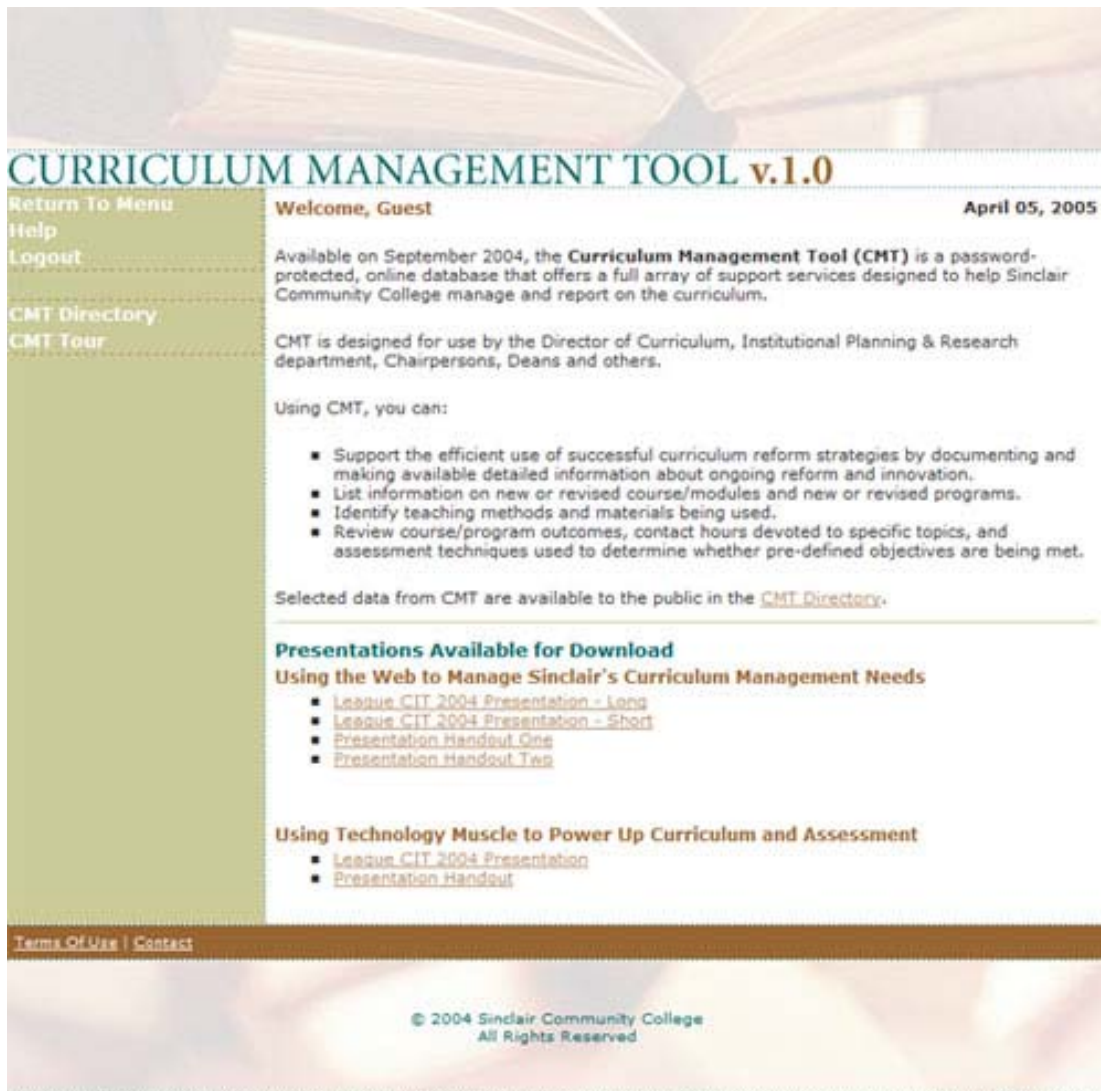


Figure 1.7. CMT Initial Screen.

## Data Warehouse Implementation

The development of an institutional data warehouse is the first required step in a series of projects designed to improve reporting capabilities at the institution and to empower users to extract and analyze information they need to make informed decisions. An institutional data warehouse, combined with related analytic tools and easy access, gives users the ability to use data to improve decision making.

## Course Applicability System (CAS) Implementation

The Board of Regents is requiring that all Ohio public institutions be “fully implemented” in CAS by April 2005. The purpose of this project is to implement an interface (shown in Figure 1.8) so that transfer and degree audit information can be passed between Sinclair’s Colleague system and CAS.

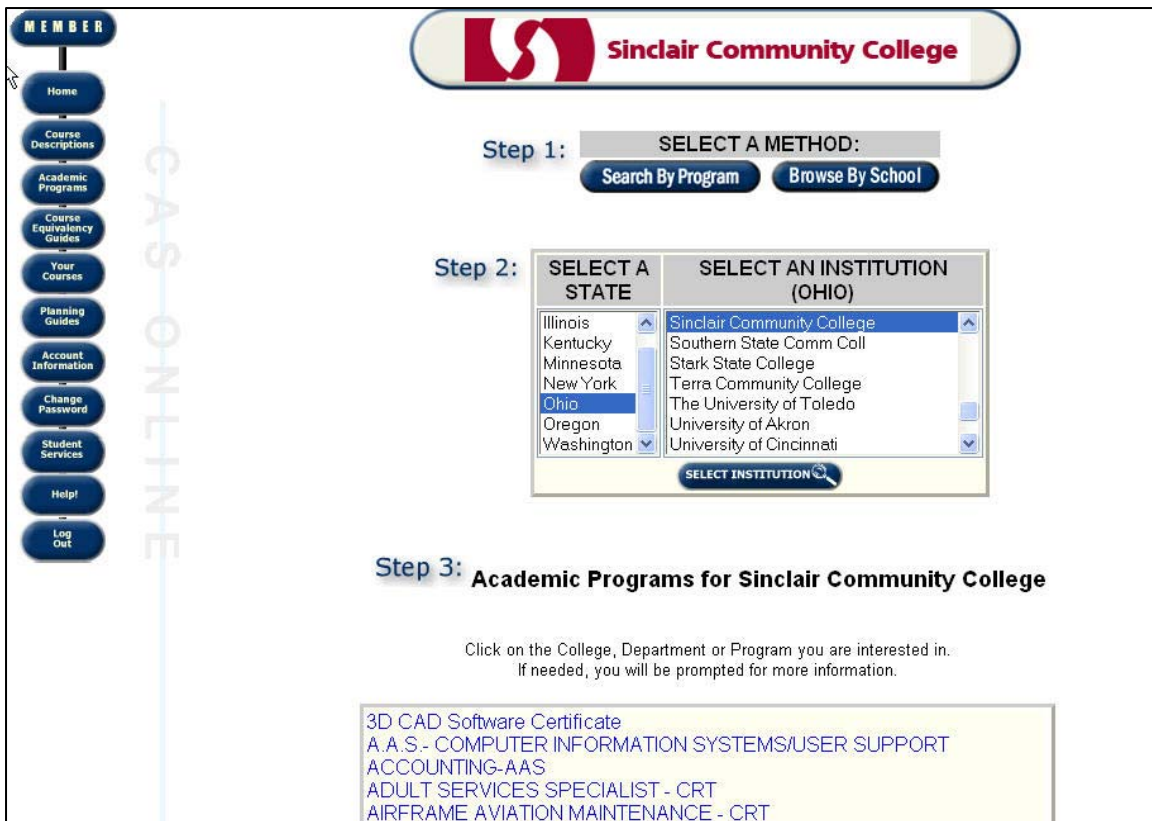


Figure 1.8. Course Applicability System.

## Implementation of a College-wide Security Awareness, Training, and Education (SATE) Program

The Sinclair Security Awareness, Training, and Education program includes:

- An Information Security Web Site;
- A campus-wide SATE needs approach;
- Audience segmentation based on identified needs; and
- Communication of timely awareness topics based on criticality/currency.



Figure 1.9. Sample Security Awareness Brochures.

## Temporary Library Project

Because the renovation project will close the existing LRC, the college needed a Temporary Library to provide a full range of library services until the renovation is complete in 2006. Space was found for a Temporary Library in the Ballroom of Building 7. Library staff consulted with faculty and selected a small but highly relevant book collection to move to the ballroom while the remainder of the collection is placed in storage for the duration of the renovation project. Thirty four public computers were also set up for library users. An office space was converted to a library classroom for information literacy instruction. Staff offices were also moved to the site, shown in Figure 1.10.





Figure 1.10. Temporary Library.

## **Major Projects for AY2005-2006**

Many innovative projects are in process or planned to start during AY 2005-2006.

Descriptions of 8 of these Major Projects follow.

### **Network Security Enhancements**

In today's IT climate, users expect the network to be everywhere and available at all times, but they expect it to be secure as well; this is the balance that must be maintained through the implementation of this project. In addition, Sinclair Community College will be able to protect and enhance its reputation as an institution that leads the way in IT innovation.

ITS worked to develop a plan for a secure LAN with the goal of constructing a system in a fashion that allows each phase to build upon the previous, to maximize efficiency of implementation, and to allow incremental progress to be made without impacting areas of the system that are currently in production. The resulting plan consists of five phases:

- **Network Acceptable Use Policy** – utilizes a policy hierarchy as the basis for populating user roles with services and rules to match the desired network behavior. The policy defines the various user roles that can be assigned to a network switch-port and the allowable communications for each role. **This phase was completed in December 2004.**
- **Network Management System (NMS) Application**– the tools for getting the system installed. The NMS application assists in the administrative tasks necessary to quickly deploy tasks such as device management, switch configuration backup and restore, firmware upgrades, device inventory management and change control, and policy configuration and deployment. **This phase was completed in December 2004.**
- **Dynamic Intrusion Response** – implementation of response processes to network security events. Implementation includes use of a Quarantine role, Enterasys Dragon IDS and Netsight Automated Security Manager (ASM) to perform responses. **This phase was completed in February 2005.**
- **Authentication (Phase I)** – addresses the authentication steps for imaged PCs (a Sinclair PC with a standard set of software, including antivirus and security patches). After the imaged PC is recognized by the system, the user’s role is defined upon login to a network switch-port, and the policy that enforces that user role is applied. **This phase was completed in March 2005.**
- **Authentication (Phase II)** – addresses the authentication for non-imaged PCs. Non-imaged PCs are scanned by the system. If the non-imaged PC has problems, the system places the PC in quarantine in a pre-defined remediation role. If the PC has no problems or its problems have been resolved by the system, it is assigned an Unknown PC role which limits user access to services such as web access. **This phase will be completed in May 2005.**

Once each of the phases mentioned above is completed, the infrastructure is in place to support the campus-wide implementation of that phase’s changes. Each of these changes require a significant amount of planning and coordination besides the actual change itself, which alone can be a huge undertaking. Over the course of the next academic year, we will develop a detailed plan and implement the above capabilities throughout the campus network.

## Voice Over IP (VOIP) Pilot

The VOIP pilot is a project to develop a better understanding of the operation of, and determine the viability and capability of, the newest technology phone system. This is very important as Sinclair is within two years of replacing the present phone system

based on the current R&R schedule. This project will provide for a small VOIP system to be installed in an undetermined department or remote office to test abilities and compatibility with the present phone system and the Sinclair LAN. The trial will provide an evaluation of the VOIP capabilities, its remote administration, features, and its effect on the Sinclair network. This trial will also help to define a deployment strategy. This will be weighed against the capital commitment that will be required to change out the entire phone system.

## Internet Capacity Expansion

Due to the exponential growth of Internet usage at Sinclair , it is necessary to plan for the increased capacity that will be needed to provide an acceptable level of response. ITS is planning on reviewing the several alternatives for new connectivity to the Third Frontier Network being built by OARnet. Since the installation of an alternate provider for disaster recovery purposes, ITS will be actively looking to improve and increase the bandwidth to both providers on an economical basis to maintain and increase the level of service. ITS will also be reviewing some strategic partnerships that could further enhance this project and its funding. When the review is completed, a recommendation will be put forth for approval and implementation.

## Colleague R18 Preparation

The next Colleague version is scheduled to be released in summer 2005. It is expected that Sinclair will adopt the new release in AY 2006-07. In order to prepare for this release, activities such as the following need to take place:

- Convert all I descriptors to computed columns;
- Convert all custom programming to R18 standards;
- Run all planning tools and converters; and
- Deploy the User Interface (UI) campus wide.

## SAS Implementation

The SAS Institute is making a major commitment to develop products and services that promote cooperative efforts between K12 and higher education. It is Sinclair's strategic vision to be a founding member of this initiative. The specifics of the project are not currently finalized, but it is anticipated that at the very least participation will involve deployment of SAS' high-end analytics.

## Online Transcript Exchange

The explosion of e-commerce has placed a spotlight on the need for institutions to be able to exchange electronic copies of student transcripts. Both national and state efforts are underway – Speede nationally, CAS in Ohio. This project involves the identification and implementation of the technology most appropriate to meet Sinclair’s needs.

## Development of Information Security Policy

An information security policy will be developed to define the College’s goals, objectives, and general strategy for Information security achievement. The policy will provide guidance to ensure legislative compliance, protection of assets, and effective protection of confidentiality and privacy. The policy will define what types of information assets need to be protected, minimum requirements for protection, and who has the responsibility and authority for operational policies and procedures to implement the policy.

## LRC Renovation

The primary project for the LRC in AY 2005-2006 will continue to be the completion of the Renovation Project. Demolition and construction should be underway by the start of the fiscal year. In anticipation of working together in the renovated Library, library staff will need to work with IT, Writing Center, Developmental Learning, Aramark, and others to plan and coordinate services and support when the new facility opens. Library staff will also need to plan another move back into staff spaces, set up of service points, reconfiguration of library shelves and shifting the print collections, and a host of similar activities involved in reopening a library.

# Section 2

# Introduction



## Introduction

### Challenges

Information Technology (IT) has become such an integral part of our operational landscape, the success of many other initiatives are highly dependent on technological development and maintenance.

There are many challenges in the Information Technology Division today from funding to infrastructure security to identity management to staying current with governmental and regulatory changes. However, first and foremost, IT projects must support the strategic initiatives of the institution.

The five basic objectives for IT for AY 2005-2006 are as follows:

1. **Achieve innovation and growth while managing costs.** We cannot stop innovating, and we cannot stop growing, but we must be strong financial stewards.
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4. **Develop the next generation of IT leaders.** We must mentor our IT staff to become true leaders, to build productive relationships with faculty and staff and with external partners.
5. **Manage user expectations.** Unknown, unclear, and unrealistic expectations of IT on the part of any constituents are precursors of failure. We must understand and manage expectations to guarantee success.

These five objectives are consistent with the Mission of the College and the Organization of Strategic Planning as stated in Figure 2.1 on the next page. Likewise, all IT projects are aligned with the Sinclair Strategic Clusters and are color-coded throughout this document to reflect this alignment.

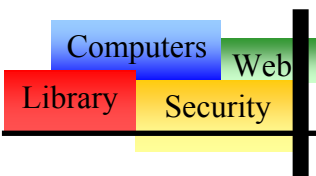
## Sinclair Community College Organization of Strategic Planning

### College Mission:

The mission of the College is to find the need and endeavor to meet it. The College meets this mission by providing pre-college developmental education and accredited college education leading to careers, personal and professional development and preparation for further higher education. The College operates as a publicly-supported, low-cost, open-access, commuter community college operating within the Miami Valley region of southwestern Ohio. Sinclair provides opportunities and services for traditionally underserved and educationally at-risk students.

<p><b>A. Student Learning and Support Services</b></p> <p>These are initiatives and issues that, in balance, are focused directly on students.</p> <p>This is the view of the college as an organization delivering a set of services to students.</p> <p><b>Examples</b></p> <ul style="list-style-type: none"> <li>• Degree Programs of Study</li> <li>• Courses</li> <li>• Testing and Assessment</li> <li>• Web Services</li> <li>• Tutoring</li> <li>• Advising</li> <li>• Teleports</li> <li>• Libraries</li> <li>• Career Advising</li> <li>• Bookstore</li> <li>• Parking</li> </ul>	<p><b>B. Workforce Development Services</b></p> <p>These are the initiatives and issues that, in balance, are focused directly on the needs of the community.</p> <p>This is a view of the college as an organization that delivers a set of services for the benefit of the community.</p> <p><b>Examples</b></p> <ul style="list-style-type: none"> <li>• Programs leading to skilled workers needed in the region</li> <li>• Programs leading to transfer to area universities</li> <li>• Conference Services</li> <li>• Consulting Services</li> </ul>	<p><b>C. Organizational Development and Effectiveness</b></p> <p>These are the initiatives and issues that, in balance, are focused directly on the maintenance as an organization.</p> <p>This is the view of the college as an organization that needs to be healthy and functional to thrive.</p> <p><b>Examples</b></p> <ul style="list-style-type: none"> <li>• Governance</li> <li>• HR Systems</li> <li>• Professional Development</li> <li>• Work Environment</li> <li>• Insurance</li> <li>• Legal</li> <li>• Buildings and Facilities</li> <li>• Technology</li> <li>• Diversity</li> <li>• Safety and Security</li> </ul>	<p><b>D. External Accountability and Community Service</b></p> <p>These are the initiatives and issues that, in balance, are focused directly on the external community and relations with external regulators, legislators, and accreditors.</p> <p><b>Examples</b></p> <ul style="list-style-type: none"> <li>• Board of Trustees</li> <li>• Board of Regents</li> <li>• North Central</li> <li>• Discipline Accreditation</li> <li>• OH Legislature</li> <li>• Mont. County Commission</li> <li>• National Science Found</li> <li>• U.S. Dept. of Ed.</li> <li>• OH Dept. of Ed.</li> <li>• Area Schools</li> <li>• Community Events</li> </ul>	<p><b>E. Financial Management and Resource Development</b></p> <p>These are the initiatives and issues focused directly on obtaining and managing resources to meet the mission of the college and to be accountable to the publics that the college serves.</p> <p><b>Examples</b></p> <ul style="list-style-type: none"> <li>• Levy</li> <li>• Private donors</li> <li>• Foundations</li> <li>• Auditing</li> <li>• Grants</li> <li>• Partnerships</li> <li>• State Formula Funding</li> <li>• Financial Management</li> <li>• Budgeting</li> </ul>
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Figure 2.1. Strategic Planning Clusters.



**IT Budget Trends**

The Operating Budgets and the Renewal and Replacement Budgets for the past three, the current, and the next academic years are provided in Figures 2.2 and 2.3, respectively. Although we have made some significant advances in information technology over the last four years, both of these budgets have remained at approximately the same level. The only exception is when the Learning Resources Center was moved to the IT Division in AY 2004-2005. As illustrated in Figure 2.2, the Operating Budget actually decreased nearly 1% from AY 2001-2002 to AY 2005-2006. Similarly, the Renewal and Replacement Budget decreased approximately 8% during the same time frame.



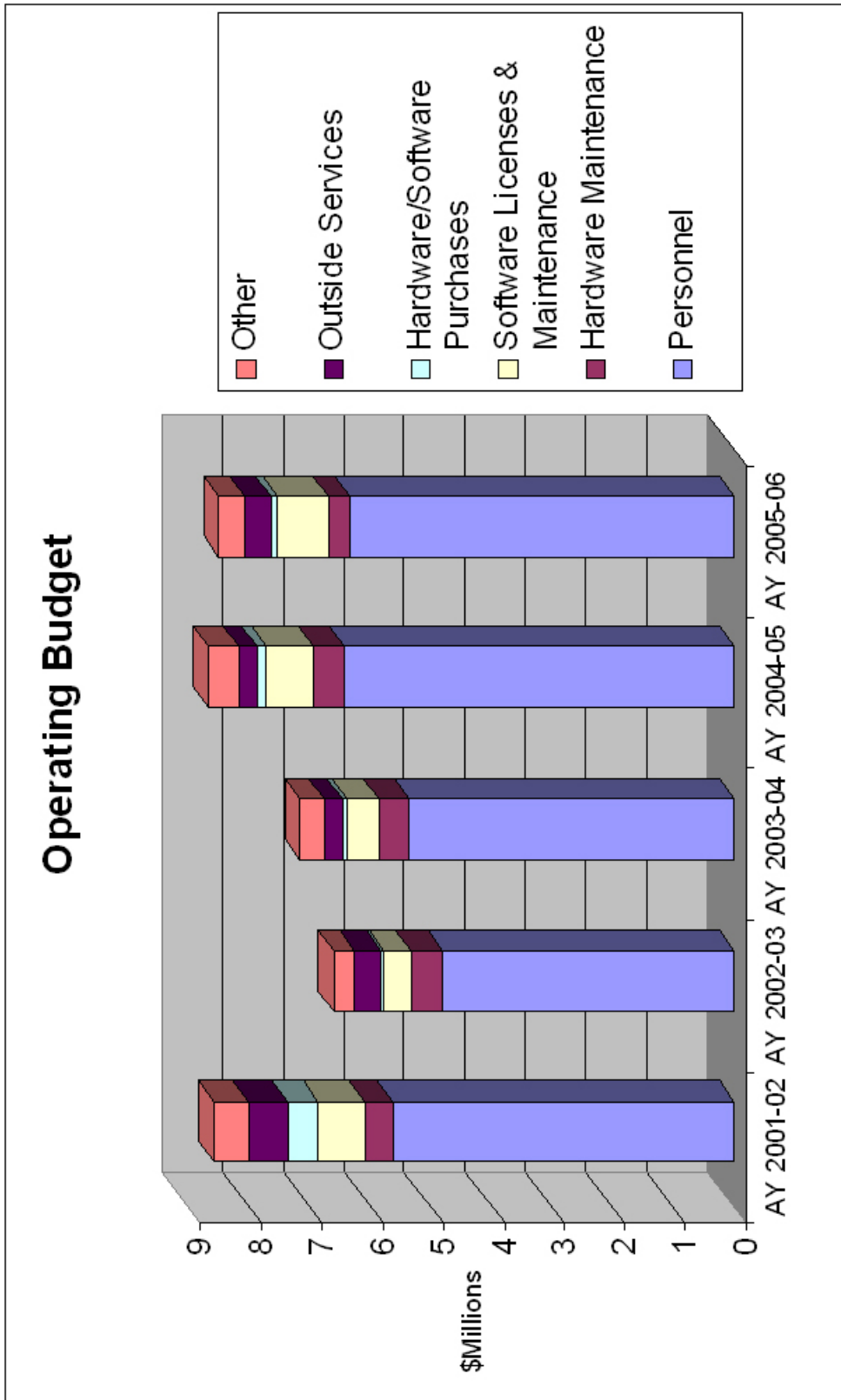


Figure 2.2. Operating Budgets.

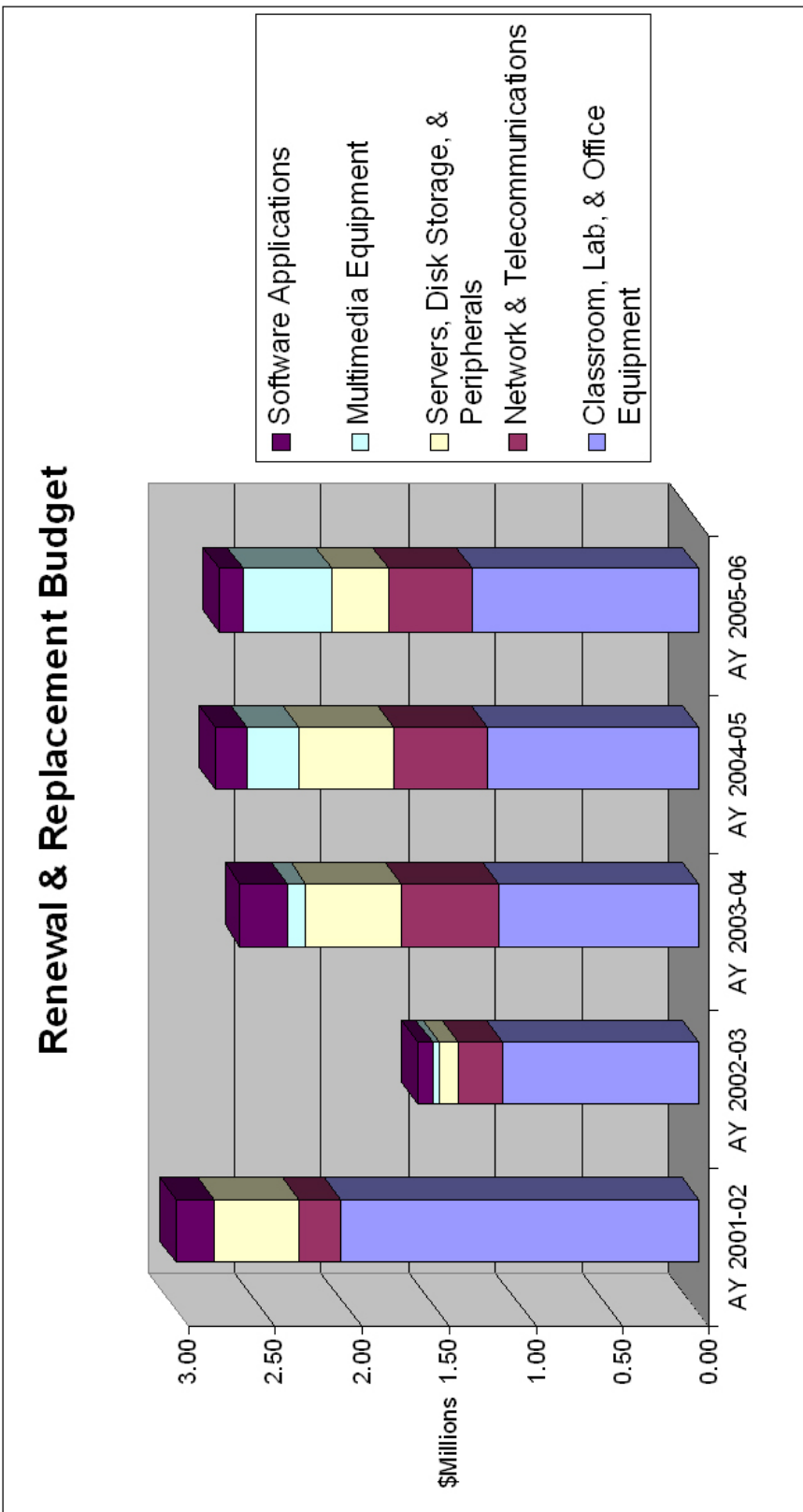


Figure 2.3. Renewal & Replacement Budgets.

## **IT Status Report and Strategic Objectives Contents**

This document contains a Status Report describing the Major Accomplishments for AY 2004-2005, a section explicating the Strategic Objectives (Major Projects) planned for AY 2005-2006, and a section which describes some of the future technologies to be considered for Sinclair Community College. Additionally, a glossary of IT terms is provided in Appendix A, and detail project lists are provided in Appendix B.

**Section 3**  
**Status Report**  
**Major**  
**Accomplishments**  
**For**  
**AY 2004-2005**



## Major Accomplishments for AY 2004-2005

Nearly 200 projects were in process or started during AY 2004-2005. Several were delayed due to budget constraints; some were cancelled due to the emergence of more effective technologies or alternative methods to achieve the same end result; a few will continue into AY 2005-2006; 88 were completed; and 50 are targeted for completion by 6/30/2005. Appendix A contains a complete listing of the completed projects and those targeted for completion by 6/30/2005. Many of those completed provide innovative processes for students, faculty, and staff. This section describes many of the more significant project accomplishments. Each project title is color coded to reflect the Sinclair Strategic Cluster supported (as defined on page 2-3).

### Information Technology Services

Following are the Major Accomplishments for AY 2004-2005 for the Information Technology Services Department:

- **Implement Exchange 2003**
- **Office 2000 SP3 Upgrade**
- **Microsoft Office 2003**
- **Upgrade File Servers**
- **Pilot-Test Campus-Wide Streaming Media**
- **Implement Standardization of Server Images**
- **Upgrade Voicemail System**
- **Implement Windows 2003 Production Server Environment**
- **Improved Processes for Image Deployment, Updating, & Patching**
- **Off-Campus Remote Control Study**
- **License Metering**
- **Part-Time Employee Scheduling**
- **Upgrade CIL Media Equipment**
- **Upgrade Data Network Infrastructure Components**
- **Upgrade Storage Area Network Infrastructure Components**
- **Upgrade the Colleague System's Hardware Platform**
- **Implement Improved Enterprise Backup System**
- **Network Desktop Security**
- **Customer Expectation Interviews**

Descriptions of these projects are presented on the following pages.

## Implement Exchange 2003

It has been four years since Sinclair Community College installed the Microsoft Exchange 2000 messaging system. Since then, there has been an increased use of, and reliance on, e-mail in the general course of college business. During AY 2004-2005, Sinclair Community College's Exchange 2000 based messaging infrastructure was upgraded to a Exchange 2003 based messaging infrastructure to provide a more robust and reliable system. This new infrastructure was architected to provide Sinclair with a messaging system that will scale to meet Sinclair's needs for the foreseeable future.

Because the full benefits of Microsoft Exchange 2003 can only be realized through the use of Microsoft Outlook 2003 clients, a separate project was initiated to upgrade all Microsoft Office installations for faculty/staff to Office 2003, which in turn upgraded all Exchange clients to Outlook 2003. The Outlook 2003 upgrade was completed in January 2005.

**Quantitative/Qualitative Return on Investment:** Prior to this upgrade, Sinclair's messaging system was comprised of 3 servers running Microsoft Windows 2000 and Microsoft Exchange 2000. This architecture provided Sinclair with a reliable email system for the past 4 years. This past year, however, the system started to show its age with slower performance and markedly increased maintenance requirements.

The messaging system upgrade was architected with future growth and scalability in mind. Information Technology Services installed six new servers with Microsoft Windows 2003 Server and Microsoft Exchange 2003. Microsoft Exchange Server 2003, along with Windows 2003 server, offers several benefits over Exchange 2000. Some of these benefits are:

- Enhanced security, manageability and performance;
- Higher availability and scalability; and
- Enhanced functionality and interface enhancements (as shown in Figure 3.1) to Outlook Web Access (OWA).

**Cost savings/Cost Avoidance Identified with the Project:** Costs associated with the increased maintenance of old hardware, plus costs associated with decreased productivity due to an increase in unplanned downtime for critical email functions have been avoided through this re-architecture and upgrade.

**Target Completion Date:** 4/30/2005

### Sinclair Strategic Clusters

Student Learning and Support Services	Workforce Development Services	Organizational Development and Effectiveness	External Accountability and Community Service	Financial Management and Resource Development
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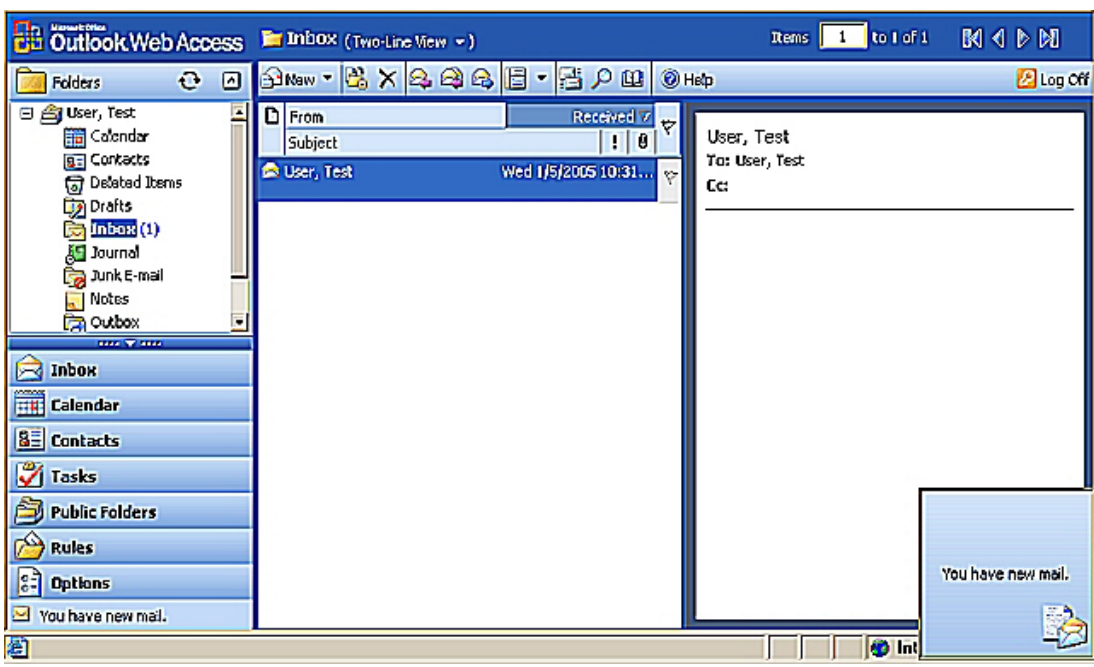


Figure 3.1. Exchange Server 2003’s enhanced user interface for Outlook Web Access (OWA).

**Actual Completion Date or Current Status:** All six servers have been configured with Microsoft Exchange 2003 and Microsoft Windows 2003 Server and deployed. Load balancing of the two OWA servers, plus migrating mailboxes to the additional servers will be completed by 4/30/2005.

### Office 2000 SP3 Upgrade

This project, which was planned for the purpose of distributing the SP3 (Service Pack 3) upgrade to Microsoft Office 2000, was discontinued in favor of the Exchange/Office 2003 upgrade. The Exchange/Office 2003 upgrade offered all of the benefits of Office 2000 SP3 plus additional features such as a much improved OWA (Outlook Web Access) interface that matches the one used on campus, side-by-side calendars, and improved junk mail filtering.

**Target Completion Date:** 12/31/2004

**Actual Completion Date or Current Status:** Cancelled and replaced with Microsoft Office 2003 project below.

### Microsoft Office 2003

Microsoft Office 2003 was implemented to take the best advantage of the enhancements associated with the upgrade to Exchange 2003. Office 2003 programs

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such as Word, Access, PowerPoint, and Outlook included many enhanced features. In addition, Outlook Web Access included additional and enhanced features such as an OWA interface that matches the one used on campus, side-by-side calendars, and improved junk mail filtering.

Exchange 2003 was initiated before the implementation of Office 2003. ITS started communication efforts in November 2004 with a Nessie information page (shown in Figure 3.2) and [our.sinclair.edu](http://our.sinclair.edu) pop-up ads. Updated articles were published periodically under College News on [our.sinclair.edu](http://our.sinclair.edu). Users were given the option of self-installing the software before an automatic install for all users that began January 31, 2005. Installation issues were resolved through the IT Help Desk.

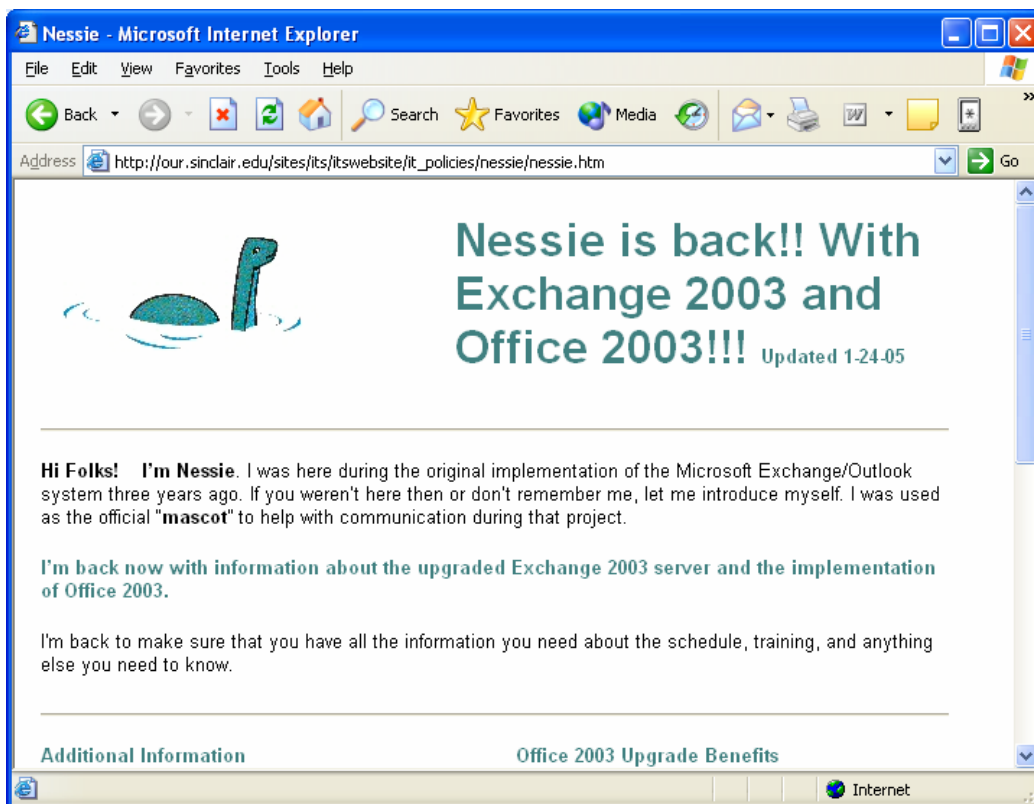


Figure 3.2. The Nessie theme was used to help communicate the Office 2003 implementation.

**Quantitative/Qualitative Return on Investment:** New versions of software provide not only enhancements to the software's capabilities but also provide fixes for bugs. Software that contains bugs can create significant issues with productivity for users as well as technical staff in the continual need to address problems.

**Target Completion Date:** 1/30/2005

**Actual Completion Date or Current Status:** 2/23/2005

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## Upgrade File Servers

Information Technology Services maintains a plan for the annual Renewal & Replacement (R&R) of Information Technology infrastructure components. This plan is used to project expenditures of these components over a 5 year period to provide the college's leadership with information to aid in budget planning. Each year, during the annual planning and budgeting cycle, the R&R plan is updated with any new information that would change expected expenditures for the coming year as well as the next 4 years.

Each item that is identified on the R&R plan has a useful life. This useful life along with the total cost of the equipment, determines the funds that must be set aside each year to replace the equipment when it has reached its end of life.

For AY 2004-2005, ITS identified six Windows servers that had reached the end of their 4 year useful life. Each server was evaluated based on the services they provided and server utilization. In addition, future growth and expansion of these services was estimated. Based on these criteria, six new servers were ordered.

**Quantitative/Qualitative Return on Investment:** One of the servers to be replaced had hardware problems and stopped functioning prior to its replacement. Since we were already working to replace that server, we had a new one in its place within 10 hours. If this server was not destined to be replaced, ITS would have incurred maintenance costs for repair, or would have waited weeks to procure new hardware to replace it.

**Cost savings/Cost Avoidance Identified with the Project:** Costs associated with the increased maintenance of old hardware, plus the unplanned downtime for the services these servers provide, are avoided through the regular replacement of aging hardware.

**Target Completion Date:** 4/15/2005

**Actual Completion Date or Current Status:** Currently, three of the six servers have been replaced. The remaining three servers will be replaced by 4/30/2005.

## Pilot-Test Campus-Wide Streaming Media

Historically, Internet content has progressed from "static" media (text and still photos) in the early 1990's to "dynamic" media comprising sound, videos and animation in the mid 1990's. Since then, rapid technological advances in streaming media technologies, along with concurrent advances in Internet connectivity and the resulting increased availability of high speed Internet connectivity, has enabled the delivery of rich, real-time multimedia content to the consumer.

Recognizing these trends in technology and the potential increase in demand for this technology, Sinclair put together a cross-functional team of faculty and staff to forecast what impact this technology will have on Sinclair, and how to position Sinclair to take advantage of this technology in educating students. Through the combined efforts of the Sinclair team and representatives from IBM, a pilot was initiated to focus on the centralized management of multi-media “assets” as well as the integration of these assets in learning scenarios, or “use cases”.

This pilot was implemented in two phases:

**Phase 1, the “Assessment and Design” phase:** The team developed a Conceptual Design Document and implementation roadmap. These documents specified 5 instructional “use cases” for Nursing Continuing Education, Sign Language, Physics, Automotive and Distance Learning. In addition, one marketing “use case” was developed to test Internet compatibility.

**Phase 2, the “Proof of Concept” phase:** The team used the “use cases” from Phase 1 to develop a Digital Asset Management solution (components are illustrated in Figures 3.3 and 3.4) that would support these “use cases” and also scale to handle additional user load and enhanced capabilities if/when necessary.

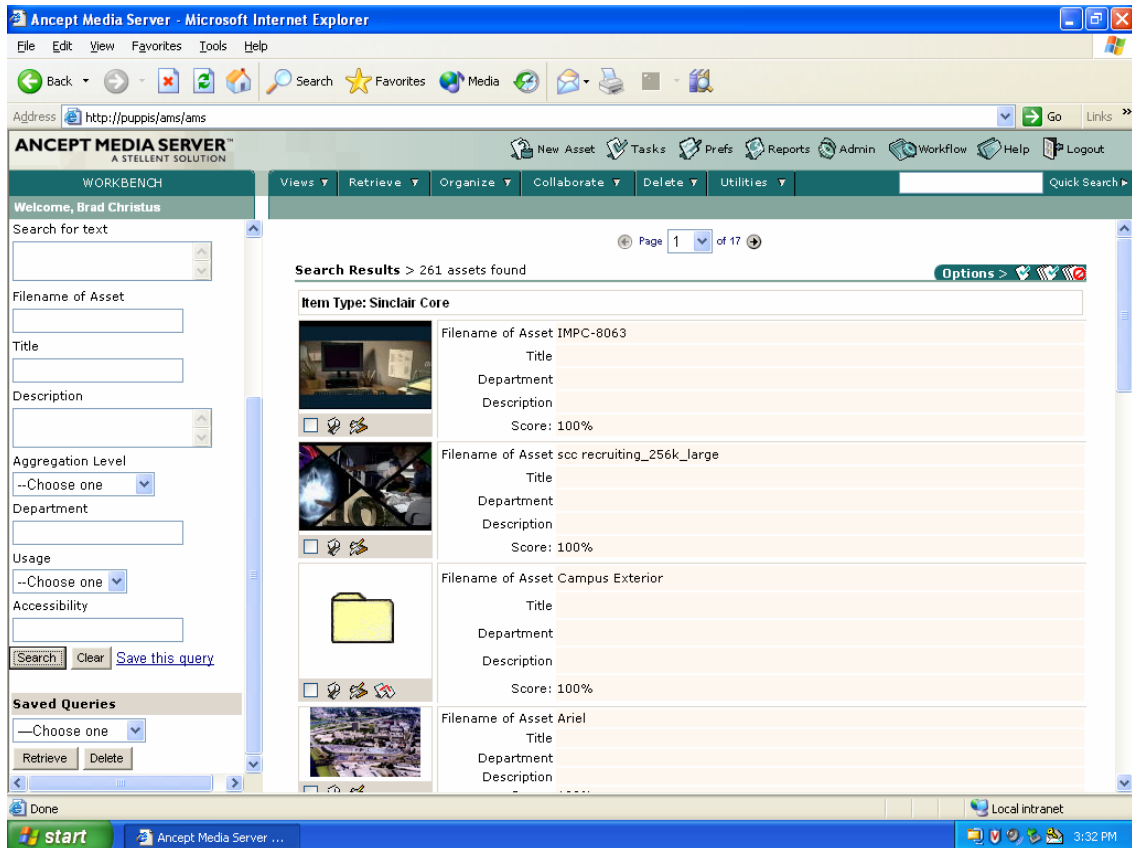
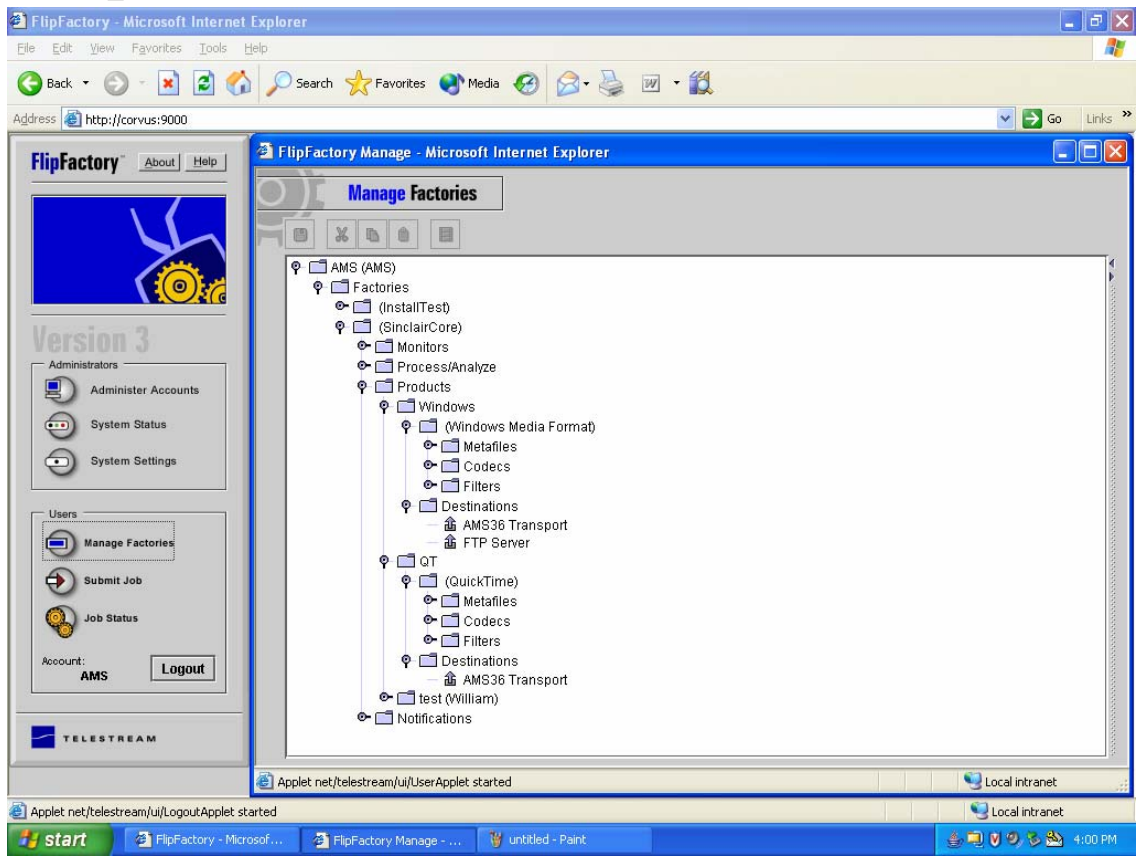


Figure 3.3. Stellent’s Ancept Media Server user interface showing search pane, thumbnails of ingested content along with displayed metadata.

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**Figure 3.4. Telestream’s FlipFactory user interface showing the Windows Media and Quicktime factories that have been configured.**

**Quantitative/Qualitative Return on Investment:** Many departments use multimedia content in a variety of ways. This project will allow the centralized management of video and audio content across campus. This will reduce costs and promote efficient use of digital assets through economies of scale and allow more widespread sharing of published multimedia content.

**Cost savings/Cost Avoidance Identified with the Project:** Cost savings will be realized through the centralized storage and management of digital assets by reducing the need for each department to recreate the digital asset management infrastructure as well as the asset creation process because it will already be in place.

**Target Completion Date:** 1/30/2005

**Actual Completion Date or Current Status:** Content management software from IBM, along with software from Stellent and Telestream, was installed onto three servers dedicated for this project and system configuration was completed the week of 2/28/2005. The policies, procedures and methods to create, store and distribute digital assets are still being developed and a second project has been created to address the work that remains. The team is working with the “use case” sponsors to help integrate digital assets into their curriculum to be used Summer/Fall 2005.

## Implement Standardization of Server Images

Information Technology Services regularly deploys/re-deploys servers and applications to support college-wide initiatives. Due to the amount of ITS resources used in the deployment/re-deployment effort, this project was initiated to create a process in which a software application (Altiris) is used to automate the installation of a standardized server operating system image. This has decreased the amount of ITS resources necessary to deploy/re-deploy servers from 1 – 2 days, to hours, while at the same time, providing a more consistent, standardized operating system installation.

**Quantitative/Qualitative Return on Investment:** The labor component of installing a new server has been decreased from 1-2 days to hours which frees up technical resources to perform other tasks. Currently, a new server can be unboxed, connected to the network without any operating system installed, and once powered on, will automatically be installed with a standard operating system “image”.

**Target Completion Date:** 11/30/2004

**Actual Completion Date or Current Status:** 3/8/2005

## Upgrade Voicemail System

The voicemail component of the Telephone system was to be upgraded in AY 2004-2005 but was delayed due to budget constraints. The voicemail system has 40 ports, and there are no indications that additional ports are necessary. Also, the current voicemail system has no capability for newer features that might be desirable such as unified messaging. We’ve determined that since the system meets our current needs and has no immediate need to be replaced, we will investigate alternatives for its replacement with our VOIP Pilot project that is planned for AY 2005-2006.

**Target Completion Date:** 9/30/2004

**Actual Completion Date or Current Status:** Project was not pursued due to budget constraints but the need to upgrade will be re-evaluated with the VOIP system pilot that will be completed by 3/1/2006.

## Implement Windows 2003 Production Server Environment

Windows 2003 Server is Microsoft’s latest server operating system that has been touted as providing increased security, performance, and manageability over Windows 2000 Server. During the past year, Information Technology Services began the process of identifying all of the steps involved to accomplish this upgrade for the 12

Domain Controllers. The following items were identified as dependencies for this project: the naming scheme for user IDs had to be changed to First.Last; verify there were no labs on campus still using non-supported Windows Operating systems that do not support native mode (Windows NT, 98, 95); verify there were no legacy applications on campus using NetBIOS; and implement Native Mode on Exchange. ITS will begin implementing Windows 2003 Server in April 2005.

**Target Completion Date:** 12/31/2004

**Actual Completion Date or Current Status:** As this project was started, we assumed that we would develop a plan to perform an in-place upgrade of Windows 2000 Servers to Windows 2003. Through our evaluation of the new operating system's capabilities, we determined that there is no need to upgrade existing servers to the new OS. Our plan is to re-install servers with the new operating system as they are replaced through the R&R process .

### Improved Processes for Image Deployment, Updating, & Patching

Image deployment software facilitates the imaging of PCs remotely using a capability called IP multicasting. Using this type of system allows specific applications, or a newer version of an application, to be deployed easily to a full lab of computers simultaneously rather than physically installing the software on each lab PC individually.

ITS researched and tested different software packages that provide image deployment on campus and chose Altiris (see Altiris project from AY 2003-2004). ITS Systems Engineers and Network Application Specialists attended vendor training, tested the software with administrative and lab image deployments, and successfully created new images for the labs and administrative desktops. ITS technicians are now using Altiris to image a large quantity of PCs at once and are able to expedite the lab PC replacement process and lab re-image process. Altiris has provided us with a mechanism to accomplish multiple PC imaging over the network with negligible impact on the users.

ITS is now in the process of researching the inventorying capabilities Altiris provides that will allow us to ensure all computers are using the same software as installed, and to provide an accurate and dependable hardware inventory of all networked systems. ITS has been capturing software and hardware inventory data from PCs that have the Altiris agent loaded on them. The challenges in implementing this are that not all PCs on campus are imaged so they do not include the "Altiris agent" and the frequency that PC data is collected in the Altiris database means that the database will not be completely up to date. Processes are still being identified and discussed to determine how best to approach the inventory capabilities provided by Altiris and what additional processes need to be developed around the system.

**Quantitative/Qualitative Return on Investment:** This process allows for more frequent updating of campus PCs with less manpower expenditures, and provides better services for students, faculty, and staff.

**Target Completion Date:** 6/30/2005

**Actual Completion Date or Current Status:** Processes for deploying images using multicasting are in place. Updating and patching capabilities as well as collection of inventory data using Altiris continue to have issues due to the non-imaged PCs. Implementation of the physical inventory processes that are mentioned under a separate project will help to identify where there are issues that need to be investigated. Other update processes have been implemented using Microsoft's Systems Update Server and McAfee's ePolicy Orchestrator.

## Off-Campus Remote Control Study

The quantity of Help Desk calls from off-campus users has increased with the support of students and increasing number of faculty and staff accessing information from home. Remote control software would provide the Help Desk with the ability to view a client's monitor and access the mouse and keyboard.

Our primary objectives were to investigate the benefits of using remote access and to determine if the total cost would outweigh the cost of a remote control application.

ITS determined that the number of calls from off-campus that would benefit from the remote control would be less than 10% compared to the cost of remote software at around \$50,000. Therefore, purchasing the remote control software would not be justifiable at this time.

**Target Completion Date:** 6/30/2004

**Actual Completion Date:** 8/31/2004

## License Metering

The common software that is contained in the standard Windows image is purchased by ITS for all administrative and academic PCs. There are many other software applications on campus that are utilized for instructional purposes that need to be in multiple classrooms but are not being used concurrently. License metering enables the applications to be installed in multiple classrooms without violating license agreements.

To gain the benefits through metering, ITS purchased an application from Sassafras Software called K2. The purchase of the Sassafras software has eliminated duplication of software purchases while enabling more labs to utilize the various applications.

**Qualitative/Quantitative Return on Investment:** Purchasing the Sassafras software provides cost savings in the duplication of software and in creating more efficient processes for the imaging of PCs and scheduling of computer classrooms.

**Target Completion Date:** 6/22/2004

**Actual Completion Date:** 6/30/2004

## Part-Time Employee Scheduling

Sinclair Community College part-time and student employees play a major role in providing quality customer service. One of the biggest challenges many departments face is creating a schedule to ensure coverage and expertise to specific work areas day by day and quarter by quarter while also considering the varied availability of part-time employees.

To meet these difficult demands, representatives from ITS (i.e., Media Services and IT Labs), Tutorial Services, Testing Center and the LRC formed a team to evaluate the needs and requirements for each department and to document what the expectations were for the scheduling software. After careful evaluation, it was found that Tutorial Services needed more features out of an application than the other departments and had the biggest need to find a scheduling package to replace their antiquated system developed in Microsoft Access 97.

After reviewing multiple software applications, the team found TutorTrac, a scheduling package that would fulfill the needs and requirements of Tutorial Services. TutorTrac, a web-based, in-house scheduling application (shown in Figure 3.5) has been purchased and is currently being implemented. In the next fiscal year, we will investigate whether other departments can use TutorTrac for their part-time staff scheduling.

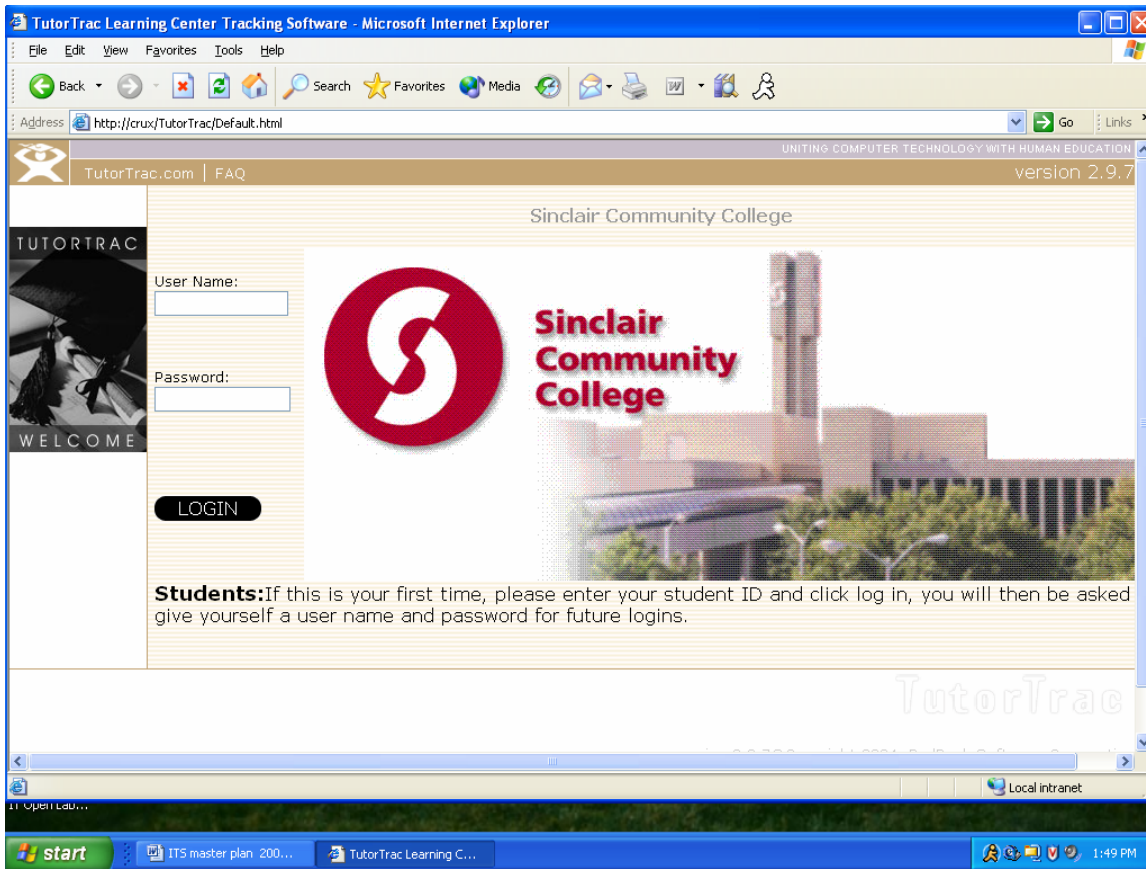


Figure 3.5. The Tutorial Services office has chosen TutorTrac for scheduling their part-time tutors.

**Target Completion Date:** 6/1/2004

**Actual Completion Date:** 11/15/2004

## Upgrade CIL Media Equipment

This project was created to provide upgrades to the 9 multimedia rooms that were installed along with the construction of Building 14. These rooms were the original concept for what became podium rooms, but enhancements have been made to the podium design since they were implemented and the equipment has reached the end of its useful life.

In addition to needing to upgrade the multimedia rooms, Media Services requested funding for an additional Interactive Learning Classroom (ILC) and head end control system for Distance Learning videoconferencing classes during AY 2004-2005, but funding for this project was not approved. However, since new videoconferencing initiatives are inevitable with the addition of remote Sinclair campus sites, and a major purpose for the request was to pilot a new multimedia control system to replace the

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aging and unsupported existing control system, Media Services began looking for alternative ways to achieve this goal. Media Services worked with local consultants and audio video dealers in order to form a budget that plans to use available funding to pilot the new control system in one existing ILC and still be able to upgrade 9 of the CIL classrooms to the campus standard. While this does not give Sinclair the additional ILC originally requested, it does allow the implementation and testing of a new, fully supported control system.

**Quantitative/Qualitative Return on Investment:** Media Services requested funding for an additional ILC and head end control system for Distance Learning videoconferencing classes during AY 2004-2005. The projected costs for this project were \$254,000. This request was made because the existing control system is no longer supported and will need to be replaced. However, we believed that we could not afford to simply replace it with an untested system because of the risk to the Distance Learning class schedule combined with the addition of new videoconferencing needs with the addition of new off-campus Sinclair sites.

When the budget request was not approved, Media Services began looking for alternative ways to accomplish the goal of piloting a new control system without harming current or future distance learning videoconferencing efforts. We found, by working with local consultants and audio video dealers, that we could modify one existing room to be controlled simultaneously by both the old and the new control systems. This would enable us to test and work the bugs out of the new control system before a complete conversion of all three existing interactive learning classrooms. We also found that we could accomplish this within the existing R&R funds available to us.

Using approximately \$220,000 of R&R funds, Media Services will pilot test the new control system in the head end and in room 14-108. It will also upgrade six classrooms in building 14 to standard multimedia podium rooms and convert two classrooms and one meeting room to the standard meeting room configuration.

**Cost savings/Cost Avoidance Identified with the Project:** \$254,000 was requested in AY 2004-2005 to add an additional Distance Learning room, but the funding was not approved since the demand for the room could not be shown. The need to test the new control system in a separate space required the temporary use of an additional room. We have been able to fund the creation of this additional room within the budget for this project.

**Target Completion Date:** 6/30/2005

**Actual Completion Date:** This project will carry over into the next fiscal year with a new target completion date of 9/5/2005.

## Upgrade Data Network Infrastructure Components

Each year ITS identifies parts of the network infrastructure that will reach the end of their 5 year projected useful life and develops plans for their replacement. The total investment in the equipment that makes up the Sinclair network is approximately \$2.4 million. All of these components were purchased over the course of many years so each year's replacements will vary in the amount of funding necessary. Also, because of changing technologies, equipment is upgraded to the latest versions in conjunction with the life cycle changes.

During AY 2004-2005, ITS planned on replacing approximately \$200,000 worth of equipment which needed to be replaced under the College's Information Technology Renewal & Replacement model. In the previous academic year, the department had identified another \$200,000 worth of equipment that should be replaced. While identifying the equipment to replace and developing plans for the new technology, we determined that it would be better to combine the AY 2003-2004 and AY 2004-2005 funds for a single purchase.

As well as enabling a more comprehensive technology transition, the larger purchase enabled us to obtain a higher discount and the donation of a network management application that is worth over \$100,000. Another significant benefit is the elimination of higher cost older components, which allowed us to reduce our annual maintenance costs by almost \$100,000.

**Cost savings/Cost Avoidance Identified with the Project:** Enterasys donated a software application worth over \$100,000 as part of the Sinclair Changing Lives campaign. This software would have been purchased for improving network security had we not received it for free. Also, our annual maintenance to cover all Enterasys network equipment was reduced by approximately \$100,000 per year through a combination of replacing older components and eliminating 10 switches.

**Target Completion Date:** 6/30/2005

**Actual Completion Date:** 10/28/2004

## Upgrade Storage Area Network Infrastructure Components

The Storage Area Network (SAN) is a dedicated network for data storage devices (i.e., disk drives, tape drives, etc.). It is separate from the Local Area Network (LAN) that connects the workstations and servers. This separation allows high-speed access to data and applications by the servers without impacting LAN traffic.

In the AY 2003-2004 budget, ITS identified the need to replace the 2 disk arrays that provided 4 terabytes of data storage shared by approximately 35 servers

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connected to the SAN. As we reviewed technologies from various vendors, we determined that we could also replace the tape libraries and the switches that provide connectivity to the SAN within the allocated budget. In addition to the hardware components that made up the SAN, we determined that we could replace the backup software that was used in conjunction with the tape libraries, a critical need that we had planned on budgeting in the next year's operating budget.

By combining the SAN switches, disk array, tape library (shown in Figures 3.6, 3.7, and 3.8), and backup software in a single RFP, a much higher incentive for competitive pricing was provided to the vendors. The resulting configuration provides greater reliability, decreased maintenance costs, and double the amount of disk storage on the SAN to 8 terabytes.

**Cost savings/Cost Avoidance Identified with the Project:** We purchased 3 years of up-front maintenance on all hardware and software. This will save the college approximately \$100,000 per year for those 3 years. Also, we saved an estimated \$500,000 by combining all SAN equipment in a single purchase and created more incentive for vendors to offer more competitive pricing.

**Target Completion Date:** 9/30/2004

**Actual Completion Date:** 10/31/2004



**Figure 3.6.** The HP EVA5000 storage array holds 122 disk drives with 8 terabytes of disk storage.



**Figure 3.7.** The HP MSL6030 and MSL6060 combine to provide 6 400gb tape drives and 90 tape slots.



**Figure 3.8.** 4 Brocade fiber channel switches provide the connectivity for the servers that access the SAN and the tape libraries shown above.

## Upgrade the Colleague System's Hardware Platform

During this fiscal year the server on which the Colleague administrative application executes reached the end of its five-year projected life. As we have seen with other infrastructure components that have come up for replacement, the replacement of this server comes at an appropriate time. The additional load that has been put on this server since its purchase includes much higher transaction volumes from web registration capabilities as well as other functions provided through WebAdvisor.

The system that was purchased is a 4 processor HP rp4440-8 which provides approximately 4 times the processing power of the HP N4000 that it replaced. The newest technology provides multiple CPU "cores" on a single piece of silicon so the 4 processor system is the equivalent of 8 processors using older technology. In addition to increases in the speed of every day transactions, great improvements were made in the processing capabilities at peak transaction times, especially during financial aid charges in the Bookstore.

**Quantitative/Qualitative Return on Investment:** The hardware that was replaced was beginning to impact productivity and customer satisfaction, especially in the Bookstore.

**Target Completion Date:** 12/31/2004

**Actual Completion Date:** 10/25/2004

## Implement Improved Enterprise Backup System

One of the most important responsibilities of the ITS department is to ensure that the college's data is protected in the event of a system failure. This means that every one of the more than 90 file servers that contain various kinds of data must be backed up to tape. In the past, we have experienced extreme difficulty maintaining a stable backup environment, and we determined that a more reliable solution was required.

This project provided for the selection and implementation of a system which includes a backup server and software, backup agents for all servers, including special agents for backing up databases and mailboxes, and robotic tape libraries. In addition to providing a more stable backup platform, the new system reduced the timeframe that it takes to complete a full backup of all servers from over 36 hours to less than 20 hours.

We are in the process of investigating additional capabilities of the new backup software to make other processes more efficient as well. These include making copies of tapes to take to our off-site tape location, which would allow us to maintain a copy here for quicker file restores, and making changes to our backup schedules which

could further reduce the total amount of time that the backups take. This project was estimated to cost over \$200,000 but was combined with the SAN upgrade project to increase the competition and lower our cost.

**Cost savings/Cost Avoidance Identified with the Project:** We had estimated that replacing our previous backup software and tape libraries would cost approximately \$200,000. However, by consolidating this need with the SAN upgrade, substantial savings were realized, as noted previously. Combining these purchases resulted in a delay in meeting the project’s completion, but it was well worth the effort for the cost savings.

**Target Completion Date:** 10/15/2004

**Actual Completion Date:** 3/9/2005

## Network Desktop Security

Over the last several years we have experienced a significant increase in the amount and sophistication of viral and hacker activity designed to exploit software vulnerabilities. This increased activity has caused ITS to re-evaluate the mechanisms used to protect all technology resources. It is no longer adequate to rely on virus scanning software alone to protect the network from these more sophisticated threats.

The scope of this project was to evaluate technologies and to create a plan to provide additional barriers of defense and provide faster, more efficient and more effective responses to these threats. This year we implemented the following products to assist in maintaining the security of the network:

- ePolicy Orchestrator (ePO) – A software solution that enables ITS to centrally manage and enforce anti-virus policies transparent to the users. This resulted in increased uptime and security by not requiring users to reboot their PC’s to obtain anti-virus updates.
- McAfee VirusScan 8.0i – This new version of our virus scanning product provides much greater capabilities than simply detecting viruses. It has some low-level spyware/adware detection as well as firewall and buffer overflow protection. We were able to push the installation of this product out over the network seamlessly using the ePO product mentioned above.
- Entercept – A software solution installed on each PC which proactively monitors the PC and provides alerts to potential malicious activity.

Screen shots of these components are shown in Figures 3.9 and 3.10.

# Major Accomplishments

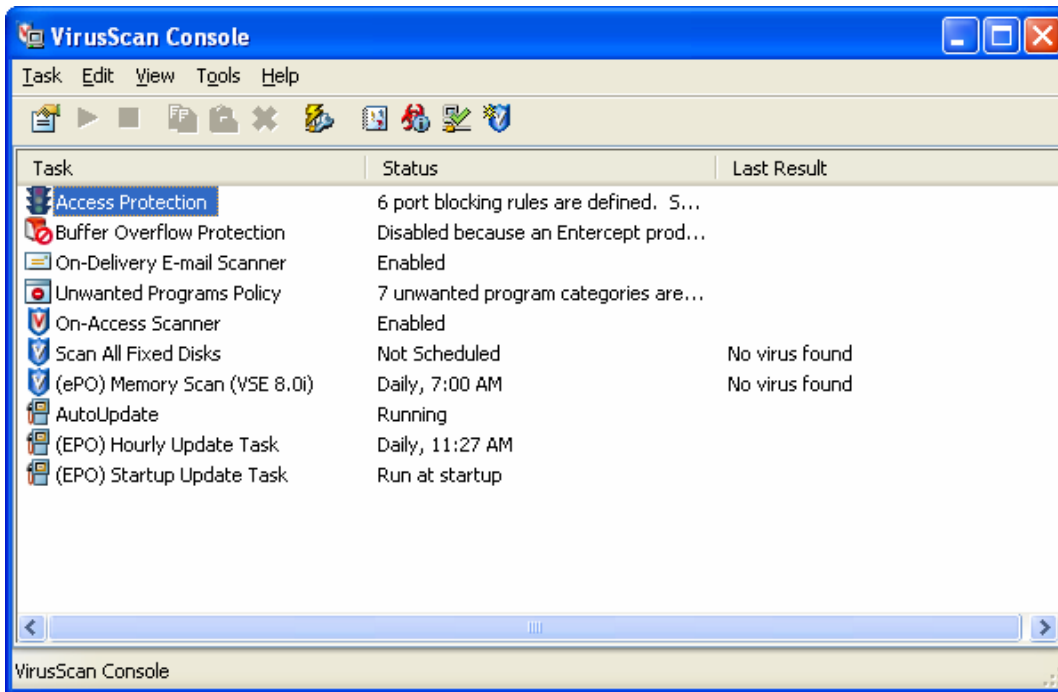


Figure 3.9. The McAfee VirusScan 8.0i Console shows the additional tasks that have been added to the new version.

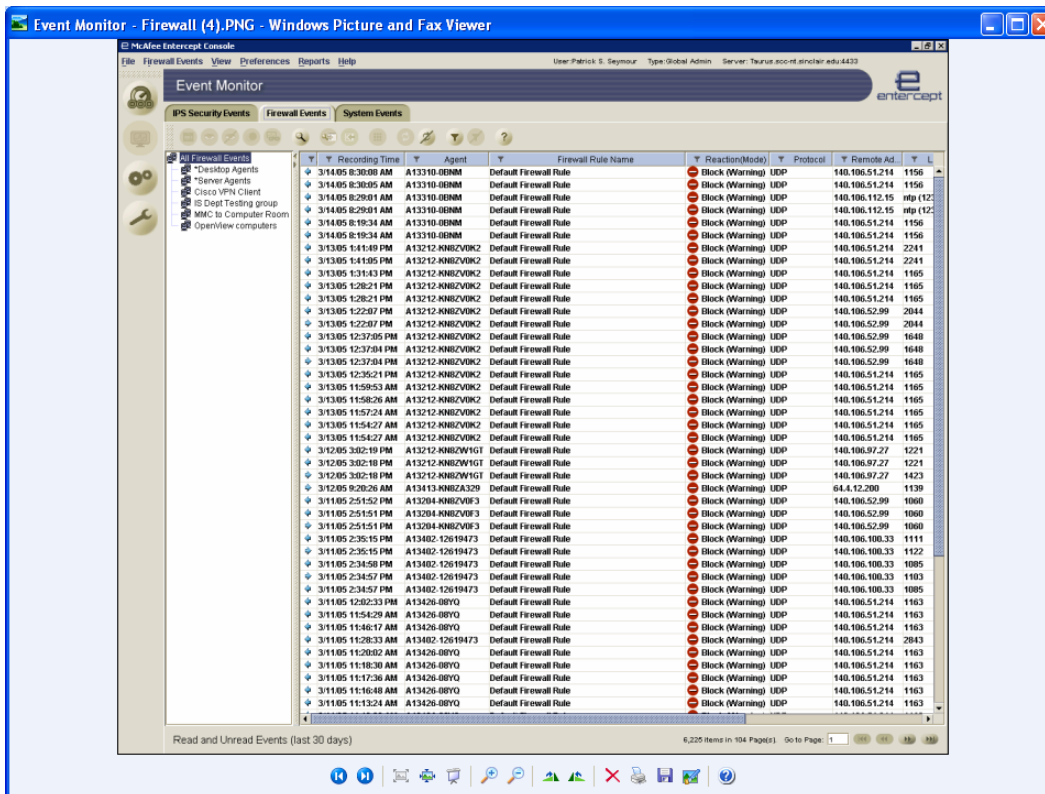


Figure 3.10. The Event Monitor within Entercept show the number of firewall events that are captured on PCs throughout the campus.

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**Quantitative/Qualitative Return on Investment:** This project established the foundation for follow-up projects, which will provide the optimum security environment for all computer equipment that attaches to the Sinclair network.

In addition to the above mentioned technologies, we undertook the development of a comprehensive network security plan this year. This plan, which was completed in October 2004, provides a roadmap for the implementation of network authentication for all computers that connect to the Sinclair network; controlled access for unknown devices; and the isolation and remediation of problems with un-patched or virus-infected PCs. The plan defines a clear path towards the vision of a network where access to network resources is based on the role of the user, the configuration of the computing device they are using, and the verifiability that the device is problem free.

The plan's implementation began in December 2004 with the definition of the various roles that users and devices can be authenticated into. The second phase, Dynamic Intrusion Response, was started in February 2005 and dealt with the constant monitoring of network traffic for abnormalities and the isolation of the offending computer. Additional phases will be completed during the next 6 to 9 months. When the plan has been fully implemented, there will be no ability for a computer to communicate on the Sinclair network without the user of the device passing an authentication process. Also, the plan will provide for different levels of access based on whether the device is a Sinclair-imaged computer or a device with an unknown configuration.

**Target Completion Date:** 6/30/2005

**Actual Completion Date:** 11/10/2004

## Customer Expectation Interviews

At the beginning of the 2004-2005 fiscal year, ITS staff decided that we needed to gain a better understanding of what our customer's expectations were and how those customers felt we were performing in meeting those expectations. To help gauge these feelings, we decided to take on a department-wide initiative that became Continuous Improvement Targets (CITs) for every individual within the department. The CIT was "Gain a better understanding of customer expectations by interviewing customers and documenting findings".

Every full-time employee within ITS agreed to interview 3 people, 2 of which were to be external customer's of the department. The 3rd customer had to be within ITS since everyone within ITS has other department staff that depend on services they provide. From June through October of 2004, ITS staff conducted 122 customer interviews and collected 1445 statements of expectation. These expectations were entered into a database and used in a workshop to understand how we could improve the quality of services that we provide.

The workshop was held on the morning of January 21, 2005 and was attended by all full-time ITS staff. We broke the department's staff into 4 groups. Each group focused on the expectations that were related to 3 service areas that the department provides, and they were charged with identifying 5 recommendations for improvements based on the expectations for that group's 3 service areas. The department then met as a whole to discuss the combined results of the 20 recommendations and to decide on items to focus on for improvement.

The ITS department will pursue 2 process improvement projects as a direct result of data collected during customer expectation interviews. The items are related to the improvement of our communication processes and improvement in Help Desk processes. While there were many positive comments on both of these items, we believe that there is always room for improvement; therefore, we will create teams made up of staff from all areas of ITS and from several different user areas to help identify where those improvements can be made.

**Target Completion Date:** 1/31/2005

**Actual Completion Date:** 1/31/2005

## Systems Development & Maintenance

Following are the Major Accomplishments for AY 2004-2005 for the Systems Development & Maintenance Department:

- Curriculum Development Support System
- Bookstore Point of Sale Replacement
- Data Warehouse Implementation
- Higher Education Information (HEI) Reporting Systems Redesign
- Improved Reporting Tools
- Web Advisor Process Implementation
- Sponsor Billing Review and Evaluation
- Faculty Contract/Payroll Sheet Process Revision
- Course Applicability System (CAS) Implementation
- Web-based College Catalog
- Single Point of Authentication/Single Sign On Initiative
- Administrative System Hardware & Software Upgrades
- Non-credit Classes in Colleague
- Implement Revised Program/Major Codes
- Student Success Plan Version 2.0
- Kiosk Upgrade
- Intranet Redesign
- Payroll Timesheet Elimination

Descriptions of these projects are presented on the following pages.

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## Curriculum Management Tool (CMT)

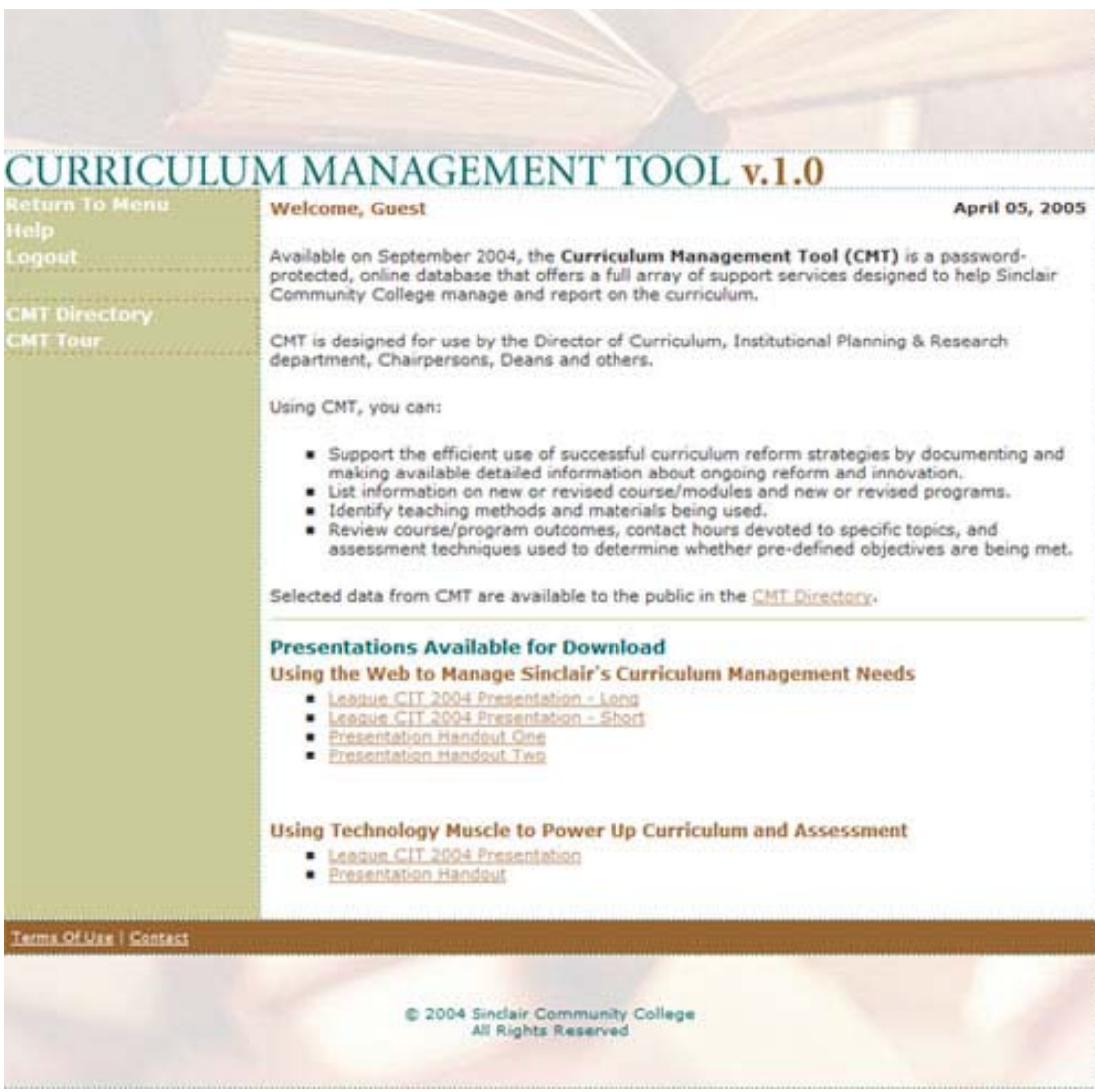
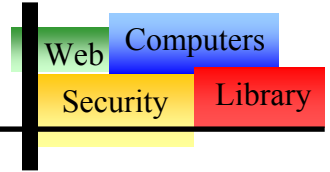


Figure 3.11. CMT Initial Screen.

Web systems worked with the Academic Division to create a web-based system for initiating, tracking, and approving changes to courses and programs. This system replaces the previously used Keyfile system which did not provide all of the functionality needed and stored curricular information in a format that was not easily retrieved by other systems. The web-based system, shown in Figure 3.11, includes review and approval processes and stores information in a Microsoft SQL Server database.

**Qualitative/Quantitative Return on Investment:** CMT allows Sinclair to make a quantum leap in achieving its AQIP goal of infusing assessment throughout the

# Major Accomplishments



curriculum. This system allows Sinclair to answer the Learning College questions of: 1) how are we improving learning? and 2) how do we know?

**Cost savings/Cost Avoidance Identified with the Project:** The third-party Keyfile system that carried an annual license cost of \$2,600 was replaced by an internally developed system that has no annual license fee.

**Target Completion Date:** Fall 2004

**Actual Completion Date or Current Status:** Version 1.0 was released fall 2004.

## Bookstore Point of Sale Replacement

The previous POS system was antiquated and unsupported by the original vendor. The system failed at critical times resulting in severe degradation in service to students. As a result, the bookstore began the process of evaluating, selecting, and implementing a new bookstore POS system.

**Qualitative/Quantitative Return on Investment:** The new POS system operates on up-to-date hardware and software and provides reliability that supports desired service levels.

**Cost savings/Cost Avoidance Identified with the Project:** The new POS system will not go live until after the majority of AY 2004-2005 is complete. Therefore, little concrete cost avoidance will be realized this year. It can be expected that the new system will significantly reduce future downtime, which ran into weeks under the old system.

**Target Completion Date:** May 2005

**Actual Completion Date or Current Status:** Work is currently underway to develop the software interface between the new POS system and the Colleague system.

## Data Warehouse Implementation

The development of an institutional data warehouse is the first required step in a series of projects designed to improve reporting capabilities at the institution and to empower users to extract and analyze information they need to make informed decisions. An institutional data warehouse, combined with related analytic tools and easy access, gives users the ability to use data to improve decision making.

**Qualitative/Quantitative Return on Investment:** The ability to mine data for hidden trends and unexpected outcomes is becoming a fundamental managerial expectation.

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The data warehouse provides managers with tools needed to meet this expectation.

**Cost savings/Cost Avoidance Identified with the Project:** If the data warehouse/ business intelligence tools improve managerial decision making by one percent, this could translates into a \$1,000,000 annual savings.

**Target Completion Date:** August 2004

**Actual Completion Date or Current Status:** December 2004

## Higher Education Information (HEI) Reporting System Redesign

The current HEI reporting system is written in COBOL and is extremely cumbersome to use. The data warehouse can be used as an alternative means of storing and retrieving the needed HEI data in a more efficient and user friendly manner. In addition, a review of current data integrity processes is part of the HEI project. This review will allow for consolidation of some existing edit processes.

**Qualitative/Quantitative Return on Investment:** Every missed or rejected FTE reported to OBR results in lost subsidy. Each non-reported or incorrectly reported FTE reduces revenue by approximately \$3,000. With this reporting system, missing or rejected FTE should be held to a minimum.

**Cost savings/Cost Avoidance Identified with the Project:** If improved HEI processes resulted in reporting ten additional FTE per year, this would result in an increase in revenue of \$30,000.

**Target Completion Date:** August 2004

**Actual Completion Date or Current Status:** The data universe has been completed and enrollment reporting is currently underway. It is expected that the enrollment stage of the project will be completed by June 2005.

## Improved Reporting Tools

This project has as its goal to place information in decision makers' hands so that they can make better informed decisions (see example in Figure 3.12). The implementation strategy is to deploy Business Objects software to allow for easy access to the data warehouse and to instruct end users in the use of the Business Objects application.

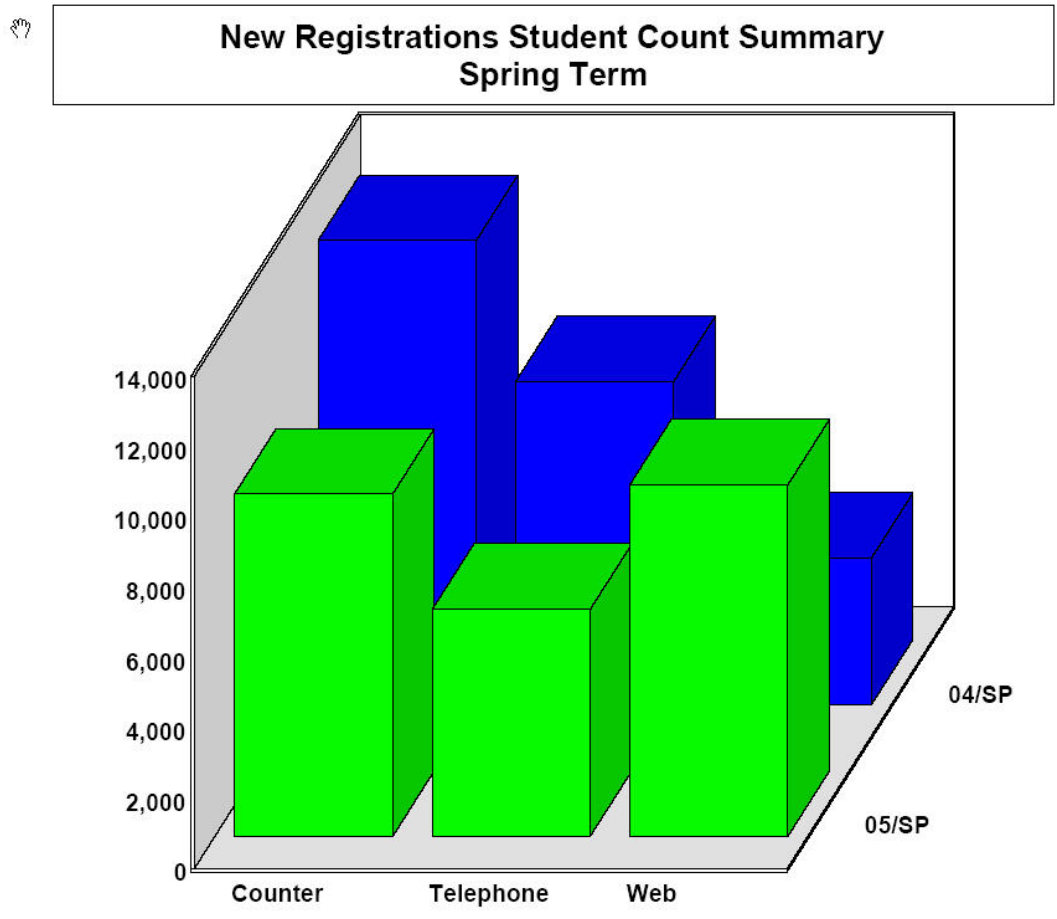


Figure 3.12. Example of data created from Business Objects.

**Qualitative/Quantitative Return on Investment:** The ability to mine data for hidden trends and unexpected outcomes is becoming a fundamental managerial expectation. Skill in using Business Objects provides managers with tools needed to meet this expectation.

**Cost savings/Cost Avoidance Identified with the Project:** As noted previously, if the data warehouse/business intelligence tools improve managerial decision making by one percent, this translates into a \$1,000,000 annual savings.

**Target Completion Date:** December 2004

**Actual Completion Date or Current Status:** Twenty-two licenses have been deployed to end users, and two Business Intelligence trainers are working one-on-one with these users to hone data warehouse skills. The initial phase of this project is complete; however, this knowledge dissemination will be on-going.

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## Web Advisor Process Implementation

Web Advisor (shown in Figure 3.13) is the web interface to the Colleague system. It can be used by students and faculty for a variety of functions; however, certain web advisor features had not yet been implemented at Sinclair. Examples of these features include online access to financial aid information, input of grades by faculty, employee leave summaries, position summaries, and stipend summaries. This project involved taking the actions necessary to implement these features.

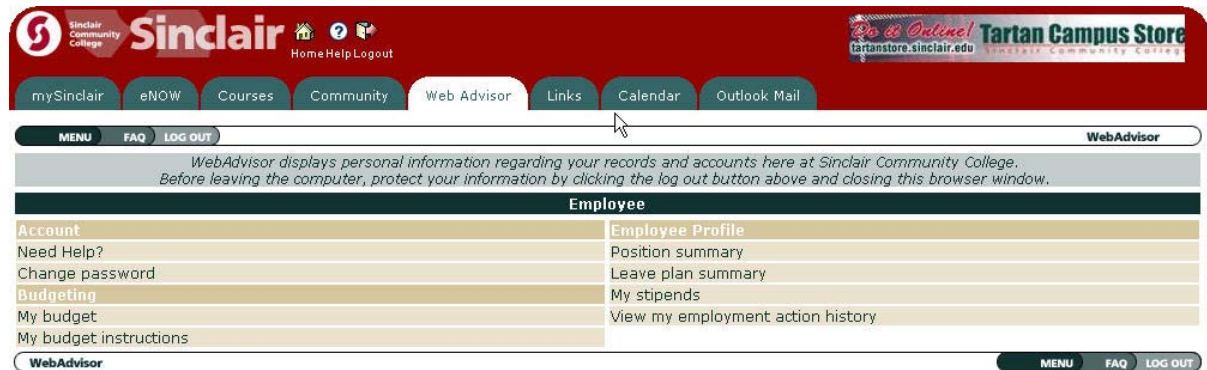


Figure 3.13. Web Advisor.

**Qualitative/Quantitative Return on Investment:** Each implementation of Web Advisor features results in the end user having direct access to his or her data. This direct access eliminates the need for intermediaries and the costs associated with staffing for those intermediaries.

**Cost savings/Cost Avoidance Identified with the Project:** During this past year, an online duplicating requisition process was created and implemented. The Copy Center estimated that this ability for users to directly enter duplicating requests resulted in the elimination of 500 hours of processing work. Similar savings could be expected from implementing other online processes.

**Target Completion Date:** Employee Web Advisor access went live in early AY 2004-2005. Online entry of grades by faculty went through successful pilot testing in March 2005.

**Actual Completion Date or Current Status:** Full scale roll out of online grade entry will take place in May 2005.

## Sponsor Billing Review and Evaluation

One of the major customizations made to the Colleague system is the custom code implemented to allow sponsorships to be prioritized along with other forms of financial aid. The purpose of this project is to review the functionality provided in that customization and to determine if it can be eliminated through policy changes or through modifications in how the system is used.

**Qualitative/Quantitative Return on Investment:** Implementation of a revised process for prioritizing sponsorships has the potential to reduce the support requirements caused by this major piece of custom code.

**Cost savings/Cost Avoidance Identified with the Project:** Past estimates of sponsor billing support put annual costs in the range of \$100,000.

**Target Completion Date:** June 2005

**Actual Completion Date or Current Status:** The review of alternative processes is currently underway. The review and evaluation is expected to be completed by June 2005.

## Faculty Contract/Payroll Sheet Process Revision

The current process for assigning faculty to course sections and submitting payroll information is extremely cumbersome and labor intensive. The process also does not take advantage of the full functionality provided by the Colleague system.

**Qualitative/Quantitative Return on Investment:** Feedback from the Sinclair Leadership Council indicates that this project could potentially have great impact on many areas of the college such as payroll processing and the calculation of when teaching hour limits have been reached.

**Cost savings/Cost Avoidance Identified with the Project:** Instruction's share of Sinclair's annual budget is approximately \$60,000,000. Improved faculty contract processes have the potential to realize a substantial savings in the allocation of this budget.

**Target Completion Date:** Progress by SD&M is contingent upon the outcomes from the committee that is reviewing the payroll processes. No specific completion date for the committee's work has been identified.

**Actual Completion Date or Current Status:** Current status of SD&M's part of the project is inactive.

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**Course Applicability System (CAS) Implementation**

The Board of Regents is requiring that all Ohio public institutions be “fully implemented” in CAS by April 2005. The purpose of this project is to implement an interface (shown in Figure 3.14) so that transfer and degree audit information can be passed between Sinclair’s Colleague system and CAS.

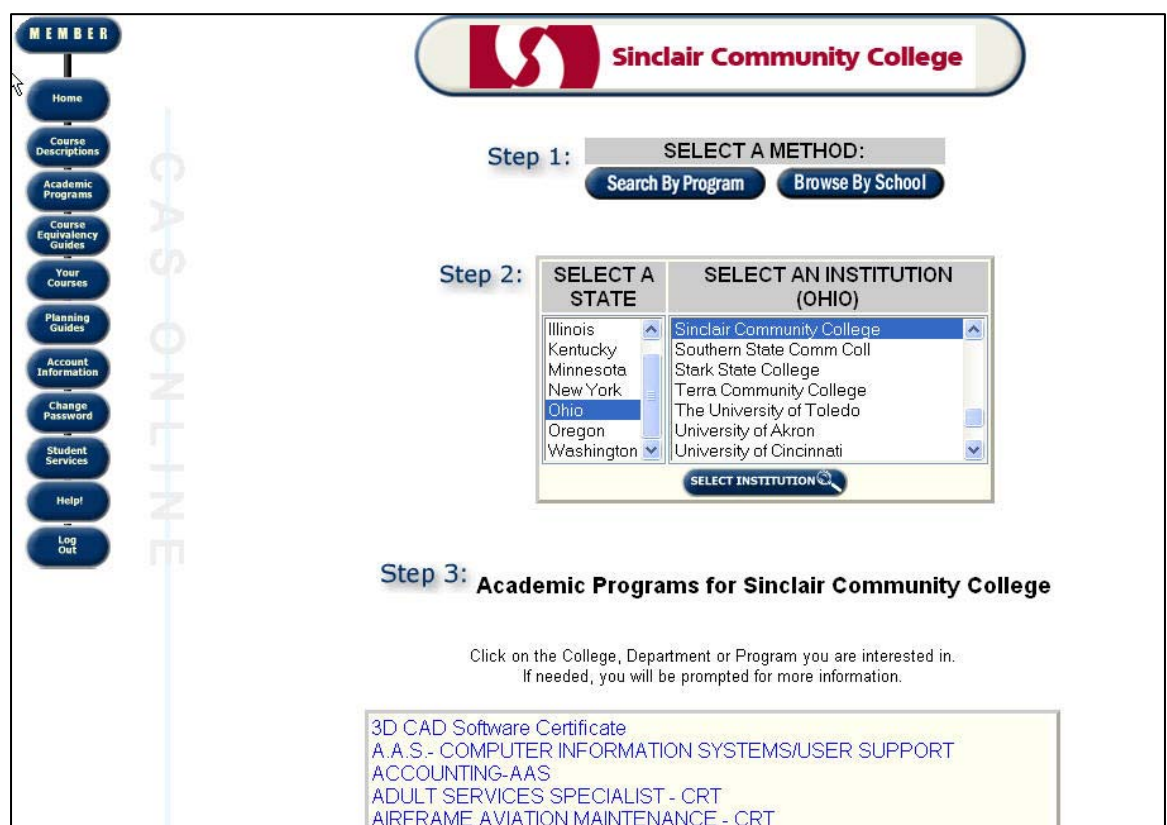


Figure 3.14. Course Applicability System.

**Qualitative/Quantitative Return on Investment:** CAS is a legislatively mandated project. The intent of the legislature is to simplify a student’s transfer experience between Ohio’s publicly supported colleges and universities.

**Cost savings/Cost Avoidance Identified with the Project:** There is no hard dollar savings to Sinclair as a result of implementing CAS; however, when fully implemented the system will reduce a student’s likelihood of having to retake courses when transferring to or from another Ohio college or university.

**Target Completion Date:** April 2005

**Actual Completion Date or Current Status:** The statutorily mandated completion date of April 2005 has been met.

## Web-based College Catalog

The intent of this project is to leverage the course and program information that is contained in the Curriculum Management Tool (CMT) to improve the catalog creation process. With the adoption of CMT as the only authorized method for curriculum approval and with the storage of CMT information in an accessible SQL database, the capability exists to use CMT as the authoritative source for College Catalog information. This project involved the development of tools to extract the information from CMT into a format suitable for catalog layout.

**Qualitative/Quantitative Return on Investment:** Automating the creation of the catalog should reduce editing and layout time. With departments directly responsible for the content in CMT, greater accuracy should be achieved.

**Cost savings/Cost Avoidance Identified with the Project:** The application should significantly reduce the amount of manual preparation time required to publish the College Catalog.

**Target Completion Date:** April 2005

**Actual Completion Date or Current Status:** The project is on schedule to meet the catalog's AY 2005-2006 production timeline.

## Single Point of Authentication/Single Sign On Initiative

The goal of this project is to have a single username and password for students, faculty, and staff that would provide access to systems across campus. Single sign on would tie systems together so that by logging on to a single system (such as the my.Sinclair portal) that authentication is passed on from one system to the next so that users are not required to login multiple times while working with the systems of the college.

**Qualitative/Quantitative Return on Investment:** The need for multiple usernames and passwords has been a significant deterrent to student's use of web-based services. It is the number one complaint students make about Sinclair's computer systems.

**Cost savings/Cost Avoidance Identified with the Project:** Over the past academic year the use of the web as the selected registration method has grown from less than 5% of registrations to greater than 30%. Every registration that takes place on the web decreases the need for face-to-face staff support.

**Target Completion Date:** April 2005

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**Actual Completion Date or Current Status:** The project has focused on creating a single-sign-on environment for web transactions. This component of the implementation should go live in May 2005. The client-based implementation for faculty and staff will require the installation of a piece of software on each client machine. No implementation date for this component has yet been set.

## Administrative System Hardware & Software Upgrades

This project involves the replacement of the hardware supporting the Colleague software and the installation of the latest operating systems supporting this software.

**Qualitative/Quantitative Return on Investment:** User satisfaction with computing systems is primarily influenced by response time. With the installation of new equipment and operating system software, response time has gone from unacceptable to being well within the range of user acceptance. Batch jobs that had previously taken several hours to complete under the old hardware configuration are now completing in approximately one-third the processing time. User responses indicate similar levels of improvement in response time for interactive processes.

**Cost savings/Cost Avoidance Identified with the Project:** Sinclair's Budget Office projects that every FTE generates between \$6500 and \$7000 in revenue. If slow response time causes some individuals to give up on the registration process, then revenues could be reduced.

**Target Completion Date:** October 2004

**Actual Completion Date or Current Status:** October 2004

## Non-credit Classes in Colleague

Non-credit classes are currently not tracked within the Colleague system. This project involves putting into place processes that will allow for registration for non-credit classes through Colleague.

**Qualitative/Quantitative Return on Investment:** Shifting non-credit classes to Colleague would allow for common processes for students between credit and non-credit classes. It would allow non-credit classes to be included on student transcripts and would provide Web-based registration and payment for non-credit offerings. It would also make non-credit enrollment information available for analysis via the data warehouse and business intelligence tools.

**Cost savings/Cost Avoidance Identified with the Project:** No direct cost savings are anticipated as a result of this project. Non-credit classes are currently registered through a standalone system. This system would be replaced by the Colleague registration processes. What would be gained are increased levels of access and student service as a result of converting to the Colleague system.

**Target Completion Date:** No specific completion date has been identified for this project.

**Actual Completion Date or Current Status:** The project will be carried over as an item on the AY 2005-2006 Master Plan.

## Implement Revised Program/Major Codes

The College-Wide Retention committee identified issues with current programs and major codes within Colleague that hinder the ability to track students by major or academic area. This project involves implementing in Colleague the recommendations of a committee that has been established to study this issue.

**Qualitative/Quantitative Return on Investment:** Major codes in Colleague drive many business processes such as targeted marketing campaigns and the production of program specific distribution lists. Accuracy and currency of these codes directly impact the success of these processes.

**Cost savings/Cost Avoidance Identified with the Project:** There are over 70,000 records in the Colleague database where the student has not had registration transactions within the past three years and yet they are still listed as active within their academic program. Elimination of one mailing to these individuals would result in a \$21,000 savings.

**Target Completion Date:** May 2005

**Actual Completion Date or Current Status:** Committee recommendations have been developed and implementation is currently being tested.

## Student Success Plan Version 2.0

The second version of the Student Success Plan (shown in Figure 3.15) is an integral part of the requirements for Sinclair's Title III grant. Added functionality includes direct links with the Colleague administrative system and functionality for an early alert process.

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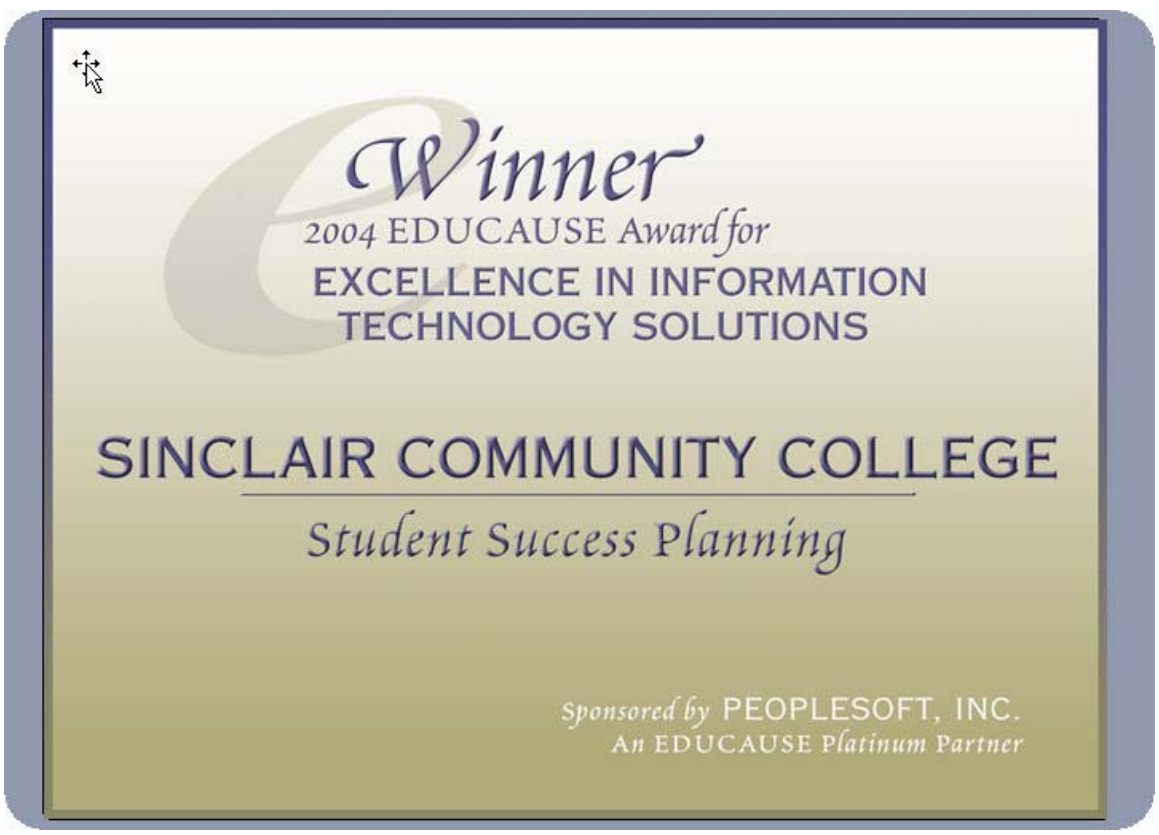


Figure 3.15. Student Success Plan.

**Qualitative/Quantitative Return on Investment:** A comprehensive intake and assessment process has been shown to be a major contributor to student retention and graduation.

**Cost savings/Cost Avoidance Identified with the Project:** Sinclair’s Budget Office projects that every FTE generates between \$6500 and \$7000 in revenue. National statistics indicate that close to 50% of first-year enrollees in community colleges do not persist from fall quarter to fall quarter. Improvements in retention rates have a direct impact on FTE revenue.

**Target Completion Date:** January 2005

**Actual Completion Date or Current Status:** SSP version 2.0 was released in January 2005. Version 2.5 with the early alert component was released in February 2005.

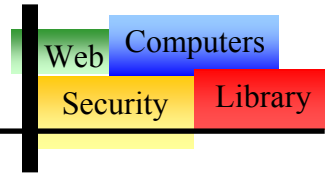
**Kiosk Upgrade**

The Kiosks across campus use an outdated software application to provide services to students. The purpose of this project is to update the Kiosk functionality to a browser-

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based system and to take advantage of many of the features currently available on Sinclair’s website.

**Qualitative/Quantitative Return on Investment:** Kiosks provide on-campus students with an accessible means of checking course availability and looking up their grades.

**Cost savings/Cost Avoidance Identified with the Project:** There is currently only one person on staff who possesses the knowledge necessary to maintain the kiosks. Converting to a standard software platform would remove the service interruption risks associated with having a single layer of support.

**Target Completion Date:** Unknown

**Actual Completion Date or Current Status:** Project is on hold due to capital budget constraints.

## Intranet Redesign

This project involves the redesign of a college intranet to promote easy access for staff to campus information and resources. Intranet redesign will enhance internal communication, will provide for selective access to items of interest, and will provide for improved communication of facts about the college. The redesigned front page of the college intranet is shown in Figure 3.16.

Other areas of the site could also benefit from the database and content management tools designed for the college Web site. This project would make similar tools available for development of content for the college intranet.

**Qualitative/Quantitative Return on Investment:** Information is the currency of most campus processes. The easier the access to information, the more efficient campus processes will run.

**Cost savings/Cost Avoidance Identified with the Project:** The majority of the cost savings identified with this project fall in the category of “opportunity cost.” This equates to the time lost waiting for PDF files to open, manually searching for items of interest, and missing important internal communications due to frustration with the slowness of the old system.

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Figure 3.16. Sinclair Intranet our.Sinclair.

**Target Completion Date:** June 2005

**Actual Completion Date or Current Status:** September 2004

## Payroll Timesheet Elimination

The goal of this project is to eliminate the submission of paper time sheets, providing electronic submission of time records, clock-in and clock-out processes for all part-time staff, electronic approval by supervisors, and automated uploads and downloads between the time tracking system and Colleague's payroll system.

**Qualitative/Quantitative Return on Investment:** Online entry of timesheet information increases accuracy and timeliness of submission.

**Cost savings/Cost Avoidance Identified with the Project:** During this past year, an online duplicating requisition process was created and implemented. The Copy Center estimated that this improved accessibility and control by users resulted in the elimination of 500 hours of processing work. Similar savings may be expected from implementing online payroll timesheet entry.

**Target Completion Date:** May 2005

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**Actual Completion Date or Current Status:** The application is currently being tested by the Payroll Department.

## Information Security Office

The Major Project for the Information Security office for AY 2004-2005 was the implementation of the Information Security Project Plan. This Project consists of four fundamental processes:

- **Establishing an information security organizational structure;**
- **Identification, classification, and risk analysis/mitigation of information assets;**
- **Developing and implementing system failure and security incident management processes; and**
- **Implementation of a college-wide security awareness, training, and education program**

Descriptions of these projects are presented on the following pages.

### Establishing an Information Security Organization Structure

Effective and efficient information security programs require clear direction and commitment from top management and administration. Information security is an integrated function that requires effective organization and collaboration throughout the College. To support this function, Sinclair’s Information Security Program has formally established and implemented a team-based approach that is security-focused but also balances the academic environment and resource constraints. Cross-functional teams have been established to address various interests of the College and who are specifically empowered with information security-related responsibility and decision making authority. Teams currently implemented are:

#### **Administrative Systems Security Team:**

The Administrative Systems Security Team is charged to develop and implement proactive measures to ensure administrative application security controls. These controls must provide sufficient granularity to allow appropriate access to the information stakeholders to successfully perform their duties, while meeting the College’s legal and ethical obligations to protect private, sensitive, and critical information. The charge is to strike the delicate balance between protecting the data and permitting access to those who need to use the data for authorized purposes. The scope and authority is to authorize and approve all access to the administrative system. The team’s primary responsibility is to ensure processes and standards are developed and implemented to provide and maintain optimal availability, integrity, and confidentiality of administrative system information.

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The team consists of permanent delegates, which include the Chief Information Security Officer (CISO) and three Administrative Information Security Officers. Administrative Information Security Officers are directly appointed by the respective data owner, generally the Vice President of the division. Each Vice President may elect to appoint one Administrative Information Security Officer delegate to the team. The Enterprise Applications Administrator is a technical advisor/facilitator for the team.

**Shared Information/Sinclair User’s Group**

The Shared Information/Sinclair User’s Group is charged to develop and implement proactive measures related to integrity and availability of shared information (particularly biographic and demographic data) within Sinclair’s administrative application (Colleague). The team establishes guidelines designed to:

- Determine effective practices for adding and maintaining shared information such as CORE data, VAL codes, and other records/codes used by multiple Colleague applications or SCC departments.
- Minimize duplication in collecting, processing, storing, and distributing information, and resolving existing duplicate information issues.
- Improve the quality, accuracy, completeness, and integrity of shared information.

A secondary responsibility is to promote campus-wide the importance of shared data and information as a valuable resource that requires effective and efficient management. The Shared Information/Sinclair User’s Group scope and authority is to develop and approve standards and practices for the entry and update of information shared throughout the Administrative application (Colleague). The team’s primary responsibility is to ensure processes and standards are developed and implemented to provide and maintain the integrity and availability of shared administrative system information - information used by multiple departments is entered and stored so it can be effectively used without significant modification.

The group is chaired by the CISO, and membership consists of Vice-President empowered delegates from Systems Development and Maintenance, Financial Aid, Student Services Technology Unit, Curriculum, SUG Leaders, Bursar, Registrar, Admissions, Purchasing, Accounting, Institutional Planning and Research, Academic Counseling, and Human Resources

**Computer Security Incident Response Team (CSIRT)**

A detailed description of this team is provided under “Developing and implementing system failure and security incident management process.”

**Qualitative/Quantitative Return on Investment:** This cross-functional team approach to information security places the responsibility, authority, and control of security processes in the hands of the primary stakeholders. It is impossible to achieve absolute security; the most effective and efficient method is to develop an institution-wide process to balance the resources expended on protective measures with the actual risk. The team approach ensures the people, processes, and technical elements are integrated to reduce risk to the College as a whole

**Cost savings/Cost Avoidance Identified with the Project:** The primary result of this project is cost avoidance due to due diligence and compliance with numerous statutes.

**Target Completion Date:** Initial: 4/21/2004; Charters/roles refined 12/31/2004

**Actual Completion Date or Current Status:** Initial implementation completed April 2004. Charters for teams initially approved 4/24/2004 by Delta Team. Teams were established and charters refined in December 2004. Charters will be re-submitted in 2005 using the newly approved organizational entity request process.

## Identification, Classification, Risk Analysis/Mitigation of Information Assets

The College must attempt to identify and assess reasonably foreseeable external and internal risks to the confidentiality, integrity, and availability of its information and information systems. The information security office will identify appropriate tools and establish procedures for identifying and assessing such risks to relevant information and systems. Major risk identification and assessment areas include identification and classification of information and information systems, assessment of employee training and management practices, information processing/systems risk analysis, and system failure and incident management identification processes.

- A working group (or groups) has been established to facilitate information asset identification, classification, risk analysis, and risk mitigation strategies. The original project specified use of the modified OCTAVE (developed by CERT/SEI at Carnegie Mellon) process as a framework based on projected completion dates received in April 2004. However, as of April 2005 the OCTAVE for higher education is still not ready for implementation and is not accepting pilot institutions. As an alternate solution, we are pursuing an alternate data classification process based on requirements for the Colleague R18 release.
- Information assets owned by the College will be identified, classified, assigned a primary “owner” for information security purposes, and assessed for risk against the criteria of confidentiality, integrity, and availability, then classified based on criticality, vulnerability, and impact of potential loss of the asset.

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- Protection strategies will be developed and implemented based on the results of the identification and risk analysis process.

**Qualitative/Quantitative Return on Investment:** Identification and classification of assets is the first step to implementing a risk-based security approach. Identifying the assets and determining the sensitivity of each permits a focused, directed approach to security. Resources are expended on protecting what needs to be protected as opposed to the blanket ‘protect everything’ approach or the hit-and-miss protect what we think might need to be protected.

**Cost savings/Cost Avoidance Identified with the Project:** Current ‘best practices’ involve information protection strategies based on an asset-driven ‘protect everything’ vulnerability-based approach. Identifying specific information, and the assets containing it, will reduce cost and provide a more effective and efficient risk-based method.

**Target Completion Date:** 12/10/2004

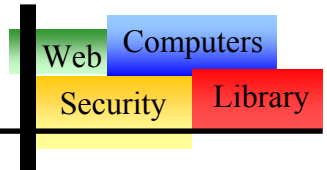
**Actual Completion Date or Current Status:** Project has had numerous ‘re-starts’ due to internal and external influences. Data classification estimated completion date is September 2005.

## Developing and Implementing System Failure and Security Incident Management Processes

Information Security incidents must be properly identified, recorded, reported, investigated, and assessed. The Information Security Program establishes a Computer Security Incident Response Team (CSIRT) responsible for identifying, assessing, and responding to actual and potential system failures and information security incidents. The assessment responsibilities include: defining, detecting, identifying, and categorizing actual and potential “incidents;” determining the impact of such incidents; evaluating, recommending, and implementing appropriate response; and developing, leading, and implementing recovery and reporting procedures.

- A Computer Security Incident Response Team (CSIRT) has been formally established and chartered as primarily responsible for developing and implementing the system failure and incident management process.
- The CSIRT has developed:
  - Definitions/Classification of incidents
  - Incident detection methods
  - Immediate (critical) response procedures
  - General (non-critical) response procedures
  - Investigation strategies

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- o Reporting/documentation strategies
- o Recovery strategies

**Qualitative/Quantitative Return on Investment:** A defined system failure and incident response approach can help reduce the impact of many security breaches. Reducing the impact of incidents is critical. The chart below provides an FBI/Computer Security Institute estimate of cost based on lost salary and productivity attributed to total system failure and associated clean-up due to a virus infection.

Number of Employees	Average Hourly Salary	Number of Employees to Combat Attack	Hours required to Stop/Clean Up	Total Lost Salaries	Total Lost Hours of Productivity
100	\$25	1	48	\$4,066	81
250	\$25	3	72	\$17,050	300
500	\$30	5	80	\$28,333	483
1000	\$30	10	96	\$220,000	1,293

**Cost savings/Cost Avoidance Identified with the Project:** The primary result of this project is cost avoidance due to due diligence and compliance with numerous statutes.

**Target Completion Date:** 7/31/2004

**Actual Completion Date or Current Status:** 7/31/2004

## Implementation of a College-wide Security Awareness, Training, and Education (SATE) Program

The Sinclair Security Awareness, Training, and Education program includes:

- An Information Security Web Site;
- A campus-wide SATE needs approach;
- Audience segmentation based on identified needs; and
- Communication of timely awareness topics based on criticality/currency.

**Qualitative/Quantitative Return on Investment:** Nearly everyone associated with the College has some degree of access to information and information systems, and consequently has the potential (inadvertently or intentionally) to cause harm. While technology can help mitigate risk to the College’s information assets, the weakest link in the information protection chain is people. Security awareness is the most effective and efficient method for protecting information and information systems. When stakeholders view information security as a critical requirement for success (rather

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than impediments, dumb rules or somebody else's responsibility), they are more likely to recognize threats and vulnerabilities and take corrective action. This project's ultimate goal is to increase the end-user's awareness and understanding of the importance of information security as it impacts or potentially impacts their daily operations. One method employed is distribution of security information brochures (as shown in Figure 3.17).



Figure 3.17. Sample Security Awareness Brochures.

**Cost savings/Cost Avoidance Identified with the Project:** Awareness of security-related issues reduces the likelihood users will respond to or trigger widespread distribution of malware. As users adopt effective security practices, risk of compromise and costs associated with compromise decrease.

**Target Completion Date:** 11/23/2004

**Actual Completion Date or Current Status:** Awareness program is in place, but is an on-going process based on current threats and risk. Communication and development strategies are in place for timely/critical threats. Awareness information

for new-employee orientation is in development; estimated completion date is June 2005. A mandatory awareness training program is recommended for administrative system access (Colleague) and will be recommended in conjunction with identification and classification projects.

## Learning Resources Center

The following are the Major Accomplishments for the Learning Resources Center for AY 2004-2005:

- Library Renovation Project
- Temporary Library Project
- Library Catalog Project

Descriptions of these projects are presented on the following pages

### Library Renovation Project

The primary project for the LRC in FY 2004-2005 was the physical renovation and programmatic redefinitions of the resources contained therein. The goal of the project is to, “return the LRC to the focal point of the academic campus as a technology enhanced learning resource as well as retaining the traditional resources.”

The first phase of this project occurred in prior years and identified five major objectives:

1. Improved visibility and physical access;
2. Correction of long-standing HVAC and environmental issues;
3. Integration of newer technologies;
4. Increased usage; and
5. Provision of more instructional space in other areas of the campus.

In addition, the plan identified flexible uses of space as an essential element of the project, and envisioned the coexistence of resources, technologies, and services in the redesigned facility.

The second phase of the project began in early 2004 when the LRC Design Committee was reformed to work with the Project Manager and Architect to refine the conceptual design. The LRC Design Committee developed the design to include the following components:

- Two new stairs, visible from all areas of the LRC, replacing the one hidden stair. (Objective 1)

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Student Learning and Support Services	Workforce Development Services	Organizational Development and Effectiveness	External Accountability and Community Service	Financial Management and Resource Development
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- Better access from the Building 7 elevator with a clear sense of entrance. (Objective 1)
- Increased mechanical room space for more HVAC and improved environmental quality. (Objective 2)
- Integration of the 43 LRC computers with 46 Teleport computers from Building 11, plus space for additional computers in the design. (Objectives 3, 4)
- A single or common service desk for the Library and IT staff so that all students, faculty, and staff have a single service point for all kinds of help and support. (Objectives 1, 3, 4)
- Small group study rooms intended for student use, equipped with computer and AV equipment. (Objectives 4, 5)
- Writing Center with expanded IT capabilities. (Objectives 4, 5)
- Developmental Learning Center with space to support reading, writing, and math instructors, plus a Testing Center. (Objectives 4, 5)
- Four classrooms with some flexible capabilities. (Objective 5)
  - One classroom/lab for Library instruction with PCs for every student. This room will also become an open lab when not scheduled for Library use.
  - One classroom for the Writing Center. This room can also be used by Developmental Learning when not scheduled by the Writing Center.
  - One classroom for Developmental Learning, which could be used by the Writing Center when not in use by DEV.
  - One short-term, schedulable classroom open to the college, to be scheduled through R25.
- Traditional library and media shelving, comparable to what existed in the old LRC configuration. (Stated project goal)
- Several small meeting rooms for college faculty and staff. (Objective 5)
- One Quiet Reading Room that can also serve as the home for a special collection (such as poetry, or Sinclair authors) and place to hold readings and library group activities such as the “Library Alive” programs. (Objectives 4, 5)
- Garden area with a coffee bar. (Objective 4)
- More variety in seating options than existed in the old LRC. (Objective 4)

Following completion of the Committee’s work, the library staff held a series of Open Forums to gather additional comments from across the campus. These comments were incorporated in a revision to the floor plan. Factors receiving special consideration included safety and security, access and pathways through the space, clear sight lines, and logical sequences of spaces and collections.

The final floor plan became the basis for the design development phase, which began in the Spring of 2005. Design Development will define the look and feel of the design, further develop the details of space use, and set the stage for construction drawings and bids.



Figure 3.18. Sample architect's rendering of renovated LRC.

**Qualitative/Quantitative Return on Investment:** The design for the renovation meets the objectives set in the first phase of the project, which will result in increased use of the facility, improved environmental quality, and freeing up of space on other parts of the campus for other uses. In addition, it should result in improved productivity by Library and IT staff who will be able to coordinate user support more than before. The close adjacency of Library and IT resources with the Writing Center and Developmental Learning Center should also produce new learning opportunities for these academic support units.

**Target Completion Date:** This phase of the project, which extends through design to the letting of bids should be completed by June 2005.

## Temporary Library Project

Because the renovation project will close the existing LRC, the college needed a Temporary Library to provide a full range of library services until the renovation is complete in 2006. Space was found for a Temporary Library in the Ballroom of Building 7. Library staff consulted with faculty and selected a small but highly relevant book collection to move to the ballroom while the remainder of the collection is placed in

### Sinclair Strategic Clusters

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storage for the duration of the renovation project. Thirty four public computers were also set up for library users. An office space was converted to a library classroom for information literacy instruction. Staff offices were also moved to the site, shown in Figure 3.19.



**Figure 3.19. Temporary Library.**

**Qualitative/Quantitative Return on Investment:** Students and faculty will receive a full range of library services and resources to support their academic programs. The Library will rely heavily on OhioLINK as a source of print materials for curricular support. In this regard, it will receive much more from the consortium than it will be able to return until the renovation is complete. The small space offers opportunities to use library staff more effectively to cover scheduled hours.

**Actual Completion Date or Current Status:** The move to the Temporary Library was completed during Spring Break, 2005.

## Library Catalog Project

The library redesigned its catalog interface to both modernize its look and improve its functionality as a database interface. The redesign placed a search box on the front

page of the catalog (shown in Figure 3.20), thereby reducing the need for students to make a decision and click through to another layer with index-based search boxes. It also set a new search default to keyword searching, which recognizes words and phrases and automatically includes some Boolean logic into search statement construction.

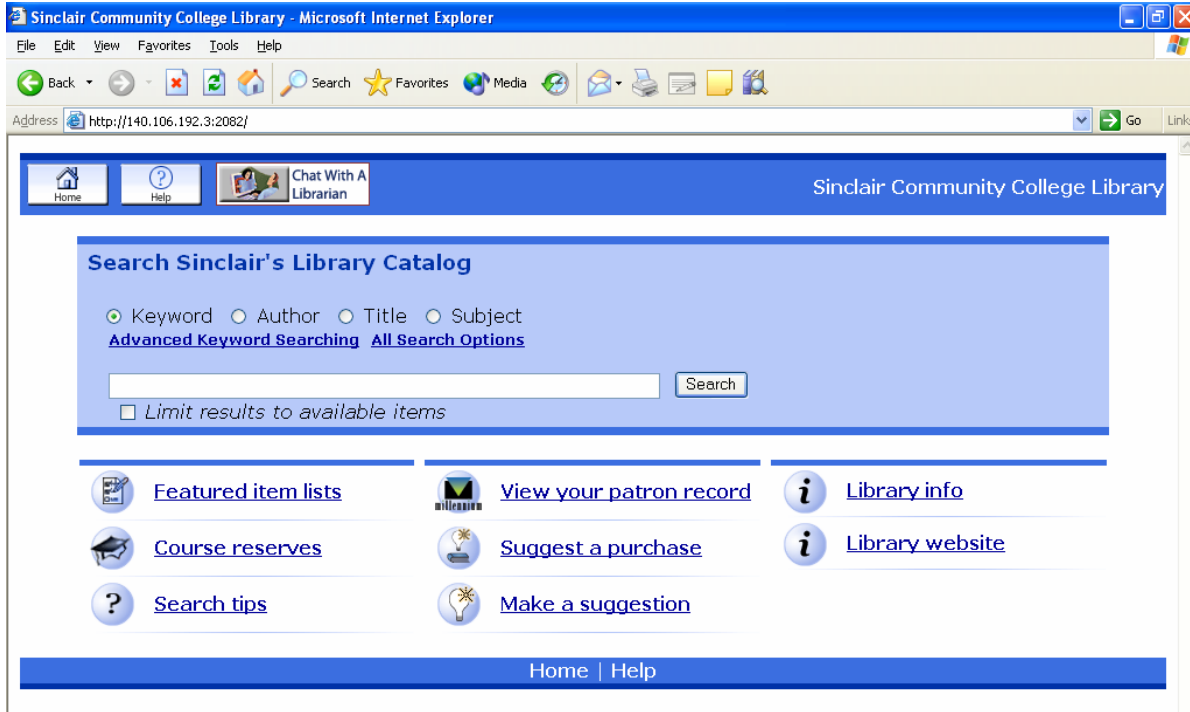


Figure 3.20. Library Catalog Search Screen.

**Qualitative / Quantitative Return on Investment:** Under the old search interface, about 20% to 40% of all searches produced zero search results. This might occur because the desired information was not in the database; however, it was more likely to occur because naïve students picked the wrong search index, entered a request in improper form, or simply used the wrong terminology. The keyword default reduces the number of zero-hit searches to less than 5%. This represents a significant improvement in the likelihood that students will find library materials of use with class assignments.

**Actual Completion Date or Current Status:** The revised interface was opened to the public as an “experimental” version in December 2004, shown to interested faculty, and made the default interface in April 2005.



**Section 4**

**Strategic  
Objectives**

**Major  
Projects  
for  
AY 2005-2006**



## Major Projects for AY2005-2006

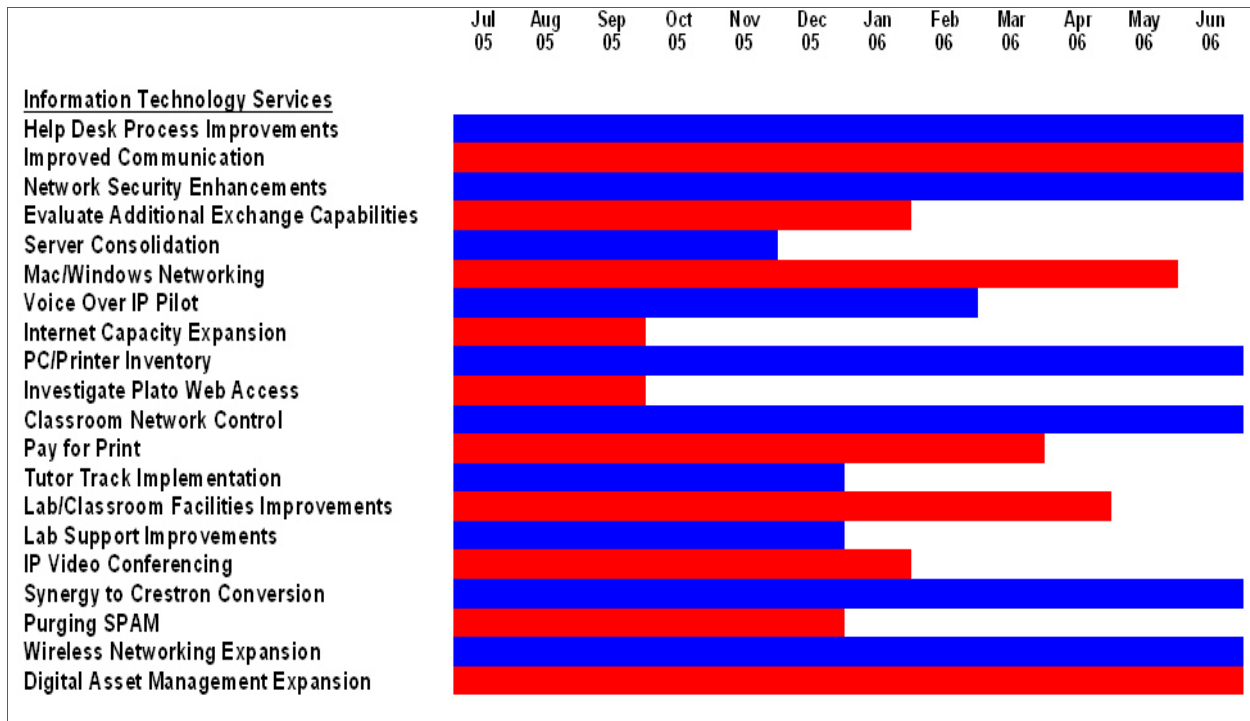
Many innovative projects are in process or planned to start during AY 2005-2006. This section describes many of these major projects. Each project title is color coded to reflect the Sinclair Strategic Cluster supported (as defined on page 2-3).

### Information Technology Services

Following are the Major Projects for AY 2005-2006 for the Information Technology Services Department:

- **Help Desk Process Improvements**
- **Improved Communication**
- **Network Security Enhancements**
- **Evaluate Additional Exchange Capabilities**
- **Server Consolidation**
- **Mac/Windows Networking**
- **Voice Over IP Pilot**
- **Internet Capacity Expansion**
- **PC/Printer Inventory**
- **Investigate Plato Web Access**
- **Classroom Network Control**
- **Pay for Print**
- **TutorTrac Implementation**
- **Lab/Classroom Facilities Improvement Study**
- **Lab Support Improvements**
- **IP Video Conferencing**
- **Synergy to Crestron Conversion**
- **Purging Spam**
- **Wireless Networking Expansion**
- **Digital Asset Management Expansion**

A tentative timeline for these projects is provided in Figure 4.1. These estimated schedules are subject to change due to changes in priorities or the need to initiate other projects.



**Figure 4.1. Projects Timeline.**

Descriptions of these projects are presented on the following pages.

## Help Desk Process Improvements

In July 2004, Information Technology Services set a departmental Continuous Improvement Target (CIT) to gain a better understanding of customer expectations by interviewing customers and documenting findings. Each employee in ITS interviewed three employees on campus, gathering their expectations around the following services provided by ITS:

- Administrative and academic network station software management
- PC, printer, scanner and other desktop hardware, software, and network installation and support
- Help Desk support
- Information Technology policy and procedure development including user documentation
- Lab management – CIL and Teleport
- Media Services including multimedia classroom podiums and other audiovisual equipment installation and support
- Network system access
- Network application availability
- Scantron services including surveys, test scanning and grading

### Sinclair Strategic Clusters

Student Learning and Support Services	Workforce Development Services	Organizational Development and Effectiveness	External Accountability and Community Service	Financial Management and Resource Development
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- Telephone services including installations and voicemail
- Use of licensed Microsoft software for business use, both on campus and at home
- Word Processing

A total of 122 customer interviews were performed resulting in 1445 individual statements of expectation about the services provided by ITS. Of these 1445 statements, 285 items had positive comments that their expectations were being met; 471 items had no expectation at all due to the customer's lack of experience with the service; 688 items had actual descriptions of expectations for the services. These individual expectations were grouped and collated so that ITS could use them to help improve services to better meet customer expectations.

One such grouping centered on Help Desk processes. This project will focus on researching and developing processes and procedures to address the following user expectations:

- Expects Help Desk to be knowledgeable in all areas of service provided by ITS.
- Better communication regarding status of tickets and solutions.
- Better communication of unavailable services.
- Improved communication to the Help Desk on the release of new services.

Note that these four groupings may each comprise several individual expectations which can be referenced in the raw data when necessary.

**Quantitative/Qualitative Return on Investment:** Addressing these areas will result in increased user satisfaction since their service expectations will have been fulfilled.

**Target Completion Date:** 7/31/2005

## Improved Communication

As mentioned in the previous project, Help Desk Process Improvements, a need for improved communication efforts by Information Technology Services was also identified by the Customer Expectation project. ITS would like to investigate and identify issues that may be hampering communication between the department and campus users, between ITS and other campus departments, between ITS and other IT departments, and between individual groups within ITS itself. The department will create a team of staff from all areas within ITS as well as from customer areas and investigate ways that we can improve the communication between all areas.

**Target Completion Date:** 6/30/2006

## Network Security Enhancements

In today's IT climate, users expect the network to be everywhere and available at all times, but they expect it to be secure as well; this is the balance that must be maintained through the implementation of this project. In addition, Sinclair Community College will be able to protect and enhance its reputation as an institution that leads the way in IT innovation.

ITS worked to develop a plan for a secure LAN with the goal of constructing a system in a fashion that allows each phase to build upon the previous, to maximize efficiency of implementation, and to allow incremental progress to be made without impacting areas of the system that are currently in production. The resulting plan consists of five phases:

- **Network Acceptable Use Policy** – utilizes a policy hierarchy as the basis for populating user roles with services and rules to match the desired network behavior. The policy defines the various user roles that can be assigned to a network switch-port and the allowable communications for each role. **This phase was completed in December 2004.**
- **Network Management System (NMS) Application**– the tools for getting the system installed. The NMS application assists in the administrative tasks necessary to quickly deploy tasks such as device management, switch configuration backup and restore, firmware upgrades, device inventory management and change control, and policy configuration and deployment. **This phase was completed in December 2004.**
- **Dynamic Intrusion Response** – implementation of response processes to network security events. Implementation includes use of a Quarantine role, Enterasys Dragon IDS and Netsight Automated Security Manager (ASM) to perform responses. **This phase was completed in February 2005.**
- **Authentication (Phase I)** – addresses the authentication steps for imaged PCs (a Sinclair PC with a standard set of software, including antivirus and security patches). After the imaged PC is recognized by the system, the user's role is defined upon login to a network switch-port, and the policy that enforces that user role is applied. **This phase was completed in March 2005.**
- **Authentication (Phase II)** – addresses the authentication for non-imaged PCs. Non-imaged PCs are scanned by the system. If the non-imaged PC has problems, the system places the PC in quarantine in a pre-defined remediation role. If the PC has no problems or its problems have been resolved by the system, it is assigned an Unknown PC role which limits user access to services such as web access. **This phase will be completed in May 2005.**

### Sinclair Strategic Clusters

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Once each of the phases mentioned previously is completed, the infrastructure is in place to support the campus-wide implementation of that phase's changes. Each of these changes require a significant amount of planning and coordination besides the actual change itself, which alone can be a huge undertaking. Over the course of the next academic year, we will develop a detailed plan and implement the above capabilities throughout the campus network.

**Target Completion Date:** 6/30/2006

## Evaluate Additional Exchange Capabilities

Sinclair's upgrade to Microsoft Exchange 2003 brought with it enhanced security, manageability and performance, as well as enhanced functionality and interface enhancements to Outlook Web Access (OWA). Besides enhancing what was available with Exchange 2000, Exchange 2003 also extends the capabilities of our messaging system to include improved mobile device support, workflow support, including digital signatures, and real time collaboration capabilities.

The purpose of this project is to research and evaluate these additional features of Microsoft Exchange 2003. The evaluation will include descriptions, cost/benefit analysis, and scenarios of how these new features may be used. Security and manageability issues will also be addressed in the evaluation. If a specific feature or set of features looks promising, a separate project will be created to pilot those features.

**Target Completion Date:** 1/30/2006

## Server Consolidation

Information Technology Services maintains a plan for the annual Renewal & Replacement (R&R) of Information Technology infrastructure components. This plan is used to project expenditures of these components over a 5 year period to provide the College's leadership with information to aid in budget planning. Each year during the annual planning and budgeting cycle, the R&R plan is updated with any new information that would change expected expenditures for the coming year as well as the next 4 years.

Each item that is identified on the R&R plan has a useful life. This useful life along with the total cost of the equipment determines the funds that must be set aside each year to replace the equipment when it has reached its end of life. If replaced on a one-to-one basis, ITS would replace 39 Windows file servers that will reach the end of their 4 year useful life in AY2005-2006.

This project will develop a plan for server consolidation using the 39 Windows file servers, the services they provide, and the applications they host, as a pilot for this plan. This plan will focus on three aspects of server consolidation:

1. **Data Consolidation** – Consolidating databases and storage systems to make the data more accessible or manageable.
2. **Physical Consolidation** – Consolidating servers that are running the same operating system and the same applications into larger, more powerful systems.
3. **Application Consolidation** – This involves hosting diverse applications on the same physical hardware using third party software to partition the various applications from one another.

This plan will also make recommendations on standardizing services and applications where appropriate.

**Quantitative/Qualitative Return on Investment:** Not including server hardware costs themselves, each server represents numerous, ongoing operational costs. Some of these costs are quantitative (i.e., backups tapes, data storage, licensing, etc.) while some are more qualitative, opportunity costs (i.e., maintenance, support, etc.). While not linear due to the fact that we are not decreasing the number of services we provide, both quantitative and opportunity costs will be reduced by some factor with this server consolidation effort.

**Cost savings/Cost avoidance anticipated for the project:** Eight thousand dollars is budgeted per server for renewal and replacement. Some cost more, some less, but this \$8,000 figure is the average cost based on historical data. Any effort we make to decrease the number of servers replaced will result in a cost savings of some multiple of this \$8,000 figure.

**Target Completion Date:** 12/31/2005

## Mac/Windows Networking

Sinclair Community College has 3200 Windows PCs and 150 Macintosh (Mac) PC's on campus. When it comes to networking, Windows PCs and Mac PCs have historically spoken different languages; therefore, each required special configurations to work together. Even so, the Mac PCs were still semi-isolated from Sinclair's primary Windows network. With the release of Mac OS X, Apple's new operating system, this separation of Mac's and PC's may no longer be necessary since they now can communicate using the same language. This new operating system plus the increase in requests for Macs from Sinclair departments has prompted ITS to re-evaluate its processes for provisioning Macintosh PCs.

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This project will have the following scope:

1. Research the interoperability features of Mac OS X to see how this OS can be integrated into Sinclair's network.
2. Research if, and how, ITS's automated management and security tools can be used with Mac clients.
3. Research what operating system versions and/or third party products are necessary for interoperability.
4. Test Mac OS interoperability with Windows Active Directory, Microsoft Exchange, folder/file access and drive mapping.
5. Develop new processes and procedures, if necessary, to configure Mac PC's for communication on Sinclair's network.

**Quantitative/Qualitative Return on Investment:** Currently, the Macs on campus are administered by the departments purchasing those Macs because their needs are significantly different than those of Windows PC's. If this integration is successful, it could open the door to more centralized management of all Mac clients on campus.

**Cost savings/Cost avoidance anticipated for the project:** If it is determined that Windows Active Directory can be used to authenticate users accounts from Mac clients, departments would not have to purchase Mac servers for user authentication and network resource provisioning. This would save Sinclair from having to purchase separate Mac servers for this purpose.

**Target Completion Date:** 5/30/2006

## Voice Over IP (VOIP) Pilot

The VOIP pilot is a project to develop a better understanding of the operation of, and determine the viability and capability of, the newest technology phone system. This is very important as Sinclair is within two years of replacing the present phone system based on the current R&R schedule. This project will provide for a small VOIP system to be installed in an undetermined department or remote office to test abilities and compatibility with the present phone system and the Sinclair LAN. The trial will provide an evaluation of the VOIP capabilities, its remote administration, features, and its effect on the Sinclair network. This trial will also help to define a deployment strategy. This will be weighed against the capital commitment that will be required to change out the entire phone system.

**Estimated cost of project:** \$40,000

**Target Completion Date:** 3/1/2006



## Internet Capacity Expansion

Due to the exponential growth of Internet usage at Sinclair , it is necessary to plan for the increased capacity that will be needed to provide an acceptable level of response. ITS is planning on reviewing the several alternatives for new connectivity to the Third Frontier Network being built by OARnet. Since the installation of an alternate provider for disaster recovery purposes, ITS will be actively looking to improve and increase the bandwidth to both providers on an economical basis to maintain and increase the level of service. ITS will also be reviewing some strategic partnerships that could further enhance this project and its funding. When the review is completed, a recommendation will be put forth for approval and implementation.

**Target Completion Date:** 10/1/2005

## PC/Printer Inventory

In order to fill gaps that have been identified in the use of an automated PC inventory system (see the PC imaging project description), Information Technology Services will be implementing a PC and Printer inventory process to track PCs on campus. The process will involve logging all serial numbers of PCs and Printers received into a database, and recording the location where PCs are installed. When PCs are removed or replaced at a later date by ITS, the database will be updated to reflect the change to the serial number's location. The PCs and Printers will be tracked for all labs, on and off campus, and all administrative offices, on and off campus. When the

PCs are moved to surplus and sold, this information will be changed in the database. To assist in the inventory process, ITS will be investigating bar coding capabilities. The annual inventory will take selected PC and Printer information from the database and technicians will spot check these to verify the PCs and Printers are still in the locations listed in the data base. ITS will also continue to research the inventorying capabilities Altiris provides that will allow us to ensure all computers are using the same software as installed and provide an accurate and dependable hardware inventory of all networked systems.

**Target Completion Date:** 6/30/2006

## Investigate Plato Web Access

Implementing Plato labs at high school locations allows Sinclair to reach out to future students of the College. Plato is a learning software application that will test the student, determine which academic areas they are deficient in, determine which set of curriculum the student needs to work through, and then test the student. By providing

### Sinclair Strategic Clusters

Student Learning and Support Services	Workforce Development Services	Organizational Development and Effectiveness	External Accountability and Community Service	Financial Management and Resource Development
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the Plato labs at high school locations, we are identifying students who are required to complete developmental classes at Sinclair before they enter College.

These students are high-risk college students who often drop out of college. By reaching out with Plato, Sinclair will assist the students in identifying the subjects they need remediation in and supply that learning, all prior to the student graduating high school and entering the College. Sinclair gives back to the community, creates a better student for Sinclair, and ensures success for the student's College years. ITS provided and installed PCs for Dunbar, Stebbins, Northridge, West Carrollton and Miamisburg Schools. This fiscal year the College will be installing labs at 4 more high schools with new equipment purchased with the funds donated by the Mathilde foundation. The Mathilde Foundation has committed to the funding of 3 ARCS per year for the next several years.

Over the next year, Information Technology Services will investigate using Plato Web Access for the ARC labs at the high school locations rather than the client-server version which they currently use. Other options available for Plato access are: Sinclair Community College hosted Plato Web version using MDECA as the Internet Service Provider; Sinclair Hosted Plato Web Version via dedicated T1 connection from high school to Sinclair; or a Hybrid System with a content server at each ARC location and a database and license server maintained on campus. These options will be researched to determine if significant cost savings can be realized and a proposal forwarded to the Director, Outreach Services.

**Target Completion Date:** 8/31/2005

## Classroom Network Control

Information Technology Services will be investigating methods for instructors to control network access in classroom labs. Requests have been made to ITS regarding the possibility of a software application that would allow the instructor to “turn off and turn on” the network connection to the PCs in the classroom. The request is for software that would allow the instructor to “control” the student's network access during the course of the class. ITS will research applications available to provide this service, the requirements and cost of implementing, and testing the operability of the application.

**Target Completion Date:** 6/30/2006

## Pay for Print

Sinclair Community College is considering a pay-for-print solution in order to provide better quality printing for our students, to recover the costs of that printing, and to deter wasteful printing.

There are many challenges the computer classrooms and labs face when dealing with printing issues. Some of these challenges are:

- Faculty require students to print more pages.
- Students print large documents only to find out the printouts are not what they expected or in the format they desired.
- Students print documents multiple times.
- Costs for printer supplies are increasing.
- There is no incentive for students to limit or be responsible for their printing.

To meet these difficult challenges, ITS is looking to provide a web based, in-house pay-for-print solution to be used by all labs/classrooms on campus.

By purchasing a pay for print solution, Sinclair Community College will be able to reduce costs by decreasing the amount of waste. Also, we will be able to recover costs by charging students a reasonable fee (e.g., 5¢ per page), and to provide better quality printers by using funds saved.

**Cost savings/Cost avoidance anticipated for the project:** In AY 2004-2005, students printed 1,400,000 sheets of paper in the Teleports and CIL labs at a cost of \$6,065. If we charge students \$.05 per copy we could possibly eliminate 50% of the pages printed by forcing students to be more responsible. The remaining 50% would produce \$35,000 in revenue that would be used to pay for the system. This equates to a 1 year break-even with the system only being used in the Teleports and CIL labs. In addition to helping us recoup cost, we could use the revenue generated by charging students for their printing to provide additional services. An example of this would be to charge a higher price for color printing or other capabilities that are cost prohibitive today.

**Estimated cost of project:** \$35,000

**Target Completion Date:** 3/31/2006

## TutorTrac Implementation

Sinclair Community College part-time and student employees play a major role in providing quality customer service. One of the biggest challenges many departments face is creating a schedule to ensure coverage and expertise to specific work areas day by day, quarter by quarter.

TutorTrac, a web-based, in-house scheduling application (shown in Figure 4.2) has been purchased and is being implemented in Tutorial Services.

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The objective of this project is to assist Tutorial Services with implementing TutorTrac and evaluate if TutorTrac software will fit the needs of ITS and other departments for scheduling part-time and student employees.

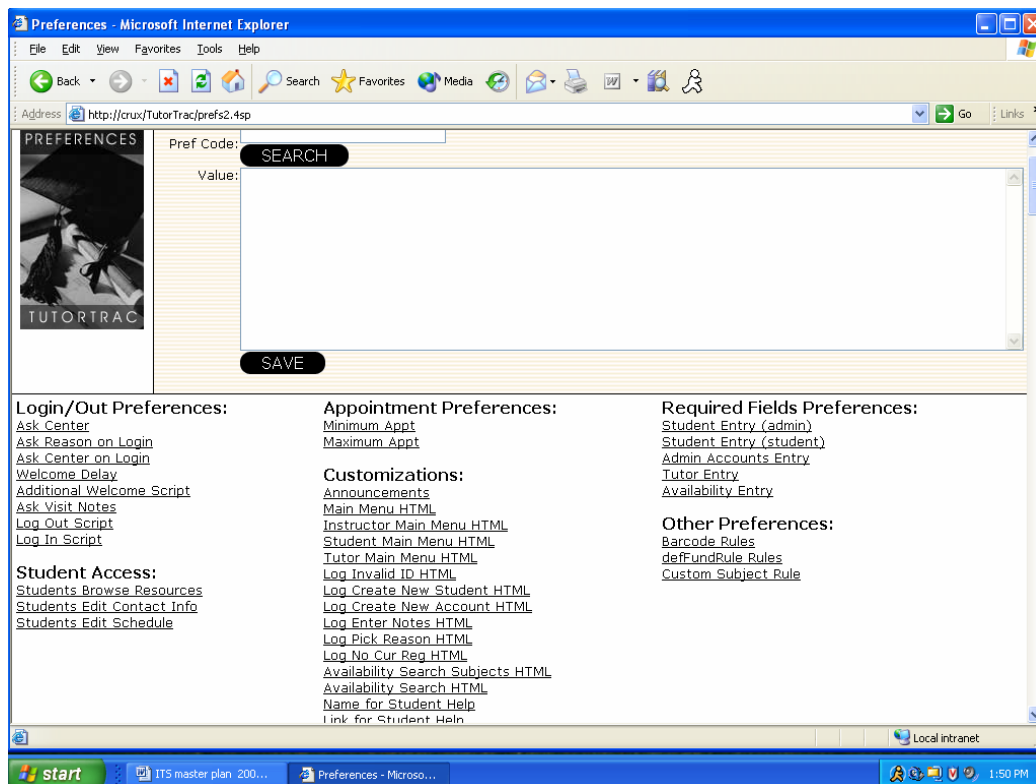


Figure 4.2. TutorTrac uses a web interface to efficiently schedule Tutors for students.

**Target Completion Date:** 12/31/2005

## Lab/Classroom Facilities Improvements Study

ITS provides support for the computing and networking needs of Labs and Classrooms. In some of the technology spaces, faculty require student interaction and need to provide an unobstructed line-of-sight between student and instructor. Currently to accommodate this, laptops have been purchased and placed in these areas.

Our primary objective with this project is to investigate enhancements to these spaces including desk style and grouping to improve the field of view for the students and instructor.

**Cost savings/Cost avoidance anticipated for the project:** Improvements in the quality of learning environments will be identified and the trend to request laptops in

place of desktops will be reduced. Purchasing desktop computers rather than laptops results in a savings of approximately \$900 per unit.

**Target Completion Date:** 4/30/2006

## Lab Support Improvements

To better serve students in classrooms and labs, learning tools are needed to enhance the quality of support. As the ability to enhance learning through the addition of technology becomes more integrated in the learning process, it is imperative that Sinclair provides standard policies and procedures, comprehensive student support, and coordination of our classrooms and labs.

To meet the challenges of staying current with technology, ITS proposes to offer training to part-time and student lab employees and work with Lab Coordinators from the multiple departments that manage computer classrooms to standardize policies and procedures improving coordination of our classrooms and labs.

**Qualitative/Quantitative Return on Investment:** Student support will be improved by providing consistent training in core applications and customer service as well as standardizing policies and procedures in the labs.

**Target Completion Date:** 12/31/2005

## IP Video Conferencing

Media Services, in partnership with other Information Technology staff, will investigate and test ways to do on-campus and off-campus IP videoconferencing using existing Internet bandwidth as much as possible. Media Services will also investigate desktop videoconferencing on campus with the intent of establishing standards for the campus. IP Videoconferencing would potentially be used for current Distance Learning initiatives as well as for the YMCAs, Warren County, and any other expansion initiatives.

**Qualitative/Quantitative Return on Investment:** The use of IP (Internet Protocol) video conferencing could allow the college to offer video conferencing services in many more locations than are currently served by the fixed location video conferencing. Costs could be saved or avoided in the future by being able to provide additional distance learning classes in more locations without increasing campus infrastructure.

**Target Completion Date:** 2/1/2006

### Sinclair Strategic Clusters

Student Learning and Support Services	Workforce Development Services	Organizational Development and Effectiveness	External Accountability and Community Service	Financial Management and Resource Development
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## Synergy to Crestron Conversion

Media Services will complete the installation of a new multimedia control system for the existing interactive learning classroom, 14-108, in September of 2005 as described in the AY 2004-2005 project to Upgrade CIL Media Equipment. The pilot became necessary because the existing multimedia control system is aging, and we are experiencing costly repairs. Additionally, it is no longer supported by the original vendor making an upgrade path for this system impossible. The pilot includes controlling room 14-108 simultaneously using both the old and the new control systems. This will ensure that no Distance Learning initiatives will be negatively affected by the change in control systems.

Media Services will be testing and verifying the new control system in room 14-108 during the summer of 2005. During AY 2005-2006, Media Services will be working to ensure that the new multimedia control system is fully functional. When we are assured that the system is functioning properly, Media Services will convert the remaining interactive learning classrooms, 14-130 and 14-006, to the new control system and phase out the old control system during the summer of 2006. We expect to complete this conversion using existing R&R funds.

**Estimated cost of project:** This project has been planned for and budgeted under the R&R plan at a cost of \$244,000.

**Cost savings/Cost avoidance anticipated for the project:** By estimating the useful life of equipment and performing replacements before that equipment start to fail, it not only saves money in repair costs but also prevents the loss of revenue due to the inability to provide a service in a satisfactory way to the customer.

**Target Completion Date:** 9/4/2006

## Purging SPAM

ITS currently provides a service to the College's email users whereby email that has the characteristics of SPAM (unsolicited or "junk" email) is marked with a tag that can be used by each individual mailbox owner to filter or delete the mail. Over the last year, the amount of mail that we are receiving has almost tripled, and this is largely attributable to increases in SPAM. We can no longer afford to have our resources wasted by continuing to pass such large volumes of mail that has no value to the College.

With recent improvements in the version of SpamAssassin that we use to tag messages, we are seeing a very small number of false positives (email that is tagged as SPAM but really is legitimate). Therefore, we plan to implement a system that will

delete mail messages identified as SPAM rather than simply tagging them. We will also provide each user a “digest” of all of the messages that were not delivered so the user can review for any legitimate messages and contact the sender if necessary.

**Estimated cost of project:** This project will not require the purchase of any hardware, software, or help from external resources.

**Cost savings/Cost avoidance anticipated for the project:** Increases in the amount of SPAM is causing the college’s resources to be wasted, including Internet capacity, file storage space, mail server processing, and end user productivity. If this project were not to be implemented, the College would continue to experience this waste resulting in the need to purchase additional resources to provide the same level of service.

**Target Completion Date:** 12/31/2005

## Wireless Networking Expansion

During AY 2003-2004, we completed a project to determine the architecture that we would use to expand our wireless network capabilities. We used this architecture as the plan for replacing all existing wireless components with the new technology that was chosen. In AY 2004-2005, we created wireless access using this technology in the atriums of 4 campus buildings.

During the AY 2005-2006, we are proposing an expansion of wireless access in the public spaces within the remainder of the campus buildings. We have requested funds to purchase the equipment and provide for the installation. In addition, we are investigating alternatives for partnering with a provider of wireless Internet access to offer “guest” wireless connectivity for students and other unauthenticated wireless users, which could result in a substantial reduction in the cost of the project.

**Estimated cost of project:** \$114,000

**Target Completion Date:** 6/30/2006

## Digital Asset Management Expansion

Over the last year, we have worked with campus users to create a vision for a system that will provide an infrastructure to store, catalog, index, search, and deliver digital assets. We currently have a pilot implementation of this system that is being implemented using content from Child and Family Education, Nursing, Automotive Engineering, and Physics. This system provides a “proof of concept” and builds an infrastructure that can easily be expanded.

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During the next fiscal year, we have requested funds to expand the pilot infrastructure to a full campus production digital asset management system. Many departments use multimedia content in a variety of ways. This project will allow the centralized management of video and audio content thereby reducing costs through efficiencies of scale and allowing more widespread sharing of published multimedia content.

**Estimated cost of project:** \$275,000

**Target Completion Date:** 6/30/2006

## Systems Development & Maintenance

Following are the Major Projects for AY 2005-2006 for the Systems Development & Maintenance Department:

- **Convert Bursar Office to Colleague's POS Processes**
- **Automatic Reset Active Directory Passwords**
- **Staff Professional Development - Object Oriented Programming**
- **Faculty Pay Load Process**
- **Sponsored Billing Revisions**
- **Colleague R18 Preparation**
- **Replace On-line Card Office**
- **HEI Reporting - Faculty, Facilities, and Financials**
- **Expand Business Intelligence Initiative**
- **SAS Implementation**
- **Course Management System Selection**
- **Colleague Changes - Mini-terms**
- **Document Imaging - Feasibility Study**
- **Career Planning & Placement - Feasibility Study**
- **Curriculum Management Tool Version 2.0**
- **Student Success Plan, Version 3.0**
- **Generic Workflow Engine - Online Forms and Approval Processes**
- **Develop New Portal**
- **Online Transcript Exchange**
- **Web Content Management System Update**
- **Improve Online Admissions Application**
- **Develop Web Sites in Support of Instructional Master Plan**

A tentative timeline for these projects is provided in Figure 4.3. These estimated schedules are subject to change due to changes in priorities or the need to initiate other projects.



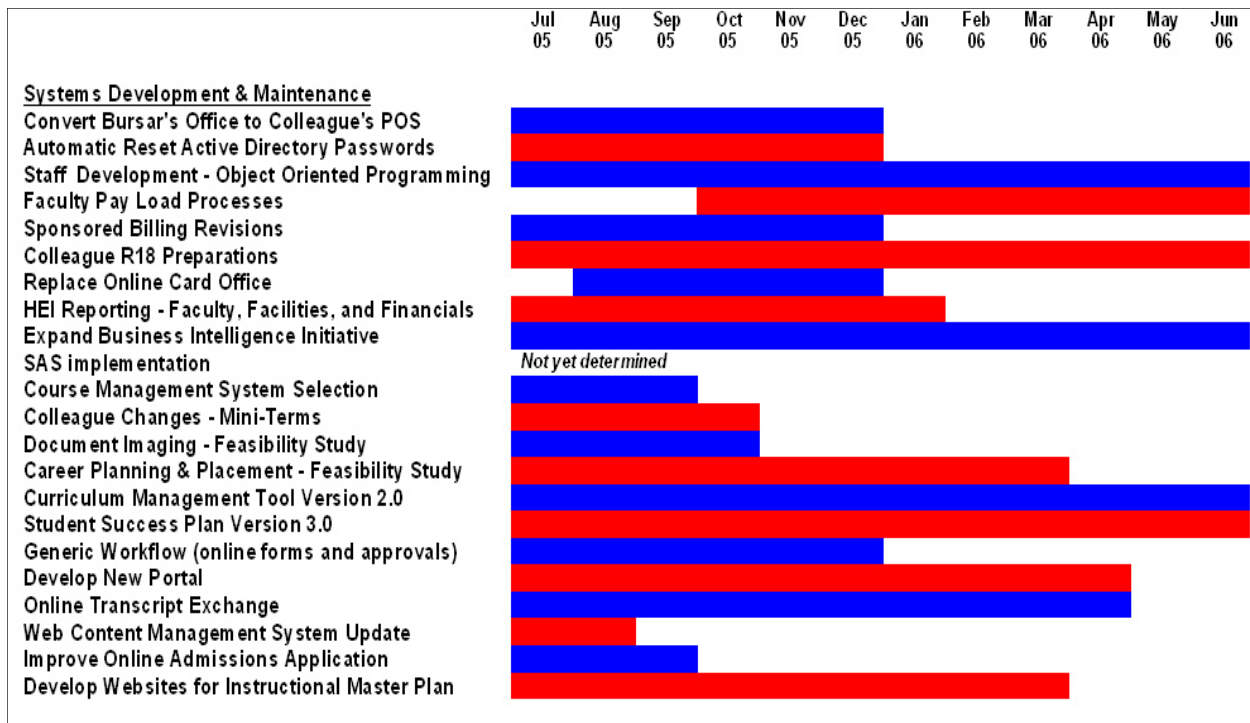


Figure 4.3. Projects Timeline.

Descriptions of these projects are presented on the following pages.

## Convert Bursar Office to Colleague's POS Processes

The Bursar office's current POS system is antiquated and lacking in sufficient vendor support. The Colleague system has most of the functionality of the current POS system. This project involves putting the Colleague functionality into full production and creating custom programming for missing functionality.

**Estimated Cost of Project:** This project will take approximately .33 FTE of the average cost of an Administrative Systems support position. Hardware costs funded through the Bursar's office will be approximately \$15,000. Third party programming costs are estimated to be \$2,500. Total project costs will be approximately \$36,500.

**Cost savings/Cost avoidance anticipated for the project:** Purchasing a third-party POS system for the Bursar's Office is estimated to be in the range of \$150,000 based on the fact that \$285,000 was recently spent on a larger and more complex bookstore POS system. Therefore, the estimated cost avoidance is \$113,500.

**Target Completion Date:** December 2005

## Automatic Reset Active Directory Passwords

Each month a large number of requests come to the help desk for assistance in resetting forgotten passwords. Help desk staff walk the user through a series of questions to validate identity and then the staff manually resets the user's password. This project would involve the creation of an unattended web process that would allow users to reset forgotten passwords themselves.

**Estimated Cost of Project:** Project will take approximately .2 FTE web developer staff time. This equates to approximately \$11,100.

**Cost savings/Cost avoidance anticipated for the project:** Availability of this service should significantly increase student access to Sinclair's computing resources. This service would allow users to correct access issues even when the help desk is unavailable.

**Target Completion Date:** December 2005

## Staff Professional Development - Object Oriented Programming

Administrative Systems has on staff individuals who are very knowledgeable in object oriented programming languages. This project calls for the scheduling of formal training sessions to be led by these individuals for the benefit of others in the Administrative Systems area. The project is designed to enhance knowledge of current programming languages throughout Administrative Systems.

**Estimated Cost of Project:** This project will take the equivalent of .25 FTE. At the average annual salary and benefits for an Administrative Systems support position, this project would cost \$18,000.

**Cost savings/Cost avoidance anticipated for the project:** Current rates for contracting for Java programming skills run, at a minimum, \$60 per hour. At this rate, the project costs would be recouped if eight weeks of assigned tasks could be transferred from external consultants to internal staff. Over the first six months of AY 2004-2005, Administrative Systems spent \$43,200 for contracted programming services.

**Target Completion Date:** June 2006

## Faculty Pay Load Process

It is expected that during AY 2005-2006, the committee examining faculty pay load processes will complete its work and will have its recommendations accepted. These recommendations will most likely require some changes to current Colleague programs. This project anticipates the need to make these changes.

**Estimated Cost of Project:** It is estimated that this project would need approximately .25 FTE. At the average cost of salary and benefits for Administrative Systems support staff, project cost would be \$18,000.

**Cost savings/Cost avoidance anticipated for the project:** Sinclair's annual instructional budget is approximately \$60,000,000. Improved faculty pay load processes may have the potential to increase efficiencies in the allocation of this budget. Every one-tenth of one percent increase in efficiency could result in an annual savings of \$60,000.

**Target Completion Date:** June 2006

## Sponsored Billing Revisions

The Colleague sponsored billing module is currently under review to determine if Sinclair can and should discontinue its use. If the decision is made to discontinue use, some level of programming will be needed to replace lost functionality. This project anticipates these programming needs.

**Estimated Cost of Project:** It is estimated that this project would need approximately .25 FTE. At the average cost of salary and benefits for Administrative Systems support staff, project cost would be \$18,000.

**Cost savings/Cost avoidance anticipated for the project:** Twelve times a year Sinclair's software vendor tailors revisions to their base line software in order to accommodate Sinclair's custom code for sponsored billing. This tailoring takes place every time that the vendor releases patches to their baseline software. On average, Sinclair spends approximately \$20,000 per year to maintain these custom revisions.

**Target Completion Date:** December 2005

## Colleague R18 Preparation

The next Colleague version is scheduled to be released in summer 2005. It is expected that Sinclair will adopt the new release in AY 2006-2007. In order to prepare

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for this release, activities such as the following need to take place:

- Convert all I descriptors to computed columns;
- Convert all custom programming to R18 standards;
- Run all planning tools and converters; and
- Deploy the User Interface (UI) campus wide.

**Estimated Cost of Project:** The project will take approximately 3.5 FTE staff time during AY 2005-2006 at an estimated cost of salary and benefits of \$254,000. Equipment and license costs are estimated to be approximately \$250,000 over the life of the transition (AY2005-2006 and AY2006-2007).

**Cost savings/Cost avoidance anticipated for the project:** Transition to R18 positions Sinclair to take advantage of future product benefits such as database independence and more efficient JAVA code.

**Target Completion Date:** June 2006

## Replace Online Card Office

Currently online transactions to Sinclair’s one-card system are made through the vendor’s off campus service center and are provided as part of the vendor’s base product. In AY2005-2006, the vendor will no longer provide this service as part of the base. Starting in AY2005-2006, these online card office services will be at an additional fee. This project anticipates the additional license fees and internal process changes resulting from this change in vendor practice.

**Estimated Cost of Project:** Estimates received from vendors range from \$5,000 to \$30,000 additional fees per year. In addition, the transition will take approximately .2 FTE staff time at an estimated cost of \$14,400.

**Cost savings/Cost avoidance anticipated for the project:** There is no direct cost savings or cost avoidance identified with this project.

**Target Completion Date:** December 2005

## HEI Reporting - Faculty, Facilities, and Financials

The HEI reporting requirements to the Ohio Board of Regents fall into the four areas of enrollment, personnel, facilities and financial reporting. The enrollment component of HEI reporting was addressed in AY 2004-2005. This project involves adding the required data elements to the data warehouse and creating reports that will support the other required areas.

**Estimated Cost of Project:** It is estimated that the project will take .33 FTE of the average salary and benefit cost of a business intelligence staff member. This equates to approximately \$17,000.

**Cost savings/Cost avoidance anticipated for the project:** HEI reporting is required by OBOR. The primary benefit is the reduction of personnel costs in the support and maintenance of current reporting methods. These costs are estimated to be .1 FTE or approximately \$6,000 per year. An additional benefit is the ability to analyze the data with business intelligence tools.

**Target Completion Date:** January 2006

## Expand Business Intelligence Initiative

This project involves the continued expansion of business intelligence usage throughout the campus. Some possible candidates for expansion include:

- Creating access to non-credit data via the data warehouse
- Creating access to R25 data via the data warehouse
- Creating access to CMT data via the data warehouse
- Creating access to web statistics at a detail level via the data warehouse
- Deploying business intelligence reports and capabilities to academic divisions
- Providing HR and Business Operations ad-hoc reporting capabilities via the data warehouse
- Increasing the number of standard reports routinely published to the web.

**Estimated Cost of Project:** The annual AY 2005-2006 budget for Business Intelligence is approximately \$480,000, which includes personnel and operating costs.

**Cost savings/Cost avoidance anticipated for the project:** Sinclair's annual operating budget is approximately \$100,000,000. If the management knowledge acquired from using business intelligence tools could result in a one-half of one percent increase in operational efficiency across campus, then this initiative could mean a \$470,000 annual savings.

**Target Completion Date:** June 2006

## SAS Implementation

The SAS Institute is making a major commitment to develop products and services that promote cooperative efforts between K12 and higher education. It is Sinclair's strategic vision to be a founding member of this initiative. The specifics of the project

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are not currently finalized, but it is anticipated that at the very least participation will involve deployment of SAS' high-end analytics.

**Estimated Cost of Project:** Not yet determined

**Cost savings/Cost avoidance anticipated for the project:** Not yet determined

**Target Completion Date:** Not yet determined

## Course Management System Selection

Sinclair's distance learning initiatives may be able to benefit from features included in the most recent versions of course management software. This project involves conducting an RFP process in order to ensure that Sinclair is making the best course management system choice.

**Estimated Cost of Project:** Project will take approximately .2 FTE web developer staff time. This equates to approximately \$11,100.

**Cost savings/Cost avoidance anticipated for the project:** Sinclair currently subscribes to two course management systems. Selection of a single system has the potential to save between \$30,000 and \$55,000 per year.

**Target Completion Date:** September 2005

## Colleague Changes - Mini-terms

Sinclair has made the strategic decision to offer mini terms between quarters. This decision necessitates changes to some Colleague setup and reporting processes. This project entails making these necessary changes

**Estimated Cost of Project:** It is estimated that this project would need approximately .1 FTE. At the average cost of salary and benefits for Administrative Systems support staff, project cost would be \$7,220.

**Cost savings/Cost avoidance anticipated for the project:** Per Sinclair's budget office, target expenditures per FTE student are between \$6,500 and \$7,000 per year. New FTE students are estimated to bring in additional revenue in this same range. Conversion of Colleague to accommodate mini terms supports attracting new FTE's.

**Target Completion Date:** October 2005

## Document Imaging – Feasibility Study

Many of Sinclair’s processes, especially in the student services area, are very paper intensive. There are products on the market that have the potential to reduce costs associated with the processing, storage, and retrieval of documents. This project involves establishing a cross-functional team to examine how these products could be successfully implemented at Sinclair.

**Estimated Cost of Project:** It is estimated that this project would need approximately .1 FTE. At the average cost of salary and benefits for Administrative Systems support staff, project cost would be \$7,220.

**Cost savings/Cost avoidance anticipated for the project:** There would be no direct cost benefit or cost avoidance during AY2005-2006. One of the goals of the feasibility study would be to identify future cost benefits.

**Target Completion Date:** October 2005

## Career Planning & Placement – Feasibility Study

Career Planning & Placement believes that an infusion of web and other software features into office processes has the potential to significantly increase the quality of service to students. This project involves providing systems analyst resources to the office with the goal of identifying those process changes or software purchases that are most likely to provide the greatest return on investment and the greatest increase in services to students.

**Estimated Cost of Project:** It is estimated that this project would need approximately .1 FTE. At the average cost of salary and benefits for Administrative Systems support staff, project cost would be \$7,220.

**Cost savings/Cost avoidance anticipated for the project:** There would be no direct cost benefit or cost avoidance during AY2005-2006.

**Target Completion Date:** March 2006

## Curriculum Management Tool Version 2.0

This project involves creating enhancements to the existing CMT product. These enhancements include 1) adding a build feature for new and revised programs, 2) including tabs for each quarter in a program sequence, 3) adding the ability for faculty and students to add assessment of course outcomes.

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**Estimated Cost of Project:** It's estimated that the project will take .5 FTE of a web developer's time. At an average developer's salary and fringes, the cost of the project during AY2005-2006 would be \$27,835.

**Cost savings/Cost avoidance anticipated for the project:** One expected outcome from CMT is a better alignment of course offerings with student expectations and needs which will, in turn, lead to higher enrollments in courses. Per Sinclair's budget office, each new FTE student brings in additional revenue annually of between \$6,500 and \$7,000.

**Target Completion Date:** June 2006

## Student Success Plan, Version 3.0

The Title III grant calls for software development in support of student retention to take place during the entire five year span of the grant. The Student Success Plan 3.0 project is the programming associated with the third year of the grant. Specific system requirements/specifications for year three would be one of the first steps in this project.

**Estimated Cost of Project:** Version 3.0 will take .5 FTE of the average cost of a web developer's time. This equates to approximately \$27,800.

**Cost savings/Cost avoidance anticipated for the project:** There are currently approximately 4,000 at-risk students participating in SSP. If SSP is successful in retaining half of the 2,000 whom, according to national statistics, would traditionally stop out, this means additional student fee/subsidy revenue of \$3,250,000 annually. (Sinclair's budget office estimates \$6,500 to \$7,000 revenue per FTE. A headcount of 1,000 students will generally equate to about 500 FTE.)

**Target Completion Date:** June 2006

## Generic Workflow Engine – Online Forms and Approval Processes

This project entails modifying the workflow engine supporting CMT so that the engine can be used with other forms and other approval processes such as grant coversheets with approvals. This project would also include adding an electronic signature approval feature to the workflow engine.

**Estimated Cost of Project:** It is estimated that this project would take approximately .2 FTE. At the average salary and fringes of a web development staff member, the project cost would be \$11,100.



**Cost savings/Cost avoidance anticipated for the project:** The recently implemented on line requisition system resulted in a reduction of approximately 500 hours of manual processing of requisition requests. This project could realize similar reductions in manual processing.

**Target Completion Date:** December 2005

## Develop New Portal

The currently used portal is based upon proprietary software that does not allow customization to meet Sinclair's unique needs. Web systems possesses the technical expertise to create an internally developed portal that will allow for specific customization to Sinclair's environment. The portal would seamlessly integrate with Sinclair's course management system and would incorporate features such as the inclusion of photo images on class rosters.

**Estimated Cost of Project:** \$132,000.

**Cost savings/Cost avoidance anticipated for the project:** The license cost of the proprietary portal software is \$26,000 per year. Staff time to maintain the portal is approximately \$12,000 per year.

**Target Completion Date:** April 2006

## Online Transcript Exchange

The explosion of e-commerce has placed a spotlight on the need for institutions to be able to exchange electronic copies of student transcripts. Both national and state efforts are underway – Speede nationally, CAS in Ohio. This project involves the identification and implementation of the technology most appropriate to meet Sinclair's needs.

**Estimated Cost of Project:** This project will take the equivalent of .25 FTE. At the average annual salary and benefits for an Administrative Systems support position, this project would cost \$18,000.

**Cost savings/Cost avoidance anticipated for the project:** Sinclair currently employs 2.0 FTE staff to process transcript requests - one FTE for incoming requests and another for outgoing requests. Online transcript exchange has the potential make this processing much more efficient.

**Target Completion Date:** April 2006

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## Web Content Management System Update

The current web content management system is operating on software that is no longer supported by the vendor. Sinclair has the necessary licenses to move to a supported version of the software. This project involves devoting the necessary staff time to move web content for both the Internet and the Intranet to the supported software.

**Estimated Cost of Project:** Content management software upgrade will take .25 FTE of the average cost of a web developer's time. This equates to approximately \$13,900.

**Cost savings/Cost avoidance anticipated for the project:** This project is vital to the continuing success of the Sinclair website ([www.sinclair.edu](http://www.sinclair.edu)). Cost avoidance is an issue since the software utilized has been discontinued and future modifications to the website might be impacted.

**Target Completion Date:** August 2005

## Improve Online Admissions Application

This project includes the specific items of 1) creating a web-based academic program selection feature and 2) improving navigation. Specific application paths for selective admissions programs (e.g., Nursing) may be an additional feature included in this project.

**Estimated Cost of Project:** Application enhancements would take .33 FTE of the average cost of a web developer's time. This equates to approximately \$18,400.

**Cost savings/Cost avoidance anticipated for the project:** Per Sinclair's budget office, target expenditures per FTE student are between \$6,500 and \$7,000 per year. New FTE students are estimated to bring in additional revenue in this same range. Enhanced navigation and improved selection of academic programs should result in the enrollment and/or retention of additional FTE students.

**Target Completion Date:** September 2005

## Develop Web Sites in Support of Instructional Master Plan

The instructional master plan identifies the need to increase web visibility for several academic areas. This project involves working with identified academic areas to specify web content and then to create web templates for the content that would be maintained by the end user.

**Estimated Cost of Project:** Project will take approximately .2 FTE web developer staff time. This equates to approximately \$11,100.

**Cost savings/Cost avoidance anticipated for the project:** Per Sinclair's budget office, target expenditures per FTE student are between \$6,500 and \$7,000 per year. New FTE students are estimated to bring in additional revenue in this same range. Improved instructional websites should result in the enrollment and/or retention of additional FTE students.

**Target Completion Date:** March 2006

## Other Planned Projects

The following additional projects are planned, but adequate resources are not available to schedule them. They will be scheduled as resources become available during this year or the following year. However, if a particular project is given a higher priority by the IT Steering Committee, it will be moved forward on the schedule, and another project will be delayed.

### Colleague - Non-credit Registration

It is possible that the inclusion of non-credit registrations into Colleague would result in better tracking and management information. An implementation plan is needed in order to assess the costs and benefits of undertaking this transition. The goal of this project would be to create such a plan.

### Web-based Budgeting

Interest has been expressed for developing budget processes that use the web for requesting, justifying, compiling and reporting budget information. The goal of this project would be to identify project specifications and to identify various web methods that could be used to implement such a system.

### Colleague Position Budgeting

Current HR practice is to associate individuals with specific positions identified in the Colleague position file. While this approach is appropriate for operational purposes, it is difficult to manipulate and use position information in isolation. The Colleague product has the capability to be used as a position budgeting system. This project calls for the examination of these capabilities with the purpose of identifying future applicability for Sinclair.

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## Employee's Online Access to Pay Stub Information

Colleague currently has in beta testing an enhancement to their Web-Advisor product that would allow employees to see, via the web, the full range of data currently displayed on the printed pay stub. This project calls for the installation of this enhancement once it is released from beta testing.

## Upgrade Kiosks

Kiosks are currently working on technology that is outdated and difficult to maintain. There is only one person on staff who has the knowledge needed to maintain the current kiosks. This project would change the existing kiosk technology and would upgrade the physical look of kiosk stations.

## Graphic Representation of Academic Program Requirements/Sequences

This project involves creating an alternative way to display program courses and sequencing on the web. Currently this information is displayed in text format. The project would create an alternative graphical representation.

## Campus-wide Video/Messaging System

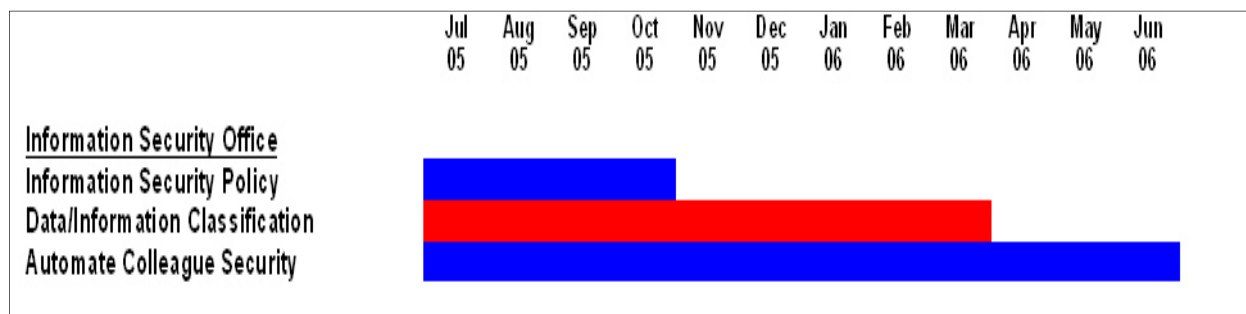
The purpose of this project is to upgrade the existing video/messaging system in Building 12 and extend it to a three channel system. The two additional channels would be used to 1) replace the Video Wall in Building 14, and 2) provide a state-of-the-art messaging system for Student Services. Although this system would be extremely beneficial in communicating with students, and it has been submitted as a Capital Project Request for AY 2005-2006, budget constraints may cause a delay in implementation.

## Information Security Office

Following are the Major Projects for AY 2005-2006 for the Information Security Office:

- **Information Security Policy**
- **Data/Information Classification**
- **Automate Colleague Security**

A tentative timeline for these projects is provided in Figure 4.4. These estimated schedules are subject to change due to changes in priorities or the need to initiate other projects.



**Figure 4.4. Projects Timeline.**

Descriptions of these projects are presented on the following pages.

## Information Security Policy

An information security policy will be developed to define the College’s goals, objectives, and general strategy for Information security achievement. The policy will provide guidance to ensure legislative compliance, protection of assets, and effective protection of confidentiality and privacy. The policy will define what types of information assets need to be protected, minimum requirements for protection, and who has the responsibility and authority for operational policies and procedures to implement the policy.

**Qualitative/Quantitative Return on Investment:** Development and approval of a security policy will serve as a foundation to guide, direct, and communicate continuous development and implementation of risk-based information security processes.

**Cost savings/Cost avoidance anticipated for the project:** Implementation of an effective security policy will reduce legal exposure, liability, and associated costs.

**Target Completion Date:** 10/31/2005

## Data/Information Classification

This project is a subset of the ongoing information asset identification project. To effectively implement a risk-based security program, the institution must know what information is collected/stored and any associated protection strategies required. The data/information classification project will:

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- Establish Information Classification Criteria;
- Classify Existing Information;
- Classify New Information;
- Establish Information 'Ownership' Criteria; and
- Document 'Ownership' of Information.

Phase 1 of the project is classification of Financial data (GL), Phase II is classification of Human Resources (HR) data and shared GL/HR data, and Phase III is classification of Student (ST) and remaining shared data.

**Qualitative/Quantitative Return on Investment:** Classifying information is a primary step to implementing a targeted information security program. Identifying exactly what information needs to be protected, and to what level it needs protecting, allows resources to be dedicated to protecting the confidentiality and integrity of critical/sensitive information. It also provides increasing availability and access to non-sensitive and aggregate information to facilitate more comprehensive data mining and analysis to support data-driven decision making.

**Cost savings/Cost avoidance anticipated for the project:** Information security based on sensitivity and risk to the specific information permits security resources to be targeted to 'protect what needs to be protected' as opposed to 'protect everything' or 'protect it because it might need to be protected.'

**Target Completion Date:** 3/31/2006

## Automate Colleague Security

Develop and implement 'paperless' processes for provisioning Colleague access, assigning and approving user security, and documenting user access and security class definitions.

**Qualitative/Quantitative Return on Investment:** Current processes are paper-based, labor/time intensive, and not customer-focused. Paper 'shuffling' between supervisors, the Help Desk, Systems Development, and the Security Team result in a process that takes 3-5 days from time of access request to actual account creation. Digital storage will also provide 'real-time' accuracy of security class and user access status, as well as improve audit capabilities.

**Cost savings/Cost avoidance anticipated for the project:** Minimizing the paper process will result in savings on paper and printing costs, but the primary benefit of the process will be increased productivity and customer service.

**Target Completion Date:** Phased approach:

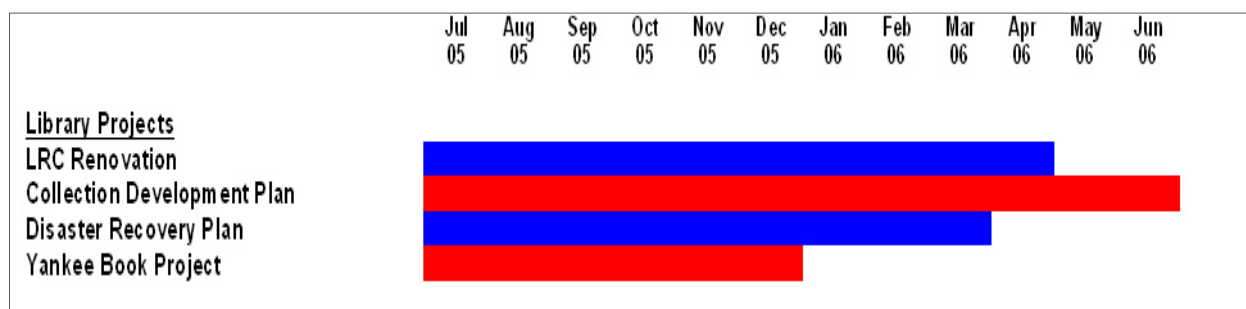
Security class definition/approval process: 10/1/2005  
 User Definition approval/signature process: 2/1/2006  
 User access/supervisor approval request process: 6/30/2006

## Learning Resources Center

Following are the Major Projects for AY 2005-2006 for the Learning Resources Center:

- **LRC Renovation**
- **Collection Development Plan**
- **Disaster Recovery Plan**
- **Yankee Book Project**

A tentative timeline for these projects is provided in Figure 4.5. These estimated schedules are subject to change due to changes in priorities or the need to initiate other projects



**Figure 4.5. Projects Timeline.**

Descriptions of these projects are presented on the following pages.

### LRC Renovation

The primary project for the LRC in AY 2005-2006 will continue to be the completion of the Renovation Project. Demolition and construction should be underway by the start of the fiscal year. In anticipation of working together in the renovated Library, library staff will need to work with IT, Writing Center, Developmental Learning, Aramark, and others to plan and coordinate services and support when the new facility opens. Library staff will also need to plan another move back into staff spaces, set up of service points, reconfiguration of library shelves and shifting the print collections, and a host of similar activities involved in reopening a library.

**Qualitative/Quantitative Return on Investment:** While efficiencies will be realized through improved space utilization inherent in the new design, there are added benefits in staff and program effectiveness to be realized through improved cooperation and coordinated support services between Library and IT staff. In addition, placement of two academic support units in this space offers new opportunities for incorporating IT and library resources into those academic programs and improving student success.

**Target Completion Date:** April 2006

## Collection Development Plan

The library needs to implement a formal plan on how it selects information content (literary, artistic, scholarly, scientific, informational, or recreational) for its collections, what form that content takes (digital file, book, magazine, video or other AV, CD, DVD, streaming media, etc.), whether it purchases or leases such material, how it determines when its useful life is reached, and how to remove material from the library collections when it is outdated, inaccurate, or no longer within the scope of the college's curriculum and mission.

In addition to answering such procedural issues, a new collection development plan should serve to inform the Sinclair community about the role of the library as a provider of information to the modern college. The stereotype of library as book warehouse persists, even though the book is no longer the preeminent form of information transfer in all academic disciplines.

The library began to develop a collection development policy under the previous director, but that project was put on hold when that person retired and a new director was hired. This project will pick up and complete the previous project by refocusing on a working document that provides faculty and staff with useful criteria and guidelines for collection building in a digital world, marked by consortium relationships with networks such as OhioLINK and the rapid introduction on new information technologies.

**Qualitative/Quantitative Return on Investment:** This document will provide a tool to assure that college resources are spent on the right material at the right time, and that long term storage and maintenance costs are minimized by removing content that is outdated, inaccurate, or out-of-scope.

**Target Completion Date:** This project will need to be processed through a number of faculty and administrative groups across campus before a final draft is in place. A draft document should be complete by the Fall Quarter 2005, tested by library staff and distributed to key groups in the Fall or Winter, revised in the Spring, and in place by the end of the AY 2005-2006.



## Disaster Recovery Plan

Because the library will continue to house paper-based and other physical collections for the foreseeable future, it needs to have a plan in place for dealing with disasters such as flooding, fire, and the like. This plan needs to identify community and regional resources that can be called upon for preservation and recovery of materials, include plans to provide library services in alternative locations, and set priorities on steps to be taken in such emergencies. This plan will be a companion to the IT Division's disaster plans for data, network, and IT infrastructure.

**Qualitative/Quantitative Return on Investment:** Having a plan in place to deal with disasters and interruptions of service is only prudent management. It will assure that decisions made under the pressure of an extreme event are based on sound financial planning.

**Target Completion Date:** March 2005

## Yankee Book Project

Academic libraries often use jobbers to purchase most of their book materials. These jobbers may be thought of as wholesale supply houses for the library book trade. They offer price discounts and incentives not available when individual libraries have to do small purchases with hundreds of different publishers. This project will involve three phases: 1) the switch to Yankee Books for day-to-day book purchases, 2) improved selection decision-making through the use of Yankee's approval plan services in conjunction with the collection development plan discussed earlier, and 3) a cost benefits study of software packages that would allow the library to integrate its ordering with its cataloging systems.

**Qualitative/Quantitative Return on Investment:** Yankee already won an OhioLINK RFP to provide discount priced services to Ohio's academic libraries. Sinclair will therefore enjoy price discounts greater than it would otherwise receive. Also, while all jobbers charge for their services, libraries generally realize more savings in reduced staff costs than they pay for the service. In addition, we will be able to see what other OhioLINK member libraries are buying and factor that information into our buying decisions. Some institutions report cost savings by waiting to see how many other libraries purchase non-core titles before ordering another copy. Finally, Yankee employs bibliographers whose job it is to evaluate new titles to determine if they are of college quality and if they are appropriate for all colleges or just for research and graduate programs. This information is available to Sinclair at the time of ordering.

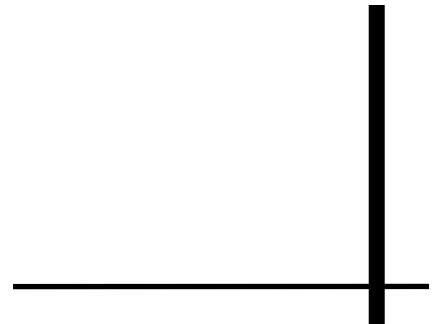
**Target Completion Date:** The first phase of this project will be completed in the July-August 2005 time period. Phase 2 will be completed in conjunction with the Collection Development Plan in December 2005, and the cost benefit study of software will be completed in time for the next budget cycle in early 2006.

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# Section 5

# Future Technologies



## Future Technologies

The Information Age organization must align itself with the accelerating pace of change, or it will be left in the dust. This pace has been rapid, especially in the last ten years, with the incorporation of the Internet and the World Wide Web (WWW) into our daily mode of operation. The rate of Internet diffusion since the creation of the WWW surpasses all other communication technologies. There are tens of millions of Americans online every day performing a wide variety of activities. The Internet has become an integral part of every day life. Ninety-four million American adults have Internet access, represented by an equal number of men and women. The Internet is used for an increasing variety of activities. Also, there is a sharp increase in access to the Internet among less educated and lower income Americans.

Many emerging technologies are dependent on, or supportive of the Internet. Following are brief descriptions of several of them.

### Visual Search Interfaces

A search on “community colleges” in Google produced over 45,000,000 hits in the Spring of 2005. This simple fact illustrates the challenge for the modern searcher: to find the right page or pages out of the millions of possibilities. Search engines such as Google, Yahoo, or Vivisimo use various methods to sort, group, or otherwise present search results in meaningful arrangements. However, information scientists also know that most information seekers seldom look past the first page or two of search results, leaving all but the most popular pages untouched.

In a March 2005 *Library Journal* article, Luther, Kelly, and Beagle reviewed visualization software that is coming on the market and being investigated by libraries. The premise is simple: a picture says a thousand words. They note that “good visual displays can compress information, convey context and relationships, and allow an array of options to be explored along alternate paths.” Instead of scanning a list of words or page titles, users of visualization software see their results grouped into clusters, folders, colors, shapes, and similar visual groupings that can in turn be searched, combined, or manipulated to increase the relevance and accuracy of the search. Highly relevant pages that would remain hidden in a traditional search result display are more likely to be found when grouped with similar pages and brought to the top level result page as a picture, similar to those shown in Figure 5.1.

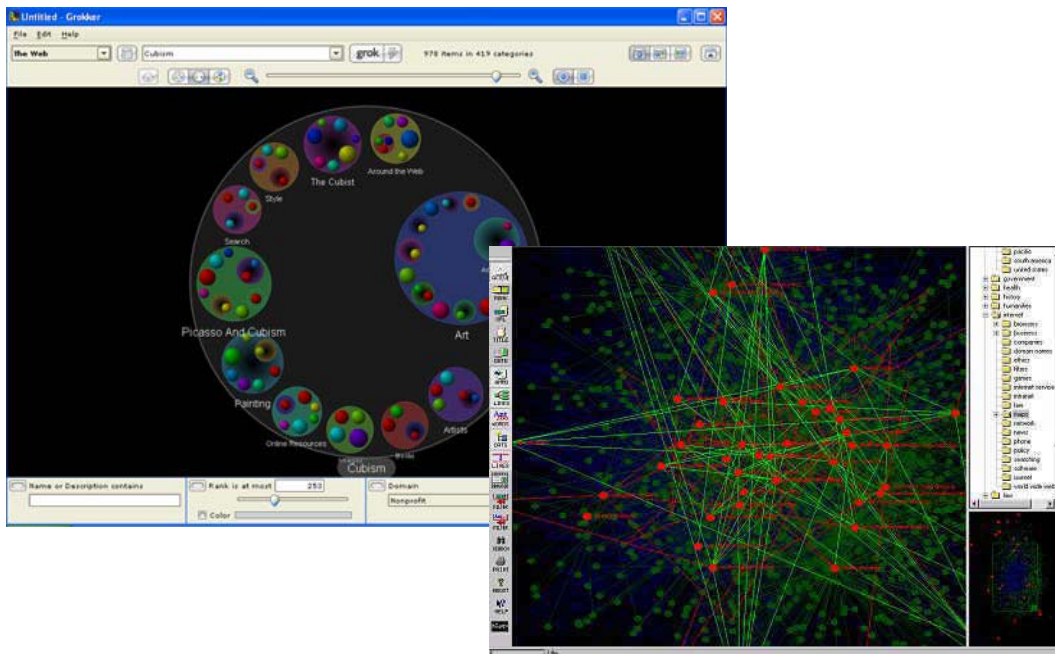


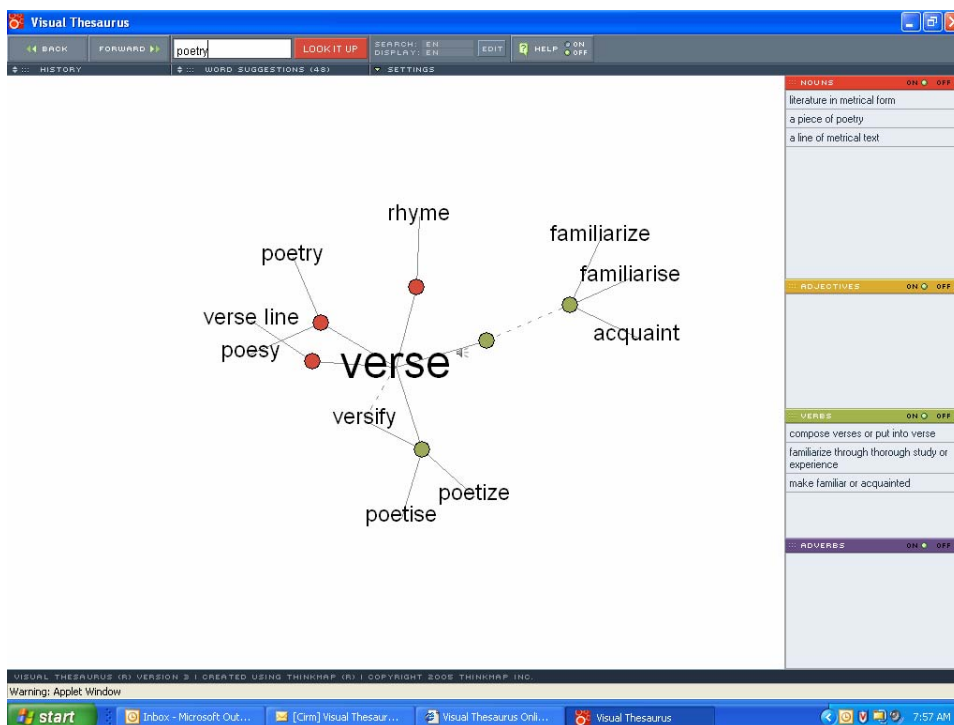
Figure 5.1. Sample Visual Interfaces with Internet Searches.

Visual search engines use one of two basic approaches to organizing information. One option is to use pre-assigned metadata such as library cataloging data, thesaurus-based controlled vocabularies, or numerical classifications such as concept codes or even Dewey Decimal numbers. The second method is to use statistical or linguistic algorithms that process data and order the results at the time of the search.

Visual search engines and interfaces are not limited to Internet searches. Several library vendors such as Dynix are investigating visual interfaces for library catalogs, and new products are coming to market that use visual displays to communicate information. The **Visual Thesaurus** from ThinkMap, Inc. (shown in Figure 5.2) is essentially an electronic reference book that shows words in relation to each other with side bar definitions, grammatical queues, and even a pronunciation link for the searched term.

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**Figure 5.2. Visual Thesaurus.**

In the Figure 5.2 illustration, the word “verse” demonstrates the value of a visual presentation. Not only do users see related terms such as the nouns poetry or rhyme, they also see an entirely separate connecting branch that shows a different meaning to the word (being well-versed or acquainted with something). Color is used to distinguish between nouns and verbs. Each word can in turn be searched by a simple click. The power and value of this technology as a learning resource seems clear. Some e-book publishers such as OCLC are working with visualization vendors to develop or enhance products.

Whether visual search interfaces will eventually replace text-based interfaces or be added on as an alternative display is still uncertain. Visual interfaces require more screen space to display data in meaningful ways, and while vendors are providing improved and larger screens for desktop and laptop displays, there is also the contrary trend of extremely small screen displays on PDAs, smart phones, and similar devices. It seems likely that the two trends will coexist for the foreseeable future. Some key vendors in visualization technology at this time are Vivisimo, inxight, xrefer, Antarctica Systems, Groxis, MediaLab, and KartOO. All these companies have web sites where their products can be seen.

## Digital Audio Books, e-Books, and Digital Rights Management

Audio books – voice recordings of books – have been around for many years and have

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reflected the recording technologies of the day. With recent advances in digital streaming technologies and accompanying improvements in digital rights management, we can expect to see a proliferation of downloadable digital audio books in MP3 format that can be transmitted or streamed over the Internet from a network server to a person's computer. With the pre-existing popularity of MP3 players for music, this market seems poised to expand, reach far more people than ever before, and cross over from popular to academic titles.

Over the years, audio book publishers have built an \$800 million business using a variety of recording and playback technologies: phonograph records, magnetic tape, CDs, and DVDs. In all these cases, the audio book remained a physical object that required playback equipment. For libraries who distributed audio books, this meant that special shelving or displays were required to hold the records, tapes, or CDs, and often that playback equipment had to be provided and maintained.

Today a number of companies are using network and streaming technologies to distribute e-books and audio books. For Sinclair Community College, the key academic e-book publishers are NetLibrary, Safari Books, Oxford University Press, and ABC-Clio. Each of these vendors distributes text-based e-books using various business models. They may or may not require special readers. NetLibrary and Safari, for example, publish their books using Adobe® Reader® software while Oxford is publishing its works in HTML or XML code. Sometimes these books are displayed a page at a time. In other cases, the entire book can be downloaded to a local computer (as shown in Figure 5.3).

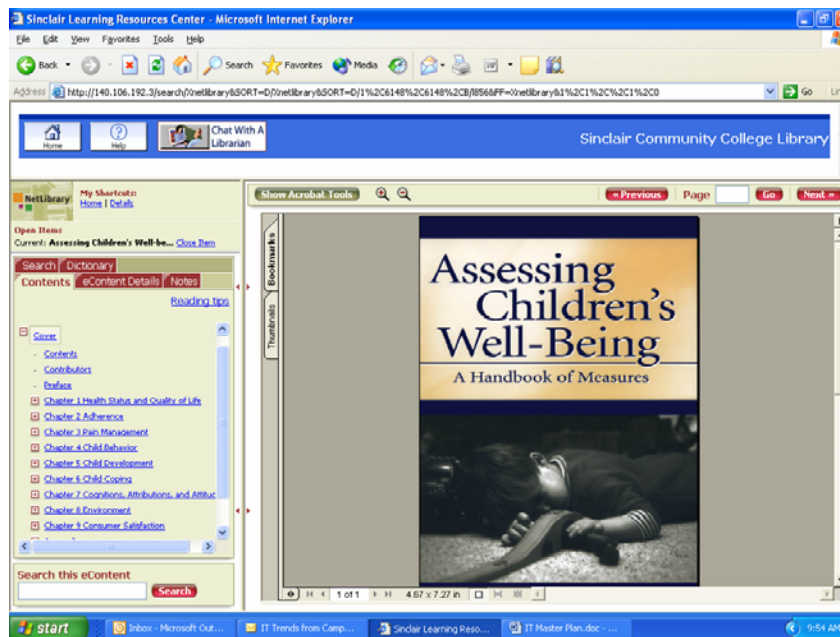


Figure 5.3. Downloaded e-Book.

Downloadable audio books work in a manner similar to e-books. The user identifies a

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title and orders it online. Depending on the publisher, the work may be downloaded in its entirety or in segments to a local computer. Special software may be required. Examples for NetLibrary audio books include Microsoft Windows Media Player 9 or 10, MusicMatch Jukebox 8.2, or Nullsoft Winamp 5. PayPerListen.com recommends Windows Media Player or itunes. Overdrive Audio Books distributes a special Overdrive Media Console to manage its titles on a PC, but it also relies on Windows Media Player to actually play back the audio book.

Audio books can also be downloaded or transferred to portable devices. The most well known such device may be the Apple ipod, but many vendors produce portable MP3 devices. Examples include Audiovox, Dell, Gateway, MobiBLU, RCA, Samsung, and SanDisk, three of which are shown in Figure 5.4.



**Figure 5.4. Portable Audio Devices.**

A key factor in the expansion of downloadable digital audio books is the advancement of digital rights management software. For publishers to be able to distribute audio books over the Internet, they need to know that their market is secure and their books will not be copied and given away. Rights management software protects titles from unlicensed copying and distribution. The Apple ipod illustrates this issue. As of Spring 2005, NetLibrary and some other publishers will not download audio books to an ipod because this Apple product does not have rights management software.

In the library setting, digital rights management software will make it possible for the library to “lend” audio books to Sinclair students, faculty, or staff members. It will work just like a traditional printed library book. The student borrows the book on the library account and at the end of the 21 day loan period, the student either renews the loan or the book will expire and become unreadable. After it expires, the user simply deletes it from his PC or portable device.

Whether downloadable audio book or e-book, the student wins by having improved access to information content. She does not have to travel to campus and go to the library to check out an audio book; it is online twenty-four hours a day. The library wins because it does not have the costs of storage and maintenance of physical objects. As

more popular and academic titles are added to the various publisher offerings, it appears that audio books and e-books will prove a win-win technology for libraries.

## Multi-factor Authentication

Sinclair students, faculty, and staff are increasingly reliant on information technology, and particularly on Web services such as the My.Sinclair portal, the student email application, and the Web Advisor Colleague interface. While these applications greatly improve customer service and contribute to student and institution success, the distributed ‘*anywhere, anytime*’ access they provide also makes them susceptible to ‘*anyone*’ access. Any user connected to the Internet who can provide the credentials of the legitimate user can access the applications and the information within them. Verifying the user’s credentials within the system is a process known as authentication.

Currently, each of Sinclair’s Web-based applications is a stand-alone application that provides services and access to the individual user only after they authenticate—via login ID and password—to their account within the individual application. Each application may or may not have the same user ID and/or password, but each requires a separate login that serves as an additional barrier to fraudulent use. My.sinclair, email, and WebAdvisor users must remember their login IDs and different passwords for each. However, as the Web-based portal concept matures, each application a user has access to will be added to the my.sinclair portal. When the user authenticates to the portal, a single-sign-on credentialing process will provide access to all of the applications within the portal. In other words, the user will have one login ID and one password that provides access to all of their information systems accounts—application authentication barriers are bypassed.

While single-sign-on makes things extremely convenient for the user, it makes it nearly as convenient for an attacker. Since all applications are accessed through a single Web interface, the security of the collective applications hinges on a single authentication method. This makes it imperative that Sinclair implements authentication methods that are robust and secure; user ID and password/PIN (Personal Identification Number) schemes do not provide adequate safeguards.

The basic goal of authentication is to confirm an information system user’s identity—to prove the user is who they claim to be. Techniques for authentication are usually broken down into three categories or factors: (1) something the user *knows*, such as a password or PIN; (2) something the user *has*, such as a smart card or ATM card; and (3) something the user physically *is*, such as a fingerprint or iris. The strongest authentication involves a combination of all three factors, but the most common approach (and the least secure) is a login ID secured via the one-factor something the user knows—a PIN/password.

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Numerous strategies and technologies exist or are in development to provide more secure and reliable two-factor or multi-factor authentication. Currently, the most prevalent and acceptable two-factor approach is *something you have* combined with *something you know*. For remote user authentication, this generally consists of a 'token' the user has and a password/PIN. Two common types of tokens are USB tokens and code generating time-synchronous tokens. USB tokens require the user to insert the device into a USB port and enter a PIN the user knows. The identification credentials are secured (encrypted) within the token and these credentials are transmitted to the host system with the PIN for verification. The code generating tokens generate a one-time code at specified intervals (usually 1 minute) that is synchronized with the host server. The user combines their PIN/Password with the code generated by the token for access. Both of these technologies are secure and can currently be implemented to support both local and remote user authentication.

Smart-cards are another two-factor authentication option. Current technology utilizes card readers in or near the machine to read the 'something you have' and the user then enters a password or PIN. The prime disadvantage to smart cards is they currently are only effective within the institutions environment. Card readers on PCs are not ubiquitous or standardized; remote access capability is minimal. Technology in development is attempting to combine the benefits of smart cards with radio frequency identification (RFID) technology to increase the usability and security of the cards, but the remote access issues have as yet not been adequately addressed.

The other most widespread two-factor approach is the *something you are* combined with *something you know* approach. This is commonly known as biometrics. Biometric technology involves matching stored profiles of the user's fingerprint, face, hand, palm-print, iris, retina, speech, or even DNA, and then requiring a password or PIN to complete the authentication. The primary drawbacks to biometric authentication are cost, remote access limitations, and user acceptance. Biometric authentication requires the client PC/device to have a device able to read the biometric image; these devices are expensive and are not in widespread use. User acceptance is also a major issue as people do not readily accept surrendering 'who they are' information.

As information security and information privacy concerns continue to grow, Sinclair must explore and implement a more robust authentication method. The Information Technology division will continue to research, recommend and implement the most effective and efficient technology solution available to endeavor to meet the need.

## Unified Communications

Most people are connected to others through many different channels of electronic communication. As the number of channels increases and the reliance on those channels increases, it becomes more and more difficult for a person to use all of the individual systems in an efficient manner. Unified Communication refers to the

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merging, consolidation, and integration of, as well as the interaction between, technologies that are used for all types of communication. The communication channels that are converging within Unified Communications are:

- Live voice call handling;
- Voice, fax and email message handling;
- Calendar scheduling, and Personal Information Management;
- Voice and web video conferencing, and collaboration; and
- Real-time Instant Messaging.

A Unified Communication system provides message management functions that can be performed by an individual on all types of media as well as transactional processes that emulate a human user. With unified communication an individual reduces the number of places that they have to check for and respond to messages. From a single interface a person can check for messages of all types. For instance, a person could view a list of voice messages and emails combined on the same screen. Conversely, that person could listen to those same messages via a telephone interface.

Unified communication can also provide service to customers through more channels than have been available in the past. Examples of this include providing voice activated access to transactions such as registration or grade reporting. The difference between how current systems provide these capabilities and the way they are done with unified communication is that they are closer to simulating human interaction. The user would be able to speak their choices rather than pressing buttons on a phone. They also would be able to have information read to them that would normally be presented on a screen.

While unified communication systems have been conceptualized for many years, they are only now becoming a reality due to the standardization of applications and communication protocols brought on by the growth of the Internet. Today, systems that are proprietary and do not utilize Internet standards can not succeed due to market pressures. Therefore, systems are being built using similar technologies so they are much more easily tied together. Changes in technologies both inside and external to Sinclair that will enable a move to unified communication include:

- Continued addition of wireless Internet Protocol (IP) communication capability into cell phones, PDAs, laptops, and other personal electronic devices;
- Expansion of the campus network to include pervasive wireless as well as wired connectivity;
- Migration of phone switching technology from legacy stand-alone voice infrastructures to delivering voice over IP;
- The ability to provide stable, secure access to the converged multi-purpose network;

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- Continued increase in the capability to digitize and store all types of communication assets; and
- Enhancements in individual communication systems that provide interfaces into other systems.

## Desktop Videoconferencing

Videoconferencing provides synchronous audio and video communication over some type of telecommunication medium. The technology originated in stand-alone hardware that was proprietary and expensive, and many times required special-purpose telecommunication lines for connectivity. Desktop video conferencing is the ability to participate in a video conference from an individual's desk rather than using schedulable rooms that contain the equipment.

The initial products that entered the desktop video conferencing arena were more reasonably priced. However, they were lacking in their dependability, and they were vulnerable to security problems created due to their use of un-secureable communication protocols. Over the last 10 years the capability to perform video conferencing over enterprise networks and the commodity Internet has improved to the point that this technology is more reliable and secure.

There are many ways that desktop videoconferencing is performed. Some use traditional hardware solutions on a smaller scale. There are videophone products from vendors that double as normal telephone, but also have a screen to see the person on the other end. There are web-based products that integrate Web conferencing or voice over IP with video and file-sharing capabilities. And there are desktop systems integrated with IP PBX systems where IP phones integrated with PCs or IP phones equipped with displays support both audio- and videoconferencing capabilities, with telephone-like functionality. There are also service providers that offer proprietary software that can be used with a PC, equipped with camera and microphone along with an Internet connection, to support multiuser conferencing (audio, video, file sharing, whiteboarding, etc.).

With all of the different technologies and methods of providing desktop videoconferencing it is very important to understand the unique requirements of any implementation. Otherwise, the system that is implemented could end up not providing important capabilities. Some of the factors to be considered include:

- What type of telecommunication infrastructure connects all of the end-points that will participate in the video conferences?
- How many desktop users need to be supported (both concurrently and maximum), and how many are in a central location versus remote locations?

- What existing equipment needs to be integrated into the system, including cameras, phones, projectors, TVs, etc.?
- What features and capabilities are needed (such as file sharing, file transfer, whiteboarding, etc.)?
- What is the frequency of utilization for users of the videoconferencing application?
- Is there any need to provide videoconferencing capability to mobile users?

## Learning Objects

Learning objects are defined as "modular digital resources, uniquely identified and meta-tagged, that can be used to support learning. The main idea of 'learning objects' is to break educational content down into small chunks that can be reused in various learning environments, in the spirit of object-oriented programming" (Wiley).

While the concept of learning objects has been promoted for several years, it has not experienced a significant level of acceptance within the higher-education community. Some factors contributing to this slow rate of adoption are a perceived dearth of quality content available in modularized form and a belief that learning objects are much more applicable to a training environment rather than to a higher-education setting.

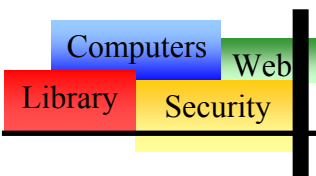
Technological trends suggest that learning objects will command in the future a much larger role in educational delivery. With the exponential growth of wireless devices and services, the infrastructure is evolving that will promote expanded use of learning objects via wireless device. Over 250 million mobile devices are projected to be sold world-wide this coming year. Consumers are rapidly becoming accustomed to using mobile devices as their selected portal to business and entertainment services. In countries such as Japan, mobile devices are already the preferred mode of internet access. It is a natural step to anticipate that the delivery and use of learning objects on mobile devices is a wave of the future.

## Digital Dashboard

As defined by searchCIO.com, digital dashboards have characteristics of "a user interface that, somewhat resembling an automobile's dashboard organizes and presents information in a way that is easy to read. Dashboards might obtain information from the local operating system in a computer, from one or more applications that may be running, and from one or more remote sites on the Web and present it as though it all came from the same source."

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Organizations adhering to knowledge-based decision making have a natural affinity for adopting digital dashboard technology. The dashboards offer such organizations a concise, yet rich, snapshot of critical performance measures. When the dashboard display is coupled with the ability to “drill-down” on each dashboard element, managers have a powerful tool that allows them to quickly and easily dissect the multiple factors influencing performance. For dashboards to be successful, certain supporting technologies need to be in place. The most important of these is a data resource that accurately captures, organizes, and stores information relevant to business operations. Most organizations satisfy this requirement by implementing data warehouses and/or data marts.

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# Appendix A

## Glossary



**Access:** The technology choices available by which users can connect to the public data network at the level they demand or need (dial-up, cable, DSL, ISDN, wireless, etc.)

**Anti-virus Software:** Programs to detect and remove computer viruses. The simplest kind scans executable files and boot blocks for a list of known viruses. Others are constantly active, attempting to detect the actions of general classes of viruses. Anti-virus software must be regularly updated to be effective against the latest viruses as they are released and discovered.

**Authentication:** The process of verifying that an electronic identifier is correctly mapped to the person using it. Authentication may take a variety of forms and typically relies on one or more of the following:

- Something you know, such as a password;
- Something you have, such as a smartcard with a public-key certificate;
- Some personal attribute, evidenced by a retinal scan, fingerprint, or photo.

**B2B (business-to-business):** The exchange of products, services, or information between two or more businesses using networked technologies.

**B2C (business-to-consumer):** The exchange of products, services, or information between businesses and consumers over the Internet.

**Bandwidth:** The amount of data that can be transmitted in a given amount of time over a particular connection.

**bps:** Measurement of transmission speed - bits per second.

**Broadband:** High speed data transmission over which a single medium can carry several channels at once. DSL and cable modem service are broadband services.

**Business intelligence (BI):** A broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions. BI applications include the activities of decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining.

**Cable modem:** A device that enables a personal computer to be connected to a local cable TV line and receive and send data.

**Colleague Application/Database:** The application (developed by Datatel, Inc.) used by the College for Enterprise Resource Planning (ERP). It is a collection of software programs that tie all of the various diverse functions (student services, business operations, finance, HR, etc.) into a cohesive database.

**Course Management System (CMS):** See Learning Management System.

**Data Warehouse:** A database designed specifically to support decision-making (Business Intelligence). It is a data repository which may be populated from multiple sources, including multiple transaction-oriented databases.

**Data Base Management System (DBMS):** A complex set of programs that control the organization, storage and retrieval of data for many users; extensively used in business environments. Data is organized in fields, records and files. A database management system must also control the security of the database.

**Dial-up access (modem):** Refers to connecting to the Internet via a modem and standard telephone line. Maximum speed is 56 Kbps.

**Digital Subscriber Lines (DSL):** One of many variations of DSL, the most common of which is ADSL, asymmetric digital subscriber line service.

**Distributed computing:** An industry-standard software technology for setting up and managing computing and data exchange in a system of networked computers.

**Domain name:** The unique name that identifies an Internet site and its address.

**Digital Subscriber Line (DSL):** A technology which enables the ordinary copper component of telephone lines to carry data at rates much higher than ISDN. Maximum speed is 8 Mbps.

**Electronic business (e-Business):** The transformation of key business processes through the use of Internet technologies.

**Electronic commerce (e-Commerce):** Commercial and noncommercial transactions facilitated through the use of networked technologies, such as over the Worldwide Web.

**Electronic Mail Services/System (E-mail):** Any messaging system that depends on computing facilities to create, send, forward, reply to, transmit, store, hold, copy, download, display, view, read, or print computer records for purposes of asynchronous communication across computer network systems between or among individuals or groups, that is either explicitly denoted as a system for electronic mail; or is implicitly used for such purposes, including services such as electronic bulletin boards, listserves, and newsgroups.

**Electronic Data Interchange (EDI):** The transfer of data between companies using computer networks, such as the Internet.



**Electronic Mailbox:** A file (or folder) designated to a particular user on a particular computer in which received electronic mail messages are stored ready for the user to read them. Using the example `firstname.lastname@sinclair.edu`, “`firstname.lastname`” is the name of the user’s mailbox file on the mail server.

**Email Address:** The string used to specify the source or destination of an electronic mail message. A typical college e-mail address format is `firstname.lastname@sinclair.edu`.

**Email Distribution List:** A distribution list is a group of recipients, all gathered under one name, or address. A distribution list allows you to send a message to all of the recipients by entering just that one address. There are two common kinds of distribution lists: Personal Distribution Lists (stored on an individual’s PC) and Public Distribution Lists (server-based). See their individual definitions.

**Email Record/Email Message:** Any or several electronic computer records or messages created, sent, forwarded, replied to, transmitted, stored, held, copied, downloaded, displayed, viewed, read, or printed by one or several email systems or services. This definition of email records applies equally to the contents of such records and to transactional information associated with such records, such as headers, summaries, addresses, and addressees.

**Email Users:** Individual(s) who create, send, forward, reply to, transmit, store, hold, copy, download, display, view, read, or print email (with the aid of College email services). A (College) Email User is an individual who makes use of (College) email services. Receipt of email prior to actual viewing is excluded from this definition of “use” to the extent that the recipient does not have advance knowledge of the contents of the email record.

**Encrypted/Encryption:** Procedures using algorithms to encode or convert plain text into cipher-text to prevent any but the intended recipient from reading that data. There are many types of data encryption; they are the basis of network security.

**Enterprise Resource Planning (ERP):** A system that supports the planning and management of all the resources in an enterprise - a multi-module software system that supports enterprise resource planning. An ERP system typically includes a relational database and applications for managing purchasing, inventory, personnel, customer service, shipping, financial planning, and other important aspects of the business.

**Frame Relay:** Used for connecting local and wide area networks - can support data transfer at T-1 and T-3 speeds.

**Gigabits per second (Gbps):** A measurement of the rate of speed at which data is transferred (e.g., 1 Gbps equals 1 billion bits per second).

**Infrastructure:** The communication networks that connect users to a networked environment such as the Internet.

**Information Technology (IT):** The broad subject concerned with all forms of technology used to manage and process information electronically.

**Integrated Services Digital Network (ISDN):** A service that allows for higher data transmission speeds over telephone lines and is capable of handling at least two services over one line simultaneously (i.e., voice and fax or voice and data). Maximum speed is 128 Kbps.

**Internet Service Provider (ISP):** A company or organization that provides users with connectivity to the Internet.

**Kilobits per second (Kbps):** The rate of speed at which data is transferred (e.g., 1 Kbps equals 1,000 bits per second).

**Local Area Network (LAN):** A network of interconnected workstations that share the resources of a single processor or server within a relatively small geographic area, such as an office.

**Lightweight Directory Access Protocol (LDAP):** An online directory service protocol defined by the Internet Engineering Task Force (IETF) which is a simplification of Directory Access Protocol (DAP). An LDAP directory entry is a collection of attributes with a unique identifier, called a distinguished name (DN). The directory system is in a hierarchical structure.

**Learning Management System (LMS):** A software application or Web-based technology used to plan, implement, and assess a specific learning process. Typically, a learning management system provides an instructor with a way to create and deliver content, monitor student participation, and assess student performance. A learning management system may also provide students with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums. The Advanced Distributed Learning group, sponsored by the United States Department of Defense, has created a set of specifications called Shareable Content Object Reference Model (SCORM) to encourage the standardization of learning management systems.

**Letter or Mail Bomb:** An email message containing malicious code intended to do nefarious things to the recipient's computer or network. Also, to send, or urge others to send, massive amounts of electronic mail to a single system or person, with intent to crash or spam the recipient's system. Letter or Mail bombing is a serious offense and is not tolerated.

**List Owner:** Individual(s) who establish the scope and distribution of and perform the maintenance of email distribution lists.

**Malicious Code:** Code is a common term used to describe a set of instructions to a computer, also called program or software. Malicious code in general can be defined as “software which interferes with the normal operation of a computer system.” Another general definition might be “software which executes without the express consent of the user.” Common types of malicious code include viruses, Trojans, and worms.

**Megabits per second (Mbps):** A measurement of the rate of speed at which data is transferred (e.g., 1 Mbps equals 1 million bits per second).

**Mobile e-Commerce (m-Commerce):** Commercial and noncommercial transactions facilitated through the use of wireless networked devices.

**Microsoft Outlook:** The Microsoft “groupware” information management and communication software used by the college for email communication, group planning and scheduling, and contact/task management.

**Online Analytical Processing (OLAP):** A method of database indexing that enhances quick access to data, especially in queries calling for large quantities of data or viewing the data from many different aspects.

**Personal Distribution Lists:** These lists are created by individuals for their own use. Personal distribution list files are stored in the individual’s Personal Address Book. Personal Address Books usually reside on the individual’s hard drive (or a drive of their choice). These lists are called “Personal” as they should be created for personal (one person) use. Sinclair users are permitted to create and share the lists to facilitate group communication.

**Point Of Sale (POS):** The time and place in which a transaction is made. Point of sale computer systems include cash registers, optical scanners, magnetic card readers, and special terminals. Reading product tags, updating inventory, and checking credit are some of the operations performed at the point of sale.

**Privacy policy:** A statement by an organization describing the ways in which it collects, stores, and uses personal information gathered from citizens and consumers.

**Public Distribution Lists:** These are created by IT staff for use by all Sinclair users. The distribution list files are stored on the Exchange Mail server. These lists are called “Public” as they are designed to be available to all users. Use of these lists is for academic and administrative purposes only as misuse wastes system resources and can affect the entire College network.

**Role-based Access:** After official authentication, access to Information Technology resources is granted based on the individual's role at the institution. As an example, a faculty member would have access to a totally different set of resources than a student, and a Dean might have access to a greater set of resources than an individual faculty member.

**Server:** A computer that provides some service for other computers connected to it via a network. A mail server has a drive that hosts user electronic mailboxes and receives, stores, and sends email messages via the network.

**Spam or Spamming:** Electronic junk mail or junk newsgroup postings. Spam is generally email advertising for some product sent to a mailing list or newsgroup. Spamming is sending or transmitting these junk messages. Receipt of Spam is virtually impossible to control; Spamming to or from college email systems is strictly prohibited.

**Structured Query Language (SQL - pronounced SQL or Sequel):** A language used to create, maintain, and query relational databases. It is an ISO and ANSI standard. SQL uses regular English words for many of its commands, which makes it easy to use. It is often embedded within other programming languages.

**SQL Server:** A relational Database Management System (DBMS) supplied by Microsoft.

**T-1:** Point-to-point dedicated phone line connection. Maximum speed is 1.544 Mbps.

**T-3:** Point-to-point dedicated phone line connection. Maximum speed is 44.7 Mbps.

**Telecommunications:** Refers to all types of data transmission, from voice to video.

**Terabits per second (Tbps):** A measurement of the rate of speed at which data is transferred (e.g., 1 Tbps equals 1 trillion bits per second).

**User Interface (UI):** The means by which a user interacts with a computer. The interface includes input devices such as a keyboard, mouse, stylus, or microphone; the computer screen and what appears on it; the way commands are given, etc. With a command-line interface, only text appears on the screen, and the user must type in commands; with a graphical user interface, windows, mice, menus, and icons are used to communicate with the computer.

**Usage:** The extent to which business, government and household users utilize the Internet access and infrastructure available to them.

**User Login/Logon ID:** The string that, in conjunction with the password, identifies a user to the network. A typical college user ID consists of the user's first and last name separated by a period. As in "firstname.lastname".

**Virtual private network (VPN):** A private data network using the public telecommunication infrastructure with security procedures that maintain privacy.

**Virus:** A program or piece of code that generally executes without the user's knowledge and runs against their wishes. Most viruses are malicious in nature and can also replicate themselves. All computer viruses are man-made and vary in degree of danger. Even a simple virus that replicates itself without actually harming system files is dangerous because it quickly uses available memory and other resources. A more dangerous type of virus is one capable of transmitting across networks and mutating to bypass security systems.

**Wide Area Network (WAN):** A geographically dispersed telecommunication network.

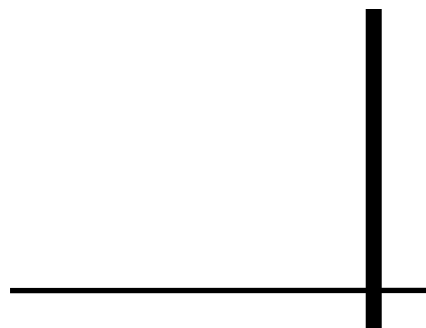
**Web Content Management System (WCMS):** A system or set of tools used to manage the content of a Website. Typically, a WCMS consists of two elements: the content management application and the content delivery application. The content management application allows the content manager or author, who may not know Hypertext Markup Language (HTML), to manage the creation, modification, and removal of content from a Website (via an intermediate database) without needing the expertise of a Web Developer. The delivery element uses and compiles that information along with predefined templates to generate web pages. The features of a WCMS system vary, but most include a data repository, format management, revision control, indexing, search, and retrieval.

**Wireless access:** A communications system in which radio-frequency or infrared waves carry a signal through the air, rather than along a wire.

**World Wide Web (WWW):** The system of Internet servers and users that support documents formatted in the HTML language.

# Appendix B

## Projects



## Information Technology Completed Projects 7/1/2004 - 3/31/2005

Department	Area	Project Number	Title	Status	Target End	Actual End
Information Security	Information Security Plan	100	CORE/Shared Information Team	Complete	10/01/2002	08/13/2004
Information Security	Information Security Plan	624	CSIRT establishment	Complete	10/01/2003	08/13/2004
Information Security	Information Security Plan	774	Formally establish administrative system security team	Complete	03/05/2004	08/13/2004
Information Security	I.T. Learning	313	Uniquery Training	Cancelled	10/01/2002	03/24/2005
Information Security	Other/Special Projects	555	Knowledge Management Exploration	Complete	06/30/2004	07/01/2004
Information Security	Other/Special Projects	877	2004 Audit, Crowe-Chizek	Complete	10/01/2004	01/14/2005
Information Security	Other/Special Projects	911	Information Systems Security Association (ISSA) Chapter formation	Complete	03/08/2005	01/28/2005
Information Security	Security Awareness	882	Security Awareness Brochure/Pamphlet	Complete	10/04/2004	03/24/2005
Information Security	Security Awareness	892	CWLD Cybersecurity Presentation	Complete	10/11/2004	11/11/2004
Information Security	Security Awareness	1008	Identity Management Presentation	Complete	03/04/2005	03/04/2005
Information Technology Services	Computer Operations	980	Resolve remaining issues with computer room AC and Power upgrade	Complete	07/31/2005	01/28/2005
Information Technology Services	Documentation	879	Microsoft Exchange and Office 2003 upgrade communication	Complete	11/30/2004	01/28/2005
Information Technology Services	Media Services	341	Bldg. 12 Auditorium sound system upgrade	Complete	06/01/2004	11/24/2004
Information Technology Services	Media Services	824	18 Multimedia Classrooms -- Summer 2004	Complete	09/03/2004	09/10/2004
Information Technology Services	Media Services	857	CIL Exhibit Issues: Identify/Document	Complete	10/15/2004	09/22/2004
Information Technology Services	Media Services	868	Reduction of Deliverable Equipment for Classrooms	Complete	09/15/2004	09/15/2004
Information Technology Services	Other/Special Projects	640	Active Directory Native Mode	Complete	05/30/2004	03/23/2005
Information Technology Services	Other/Special Projects	641	Windows 2000 Administrator Account Password Changes	Complete	05/30/2004	07/11/2004
Information Technology Services	Other/Special Projects	840	SAN Upgrade	Complete	08/30/2004	10/31/2004
Information Technology Services	Other/Special Projects	841	Net Backup	Complete	08/30/2004	03/09/2005

Information Technology Services	Other/Special Projects	843	ASM Planning	Complete	08/30/2004	11/10/2004
Information Technology Services	Other/Special Projects	844	SOT Replacement	Complete	09/16/2004	10/25/2004
Information Technology Services	Other/Special Projects	860	Office 2003 Upgrade	Complete	01/30/2005	02/23/2005
Information Technology Services	Other/Special Projects	869	Infrastructure Upgrade	Complete	12/31/2004	10/28/2004
Information Technology Services	Other/Special Projects	896	Update ITS equipment budget information for budget office	Complete	01/07/2005	01/04/2005
Information Technology Services	Other/Special Projects	994	Communicoach - SQL 2000 Upsize	Complete	04/01/2005	03/23/2005
Information Technology Services	Policies & Procedures	695	Business Continuity Plan Updates	Complete	05/01/2004	07/09/2004
Information Technology Services	Policies & Procedures	723	Infolink PCs and Podium Instructions	Complete	04/15/2004	10/07/2004
Information Technology Services	Policies & Procedures	724	Updating Network Operations Documentation	Complete	05/30/2004	07/09/2004
Information Technology Services	Policies & Procedures	734	Generic Account Process	Complete	06/30/2004	07/08/2004
Information Technology Services	Policies & Procedures	745	Shared Drive Procedures and Documentation	Complete	04/30/2004	08/03/2004
Information Technology Services	Policies & Procedures	799	PDF Printing Documentation	Complete	04/30/2004	07/21/2004
Information Technology Services	Policies & Procedures	822	SUS Instructions	Complete	07/31/2004	07/08/2004
Information Technology Services	Policies & Procedures	855	Generating File Size Reports Instructions	Complete	08/31/2004	08/04/2004
Information Technology Services	Policies & Procedures	856	Media Services Equipment Reduction Article	Complete	09/30/2004	09/03/2004
Information Technology Services	Policies & Procedures	880	Update Citrix Information	Complete	10/15/2004	09/30/2004
Information Technology Services	Policies & Procedures	881	Update Intranet site and Repository	Complete	10/31/2004	09/27/2004
Information Technology Services	Policies & Procedures	890	Outlook and Related Documentation Updates	Complete	12/31/2004	01/25/2005
Information Technology Services	Policies & Procedures	1016	McAfee 8 Upgrade Documentation	Complete	04/30/2005	03/10/2005
Information Technology Services	Policies & Procedures	1022	Outlook Mailbox Move Documentation	Complete	04/15/2005	03/21/2005



Information Technology Services	Systems & Network Administration	451	Office 2000 SP3 Upgrade	Cancelled	05/30/2004	08/06/2004
Information Technology Services	Systems & Network Administration	521	Email Purging	Complete	06/01/2004	09/30/2004
Information Technology Services	Systems & Network Administration	526	Network Security	Cancelled	06/30/2004	08/06/2004
Information Technology Services	Systems & Network Administration	858	Wireless Implementation	Complete	12/30/2004	01/13/2005
Information Technology Services	Systems & Network Administration	859	Exchange 2003	Complete	12/31/2004	01/27/2005
Information Technology Services	Systems & Network Administration	862	BIS Sharepoint	Complete	10/01/2004	09/10/2004
Information Technology Services	Systems & Network Administration	863	Communicoach Installation	Complete	11/30/2004	12/30/2004
Information Technology Services	Systems & Network Administration	909	ASM Implementation - Phases I and II	Complete	02/15/2005	02/18/2005
Information Technology Services	Systems & Network Administration	910	XP256 Data Destruction	Complete	01/30/2005	02/07/2005
Information Technology Services	Systems & Network Administration	984	Upgrade Mail Relay Server	Complete	12/31/2004	12/19/2004
Information Technology Services	Systems & Network Administration	986	UNIX Server R&R	Complete	03/30/2005	03/23/2005
Information Technology Services	Systems & Network Administration	990	Server Load Ballancing	Complete	06/30/2005	03/24/2005
Information Technology Services	Systems & Network Administration	991	API Wizard Update	Complete	02/28/2005	02/23/2005
Information Technology Services	Systems & Network Administration	1005	Exchange 2003 - Phase 2	Complete	04/15/2005	03/24/2005
Information Technology Services	Systems & Network Administration	1006	Docutech Printer Replacement	Complete	03/15/2005	02/23/2005
Information Technology Services	Systems & Network Administration	1018	VirusScan 8.0 Upgrade	Complete	03/30/2005	03/08/2005
Information Technology Services	Technical Services	727	Update Business Continuity Plan , Add IT offices plan also	Complete	05/31/2004	08/06/2004
Information Technology Services	Technical Services	813	Out of School Youth - New labs created	Complete	09/30/2004	07/16/2004
Systems Development & Maintenance	Administrative Systems	488	Source Control Software Implementation	Complete	05/27/2003	07/09/2004
Systems Development & Maintenance	Administrative Systems	495	Options for separate GPA calculations	Complete	07/04/2003	11/18/2004

Systems Development & Maintenance	Administrative Systems	500	Pilot Test Colleague Graphical User Interface (M-ACTIVE)	Complete	02/15/2005	03/31/2005
Systems Development & Maintenance	Administrative Systems	503	Web Advisor - Grade Submission (MP0405) (M-ACTIVE)	Complete	03/17/2005	03/31/2005
Systems Development & Maintenance	Administrative Systems	725	Remove Prerequisite Exceptions	Complete	02/06/2004	07/01/2004
Systems Development & Maintenance	Administrative Systems	726	Master GPA (M-ACTIVE)	Complete	12/16/2003	03/28/2005
Systems Development & Maintenance	Administrative Systems	768	Migrate to Unidata 6.0 (MP0405)	Complete	08/01/2004	07/10/2004
Systems Development & Maintenance	Administrative Systems	773	Transition from Envision to Native indexing (M-ACTIVE)	Complete	12/01/2004	02/23/2005
Systems Development & Maintenance	Administrative Systems	796	POS Bankcard masking (M-ACTIVE)	Complete	04/30/2004	12/08/2004
Systems Development & Maintenance	Administrative Systems	834	DL Courses Added to Avg Class Size Calc	Complete	08/15/2004	08/15/2004
Systems Development & Maintenance	Administrative Systems	835	Math Prerequisite Two Year Limit (M-ON HOLD)	Cancelled	06/30/2005	03/24/2005
Systems Development & Maintenance	Administrative Systems	836	Math Prerequisite Rule Part Two (M-ON HOLD)	Cancelled	06/30/2005	03/24/2005
Systems Development & Maintenance	Administrative Systems	837	Language Lab Roster Loader	Complete	09/15/2004	09/13/2004
Systems Development & Maintenance	Administrative Systems	894	Colleague Server Replacement	Complete	11/01/2004	10/29/2004
Systems Development & Maintenance	Administrative Systems	919	W2 End of Year Coding & Testing (M-ACTIVE)	Complete	01/28/2005	01/27/2005
Systems Development & Maintenance	Administrative Systems	920	1098-T Leveling & Submission (M-ACTIVE)	Complete	01/30/2005	01/27/2005
Systems Development & Maintenance	Administrative Systems	921	DegreeCheck Implementation (M-ACTIVE)	Complete	01/30/2005	01/27/2005
Systems Development & Maintenance	Administrative Systems	923	Statement of Accounts (M-ACTIVE)	Complete	01/20/2005	01/20/2005
Systems Development & Maintenance	Administrative Systems	924	Annual Statement (M-ACTIVE)	Complete	01/10/2005	01/10/2005
Systems Development & Maintenance	Administrative Systems	977	Midas Server Upgrade (M-ACTIVE)	Complete	03/15/2005	03/23/2005
Systems Development & Maintenance	Administrative Systems	979	UPGRADING ONE CARD SYSTEM FROM 9.0 TO 9.1 (M-ACTIVE)	Complete	12/31/2004	12/15/2004
Systems Development & Maintenance	Administrative Systems	995	WebAdvisor Statement of Account for Term	Complete	03/31/2005	01/27/2005

Systems Development & Maintenance	Administrative Systems	996	RMI Logging	Complete	01/31/2005	01/31/2005
Systems Development & Maintenance	Administrative Systems	997	Colleague Web Reports Course Roster Excel Dump	Complete	01/31/2005	01/20/2005
Systems Development & Maintenance	Administrative Systems	1001	FACT's Tracking Screen	Complete	02/15/2005	02/23/2005
Systems Development & Maintenance	Database Admin. & Business Intelligence	501	Data Warehouse/Business Intelligence (MP0405)	Complete	12/31/2004	12/31/2004
Systems Development & Maintenance	Database Admin. & Business Intelligence	914	Data Warehouse/Setup and Implementation (MP0405)	Complete	12/31/2004	12/31/2004
Systems Development & Maintenance	Web Systems	513	Professional Development Registration	Complete	06/27/2003	11/15/2004
Systems Development & Maintenance	Web Systems	704	Vote - Staff Senate	Complete	02/27/2004	11/15/2004
Systems Development & Maintenance	Web Systems	828	SSP server setup & Migration	Complete	11/15/2004	11/15/2004

**Information Technology**  
**Targeted for Completion 4/1/2005 - 6/30/2005**

<b>Department</b>	<b>Area</b>	<b>Status</b>	<b>Project Number</b>	<b>Title</b>	<b>Target End</b>	<b>Actual End</b>
Information Technology Services	Computer Operations	In-Process	864	Enhancements to Openview	06/30/2005	
Information Technology Services	Media Services	In-Process	907	Upgrade CIL Multimedia Rooms	06/30/2005	
Information Technology Services	Media Services	In-Process	931	Create survey to determine appropriate channels for Cable TV system	06/01/2005	
Information Technology Services	Media Services	In-Process	934	Investigate ways to expand Cable TV system	06/01/2005	
Information Technology Services	Other/Special Projects	In-Process	842	Project Management Program	05/01/2005	
Information Technology Services	Policies & Procedures	In-Process	833	Update Network Operations and Business Continuity Plan documentation.	05/31/2005	
Information Technology Services	Policies & Procedures	In-Process	846	IT Funding & Grant Research	06/30/2005	
Information Technology Services	Policies & Procedures	In-Process	847	Promote/Refine IT Policies & Procedures Page and IT Repository	06/30/2005	
Information Technology Services	Policies & Procedures	In-Process	854	Research future technologies and update portions of ITS page.	06/30/2005	
Information Technology Services	Policies & Procedures	In-Process	982	Single Sign On Documentation and Communication	04/30/2005	
Information Technology Services	Policies & Procedures	In-Process	1015	Exchange/Office 2003 Upgrade Survey	04/30/2005	
Information Technology Services	Policies & Procedures	In-Process	1023	PC Inventory Processes Documentation	05/31/2005	
Information Technology Services	Systems & Network Administration	In-Process	899	Magic Pilot for Facilities	06/30/2005	
Information Technology Services	Systems & Network Administration	In-Process	900	Server R&R 2004-2005	04/15/2005	
Information Technology Services	Systems & Network Administration	In-Process	901	Streaming Media Pilot	04/01/2005	
Information Technology Services	Systems & Network Administration	In-Process	902	Infrastructure Upgrade - Part 2	05/01/2005	

Information Technology Services	Systems & Network Administration	In-Process	903	Improved Image Updating	06/01/2005	
Information Technology Services	Systems & Network Administration	In-Process	904	Server Image Standardization	04/01/2005	
Information Technology Services	Systems & Network Administration	In-Process	905	Bookstore POS Replacement - Pilot	05/01/2005	
Information Technology Services	Systems & Network Administration	In-Process	987	UNIX server Disaster Recovery	05/31/2005	
Information Technology Services	Systems & Network Administration	In-Process	1019	Lab PC Locking	06/30/2005	
Information Technology Services	Systems & Network Administration	In-Process	1024	Windows XP SP2	06/30/2005	
Information Technology Services	Systems & Network Administration	In-Process	1026	Altiris Training	05/01/2005	
Information Technology Services	Systems & Network Administration	In-Process	1027	ASM - Phase 111	06/01/2005	
Information Technology Services	Systems & Network Administration	In-Process	1028	Exchange 2003 - Phase 3	05/15/2005	
Information Technology Services	Systems & Network Administration	In-Process	1029	Charles Disk Upgrade	06/01/2005	
Information Technology Services	Systems & Network Administration	In-Process	1030	Campus Switch Audit	06/01/2005	
Information Technology Services	Technical Services	In-Process	865	Lab PC R and R	06/30/2005	
Information Technology Services	Technical Services	In-Process	866	Laptop R and R	06/30/2005	
Information Technology Services	Technical Services	In-Process	867	Printer R and R	06/30/2005	
Information Technology Services	Technical Services	In-Process	912	Explore PC Surplus options available	05/30/2005	
Information Technology Services	Voice & Data Communications	In-Process	493	Call Acctg. Reports To Be Exported to Dept.	04/30/2005	
Information Technology Services	Voice & Data Communications	In-Process	983	Phone Room Computer Resource review	04/15/2005	
Information Technology Services	Voice & Data Communications	In-Process	992	Regional Development Model	04/15/2005	
Systems Development & Maintenance	Administrative Systems	In-Process	469	Bursar POS Replacement (M-ACTIVE)	05/30/2005	

Systems Development & Maintenance	Administrative Systems	In-Process	496	Faculty Contract/Payroll Sheet Process (MP0405) (M-ACTIVE)	06/30/2005	
Systems Development & Maintenance	Administrative Systems	In-Process	499	Colleague - Sponsor Billing Review & Evaluation (MP0405) (M-ACTIVE)	06/30/2005	
Systems Development & Maintenance	Administrative Systems	In-Process	718	Develop Test Plan for Sponsor Billing/FA Transmittal (M-REMOVED)	06/30/2005	
Systems Development & Maintenance	Administrative Systems	In-Process	767	One Remote (M-ACTIVE)	06/30/2005	
Systems Development & Maintenance	Administrative Systems	In-Process	830	CAS Interface Development (MP0405) (M-ACTIVE)	04/15/2005	
Systems Development & Maintenance	Administrative Systems	In-Process	895	Single Sign On (SSO) Implementation (MP0405) (M-ACTIVE)	06/30/2005	
Systems Development & Maintenance	Administrative Systems	In-Process	915	Implement Revised Program/Major Code (MP0405) (M-ACTIVE)	06/30/2005	
Systems Development & Maintenance	Administrative Systems	In-Process	917	Web-Based college catalog (MP0405) (M-ACTIVE)	06/30/2005	
Systems Development & Maintenance	Database Admin. & Business Intelligence	In-Process	1009	Program Review Reporting and Analysis	06/30/2005	
Systems Development & Maintenance	Database Admin. & Business Intelligence	In-Process	1011	Admissions Reporting and Analysis	04/21/2005	
Systems Development & Maintenance	Database Admin. & Business Intelligence	In-Process	1014	Identify Duplicate Person Records	04/05/2005	
Systems Development & Maintenance	Other/Special Projects	In-Process	746	Project Database Housekeeping (M-ACTIVE)	06/30/2005	
Systems Development & Maintenance	Web Systems	In-Process	506	Course Availability System (CAS) (MP0405) (M-ACTIVE)	04/15/2005	
Systems Development & Maintenance	Web Systems	In-Process	556	Curriculum Development System V1.0 (MP0405) (M-ACTIVE)	06/30/2005	
Systems Development & Maintenance	Web Systems	In-Process	926	WBAPM - Web Based Academic Program Management (M-NOT RANKED)	06/30/2005	