Imperial Valley College District
Technology Master Plan

I. Summary

This Technology Master Plan provides clear focus and direction for the development of technology and related resources at Imperial Valley College for the three years of 2006 – 2009. The vision is three-fold: to serve instruction, to support expansion, and to maintain day-to-day campus operations. The fundamental goals presented in this plan are:

Goal #1: Providing the best possible computing environment and classroom technology solutions, within reasonable budgetary limits, for all faculty members, staff, and students.

Goal #2: Providing distance education support.

Goal #3: Ensuring the best effective use of the Banner ERP system.

Goal #4: Ensuring comprehensive faculty and staff training.

Goal #5: Implementing the campus technology modernization plan.

Goal #6: Developing, reviewing, and revising technology related policies and procedures on a regular basis.

II. Background

The first official technology plan developed by Imperial Valley College was created during the academic year 1998-1999. Incredibly, at this time IVC was making the transition from a 56K modem connection to a bona fide T1 line, with the hope of taking fuller advantage of the World Wide Web and networked computing on campus. The first Technology Committee was formed, and a dedicated group of "early adopters" attempted to guide the college in purposeful directions, determined to enhance our ability to provide quality education and services while taking fuller advantage of established and emerging technologies. Always slightly behind the curve, IVC back then had the advantage of learning from other community colleges and educational institutions as we sought to increase the effectiveness of our usage of technology while taking pains to avoid the errors and missteps of others.

IVC has come a long way in the past eight years. Always, the intention has been to employ technology to serve our educational missions. As a California Community College, our primary mission is offering "academic and vocational education at the lower division level for both recent high school graduates and those returning to school." The Chancellor's website continues: "Another primary mission is to advance California's economic growth

and global competitiveness through education, training, and services that contribute to continuous workforce development." These system-wide concerns are overseen and directed at the state level by the Board of Governors. But the Imperial Community College District establishes its own vision, mission, goals, and objectives through its own strategic planning process. And IVC has always striven to provide ample opportunities for its students, through the continual and continuing implementation of technology, as put forward by California's Master Plan for Higher Education.

Distance education at IVC has received particular attention. Four years ago, under the aegis of a $2.7 million Title V grant, Project ACCESSO was born. This project established training for faculty to develop and deliver online, hybrid, and web-enhanced courses. Each year, at least fifteen faculty members participate in a week-long Summer Technology Camp, where they study the basic pedagogical difference between face-to-face and online courses while learning how to use the ETUDES-NG course management system (CMS), how to design documents for online delivery, and how to produce rich-format documents and multimedia presentations. Specific training in software such as Microsoft PowerPoint, TechSmith Camtasia, Adobe Dreamweaver, tablet PCs, and Turnitin.com is also available. At the end of the training camp, participants are ready to begin the process of developing, administering, and utilizing online, hybrid, and web-enhanced courses. To date, ACCESSO has trained 57 faculty members who now offer 36 online courses, 4 hybrid courses, and 27 web-enhanced courses.

Additional training in all aspects of distance education is available throughout the year by the Instructional Media Designer and the Project ACCESO Academic Coordinators. This training is provided in two formats: one-on-one focused training sessions, where a qualified instructor works with a faculty member on a single area of course design, or larger peer-group workshops where a group of faculty work together in collaboration to solve problems and gain requisite skills.

ACCESO-supported distance education has evolved purposefully in four years, to the point where online education at IVC is thriving. Instructors have grown steadily more skilled at developing and teaching online classes, and students have expressed continued satisfaction with the program. The college, however, faces a challenge now that the Title V grant is set to expire at the end of the 2008-2009 academic year. Transitioning the grant-supported distance education program into the Instructional mainstream remains a top priority for the college.

Additional challenges come as IVC readies itself for the completion of the new bond-funded Science Building. Already, a new 1Gbit network cabling project has been completed on campus, which will provide the first step in assuring that adequate bandwidth is available. And as the CENIC backbone connection plans come to fruition, the Science Building will be assured of ample connectivity. These projects represent a quantum leap from the catch-as-catch-can technology efforts (cf. 56K modem connection less than 10 years ago) that characterized IVC's initial forays into the Information Age.

Since those early days at the turn of the last century, IVC has steadily increased its utilization of technology. Now, we offer online registration along with a wide range of distance education courses (which would have been impossible for us just a few short years ago). We have also become a Banner college that uses an industrial-strength database system to perform a wide range of mission-critical tasks. The fledgling Technology Committee created eight years ago later evolved into a collection of four groups that focused on instructional and administrative tasks (the former ITEC, ATAC, ITAC, and PTAC committees). In August of 2006, we created the Technology Council to consolidate those

committees into one over-arching shared-governance body. The Technology Council completed the development of the first substantive IVC Technology Master Plan in June of 2007. That plan addressed the goals and objectives for a three-year time frame starting with the 2007-2008 academic year, to include provisions for annual assessment reviews.

III. Vision

It goes without saying that technology drives education. Without adequate infrastructure, equipment, and support, a community college cannot effectively complete its mission. Responding to the present and future demands on our technology capabilities, IVC has clear priorities for the utilization and implementation of technology. Three principles guide technology planning: 1) technology supports instruction; 2) technology supports facilities expansion; and, 3) technology supports day-to-day general campus operations.

The current local economic picture is not entirely rosy, but our commitment to instructional technology will remain high. In conjunction with the Chancellor's Office Basic Skills Initiative (BSI), IVC will be developing and implementing programs to help students master basic skills in preparation for success at higher levels. IVC needs to look for opportunities to employ technology in meaningful ways to complement the BSI effort.

Ultimately, the IVC Technology Master Plan provides the college with a direction that correlates with the spirit of the institution's professed mission. The goals and objectives presented in this plan must remain focused on the primary concern of this mission "to foster excellence in education that challenges students of every background to develop their intellect, character, and abilities." Furthermore, technology utilization and implementation on campus must further two more aspects of the college's stated mission: "to assist student in achieving their educational and career goals," as well as "to be responsive to the greater community."

For years, despite a lack of requisite resources and struggles with cyclical budget crises, Imperial Valley College has nonetheless progressed. A scant nine years ago, the first Internet connection the college established was a 56K dial-up modem line to an ISP in El Centro. Since then, IVC has been moving forward steadily. A Distance Education program was established four years ago, which continues to grow year-by-year. The Banner system was adopted, and its power is utilized more purposefully all the time. An internal network cabling project was completed this year, also. Now, IVC has evolved to the point where today we stand on the brink of connecting to the CENIC backbone, with both new VoIP telephony and a new Science Building on the immediate horizon.

Guided by this three-part vision, IVC will continue to take advantage of technology, anticipating further exponential growth in our ability to serve the needs of instruction, to meet the needs of expanded facilities, and to enhance the power and efficiency of day-to-day college operations.

IV. Description of the Current Environment

The Information Technology (IT) Department successfully upgraded the Banner Enterprise Resource Planning (ERP) system from version 6 to version 7 in March of 2007, despite the difficulty due to the shortage of resources and experienced personnel in the IT area. In addition, a California-only special baseline release (CALB) was also installed with version 7 of Banner. The CALB release provides extra functionality in the Student Module to accommodate the registration and MIS report requirements imposed by the California Community College Chancellor's Office.

The ARGOS Reporting System (ARS) was purchased and deployed in June of 2007. The ARS connects to the Banner system and provides fast ad-hoc reporting capabilities for users who need to display Banner data in specific formats. A special interactive report application, "Class Scheduling," was developed to retrieve real-time registration information from the Banner database. This application helps the Student Services area (counselors) to provide course recommendations based on availability when they confer with students. This application also provides enrollment management data that the Deans and Division Chairs can use to manage last-minute class offerings and cancellations while also providing access to classroom availability and instructor assignment data. The Instruction Office and the Transfer Center also use this application to check the catalog contents, to include cross-listed courses.

The IT Department is also implementing the Campus Network Modernization Plan (CNMP) which was approved by the Board of Trustees at their May 2007 meeting. The CNMP covers the following work items: 1) upgrade of campus network cabling and data network switches; 2) replacement of voice-mail and upgrade of the telephone system; 3) implementation of a student email system; and, 4) implementation of a wireless network throughout all campus facilities.

The Technology Council completed a computer inventory survey followed by a detailed recommendation to the Planning and Budget Committee for a systematic capital replacement plan for the 2007-2008 academic year. This recommendation was approved, and $200,000.00 was set aside to purchase upgraded computers and other related equipment.

In addition, the IT department filled two key positions in July 2007: a Director of Application Services, and a Help Desk computer technician. Within the following year, two more critical personnel were added: a Webmaster, and a Director of Technical Services. Never in the history of IVC has so much expertise been gathered together in service of our technology goals and objectives.

V. Technology Master Plan Goals and Objectives

Goal #1: Providing the best possible computing environment and classroom technology solutions to all faculty members, staff, and students.

Considering the current technological state of affairs in this country, with colleges and universities relying more and more on networks and the Internet—and with technological convergence occurring rapidly—all students, faculty and staff to have access to the types of software and technological infrastructure they need to accomplish their goals. Replacing old computers and upgrading all classrooms to smart classrooms is critical. Computers are purchased dozens at a time, and care must be taken in assuring predefined specifications are met. Virtual desktop and virtual machine software have influenced the educational landscape, also. And looking off-campus, IVC must strengthen its technology ties to the Imperial County Office of Education in order to help sustain Imperial Valley College's ever-growing technology needs.

Objective 1A: Provide updated computing environment for faculty and students and ensure proper support.

Replacing outdated and underpowered computers that are incapable of operating today's commonly used software programs will guarantee a uniform computing environment on campus. Software for students as well as software for faculty and staff is continually being updated; therefore, it is necessary to update computers in both computer labs and offices.

The student computing labs are managed by the corresponding department. For example, the Math Lab is managed by the Math Department in the Science, Math, and Engineering Division, and the Computing Information Technology Department in the Business Division. The Divisions take the responsibility for the hardware upgrade following the recommendation of the Technology Council. Each Division also manages individually the instruction software purchase, upgrade, and installation, tailored to its special needs.

Moving forward, as the number of PC workstations grows, a centralized PC client management system should be used to simplify the setup, upgrade, trouble shooting, and software installation functions. The Information Technology Department is looking into the available systems on the market, and plans to do an evaluation to select the proper one for deploying into the IVC campus computing environment.

Action Items	Responsible Organization	Fiscal Impact	Funding Source	Status
1. Replace outdated PC hardware in the reading/writing labs and language labs.	Learning Services with assistance from Information Technology	Estimated cost for replacing 150 PCs: $180,000.	IELM fund and Basic Skills fund	Project completed in February 2007.
2. Replace outdated PCs in the library common area.	Library with assistance from	Estimated cost for replacing	IELM fund	Project completed in

	Information Technology	28 PCs: $33,600.		September 2007.
3. Replace outdated PCs in the library room 1502.	Library with assistance from Information Technology	Twenty recently purchased PCs in the R/W labs were moved to 1502.	N/A	Project completed in March 2007.
4. Replace outdated PCs for faculty and staff members.	Academic Divisions with assistance from Information Technology	Information Technology negotiates with PC vendor to obtain a discounted quote for desktop and laptop. The actual impact depends on the amount of PCs that need to be ordered.	Division IELM fund and Capital Equipment Replacement Fund	Ongoing
5. Replace outdated PC hardware in the student labs	Instructional Divisions	Division budget	Categorical and District funds	On going
6. Update instructional software on student computers	Instructional Divisions	Division budget	Categorical and District funds	On going
7. Evaluate PC client management system and select the proper one for deployment	Information Technology	TBD	District fund	TBD

Objective 1B: Install audio/visual equipment in all classrooms.

Ideally, all classrooms should be identical insofar as they are equipped with technology resources and enhancements. This allows faculty to enter any classroom they might be assigned and lecture in their preferred style. Offering faculty a wide array of presentation media equipment, in each classroom, gives instructors the necessary instructional modalities necessary to ensure quality of technology driven instruction.

Action Items	Responsible Organization	Fiscal Impact	Funding Source	Status
1. Install projection screen, video projector, VHS and DVD player, and audio speakers and amplifiers in each classroom.	Library A/V department	Materials and labor for each classroom is estimated at $4,000 each.	One time fund from IELM	# classrooms was completed in 2007.
2. Maintain the Audio/Video equipment; ensure all are in good working condition.	Library A/V department	Estimated annual budget is $5,000.00.	District fund	Ongoing

Objective 1C: Establish computer hardware standards for purchasing

Standardizing computer hardware can have several advantages. First of all, standardization allows the college to negotiate a volume discount with vendors. Secondly, it facilitates easy repair service since the support technicians from Information Technology have fewer variations in hardware to deal with; this also simplifies the process of securing spare parts. Thirdly, performing software error diagnostics is less complicated since standardization creates an environment that allows for straightforward comparison installations. Fourth, standardization makes system replication (ghosting) possible because the same core image will work on the same hardware configuration, and this will greatly speed up system configuration and recovery. It is clear that there is no "one size fits all" hardware configuration; therefore, Information Technology Department will select a range of different hardware configurations, each to a set of target operations. This process will also simplify and minimize the time each individual spends on researching the proper model to purchase. On occasion, due to various project or task needs, special purchases can be proposed to Information Technology for review and approval. The standardized configurations will be revised once a year to keep up with technology growth, as computers become faster and more powerful in order to handle software that demands more computing resources.

Action Items	Responsible Organization	Fiscal Impact	Funding Source	Status
1. Establish hardware standards for desktop and laptop computers based on input from Information Technology, and revise on an annual basis.	Technology Council, Information Technology	Leverage volume discount with PC vendors	Each organization purchasing the hardware	Review the hardware selection once a year.
2. Implement the centralized computer hardware purchasing to ensure compliance.	Information Technology and Fiscal Services	None	N/A	New policy to be implemented in Fall 2008.

Objective 1D: Establish and implement equipment replacement plan

Placing computer equipment replacement fund in our District budget keeps the focus on the importance of technology at our institution. Limiting or constraining all or some of the pieces that make technology work seamlessly on our campus will weaken and degrade what could otherwise be a healthy entity. The replacement of computer related hardware and software is both a technological benefit to the institution as well as a fiscal responsibility. Sufficient funding for such items bares the key to success. District as well as categorical budgets should be utilized as sources for such funding.

Although IVC currently does not employ a comprehensive funding procedure, the following five categories should be considered for funding computer related projects on an on-going basis:

1. Requesting computer related equipment for a new, permanent employee.
2. Requesting a technology review for a District funded project.
3. Requesting a technology review prior to the submission of a grant funding proposal, including the Instructional Equipment or Telecommunications State Grants or other noncompetitive grants.
4. Requesting an addition to the Information Technology computer equipment purchasing plan that does not fit into the above categories.
5. Requesting replacement of outdated computing equipment.

The cost effectiveness of each request will be considered by the Technology Council at regular intervals.

Action Items	Responsible Organization	Fiscal Impact	Funding Source	Status
1. Establish an inventory of old PCs to be replaced.	Technology Council subcommittee	Provide input to Fiscal Services to establish the capital replacement fund	District fund	Initial inventory completed in 2007.
2. Update the PC replacement inventory once a year	Technology Council subcommittee	Update input to the capital replacement fund	District fund	Inventory update for 2008 completed.

Objective 1E: Apply virtual desktop (NComputing) technology in the Reading/Writing Labs

The English Division has long anticipated at least one classroom fully equipped with networked computers that could be used for composition instruction. Other such rooms exist on campus, but they are not designated as classrooms (they serve as computer labs or as a resource room in the Library). One reason IVC has not built a classroom with computers for English: cost. However, new technology is not available that can help the college overcome the cost hurdle. NComputing offers a hardware solution that allows for seven or more students to access a network via one CPU. After testing this hardware extensively, IVC has decided to purchase enough units to equip 35 workstations to four CPUs. Once established, this classroom will be used primarily by the English Division, but it will be available to all Instructional areas on campus on a sign-up basis.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status

1. Feasibility study for applications used in the Reading/Writing Labs.	Edward Cesena	No equipment procurement cost, technician work time only	Get free evaluation units from the vendor	Feasibility study completed in 8/2008.
2. Deploy 35 units in the Reading/Writing Labs.	Edward Cesena	Estimated cost is $21,000	Funded by ACCESO	In progress, schedule to complete in December 2008.

Objective 1F: Implement VM Ware technology

Multiple operating system environments can provide students, faculty, and staff more flexibility in completing important tasks. Virtual machine (VM) technology will allow our computer science students to work on one computer yet access multiple operating systems on that single CPU. Also, VM technology allows for compatibility among programs that run on different operating systems while providing a significant cost savings.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Become familiar with the technology and its applications for use in the Technology Training Center.	Larry Valenzuela	Attending the VM World 2008 Conference 9/15-18/2008 ($1,059)	District fund	Approved by Superintendent/ President Dr. Gould.
2. Apply VMWare on the PC used in the Technology Training Center.	Larry Valenzuela	Obtain estimate from VMWare vendors, target completion date 12/2008	District fund	Target completion date 2/2009
3. Evaluate VMWare application in the core sever room hardware environment.	Information Technology	Using trial version, no fiscal impact	N/A	Evaluation is scheduled to begin in March 2009.
4. Determine selected applications to be put on the VMWare platform, and produce budget estimate for 09-10 fiscal year.	Information Technology	Using trial version, no fiscal impact	N/A	Evaluation is scheduled to complete in May 2009.

Objective 1G: Make a concerted effort to bridge common technology interests between IVC and ICOE

The Imperial County Office of Education (ICOE) is Imperial Valley's technology hub for Grades K-12. ICOE's technology staff has a breadth of knowledge and experience on many technology fronts ranging from deploying large area networks, wireless networks that span the county, and focused computer support.

In addition, ICOE is accomplished in the area of broadcasting recorded educational productions, producing video programs in their own studios, and providing an educational television channel. IVC can borrow from ICOE's expertise, and collaborate to reach students in grades K-12 classes.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Meeting with ICOE to determine feasible collaboration areas in Technology.	Robin Ying	None	N/A	TBD
2. Join the Technical Advisory Committee of the Imperial Valley Telecommunications Authority (IVTA).	Robin Ying	None	N/A	Dr. Robin Ying has joined the Technical Advisory Committee of IVTA starting 6/2008.

Goal #2: Providing distance education support.

ACCESO-supported distance education has evolved purposefully in four years, to the point where online education at IVC is thriving. Instructors have grown steadily more skilled at developing and teaching online classes, and students have expressed continued satisfaction with the program. The college, however, faces a challenge now that the Title V grant is set to expire at the end of the 2008-2009 academic year. Transitioning the grant-supported distance education program into the Instructional mainstream remains a top priority and challenging task for the college. The current online course management system, ETUDES, is being reviewed for its ability to adequately support the IVC's distance education program. In addition, improvements need to be made in network connectivity and bandwidth capacity as IVC's distance education program continues to grow.

Objective 2A: Build the CENIC fiber connection.

Imperial Valley College currently uses a shared connection provided by the ICOE/IVTA (Imperial County of Education/Imperial Valley Telecommunication Authority, a local JPA of public agencies) to the public Internet, with a 100Mb/s connection speed. The low bandwidth has been causing various problems for several of the online testing applications (such COMPASS and ReadingPlus) where the applications are hosted off campus.

This project is to build a direct fiber connection from the main campus of Imperial Valley College to the Level-3 facility in El Centro which is about 7.5 miles away where the CalREN

fiber passes through. The CalREN fiber connects San Diego to Yuma, and then extending to Tucson and Phoenix.

The dedicated fiber connection to the CalREN backbone can provide much faster connection speed which is critically needed for supporting the increasing traffic of the online education activities at Imperial Valley College.

Once the fiber link is up, the bandwidth usage needs to be monitored and reviewed on a bi-annual basis to ensure adequate support.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Request IVTA Board approval for IVTA to conduct initial engineering study.	Robin Ying	None	N/A	IVTA Board approved the request at the 7/6/2006 meeting.
2. Obtain funding from CENIC for the initial route engineering study and cost estimation for the entire project.	Robin Ying	Estimated initial route engineering study cost by IVTA was $6,000	CENIC	CENIC provided funding in 8/2006 for initial route engineering study
3. Obtain IVTA Board approval for constructing the fiber link.	Robin Ying	None.	N/A	IVTA Board approved the project at the 12/7/2007 meeting
4. Establish MOU between IVC and CCCTC for project funding.	Robin Ying, Frank Oswalt	None.	N/A	MOU established on 3/1/2008.
5. Obtain funding from CCCCO for the construction of the direct fiber link from the main campus to the CENIC network connection point at the El Centro Level-3 co-lo.	Robin Ying	Estimated construction cost for the 7.5-mile long fiber link is $180,000	CCC Technology Center	Funding was approved by CCCCO/CCCTC, and $180,758.63 was received on 4/22/2008.
6. Establish MOU between IVC and ICOE/IVTA including the IRU and on-going maintenance for the fiber link.	Robin Ying, Frank Oswalt	None.	N/A	MOU established and approved by the IVTA Board at the 5/1/2008 meeting.
7. Fiber link construction, testing, and turn on.	IVTA and IVC Information Technology	Fiber link will be maintained by IVTA as agreed upon in the MOU, no recurring cost to IVC	N/A	Target finishing date is 12/2008.

Objective 2B: Develop a contingency plan for distance education course management system

Four years ago, at the outset of the ACCESO Title V distance-education grant, the Course Management System of choice was ETUDES. Developed as a subset of the open-source Sakai project, ETUDES was determined to be sufficiently robust and extremely affordable, in comparison to the commercial products—Web CT and Blackboard—that were once under consideration at Imperial Valley College by Learning Services and the old Technology Committee.

The nerve-center of ETUDES development lies at Foothill College, and IVC has received a great deal of support and training from this source. In addition, development of the ETUDES Course Management System (CMS) is driven by technicians and programmers at Foothill. Recently, there has been a re-alignment of commitment at Foothill, centering on that college's willingness to continue to subsidize ETUDES development. Accordingly, IVC needs to develop a contingency plan in the event that ETUDES support is somehow compromised.

In light of budget issues, it would appear that the once-considered commercial products are still out of reach. However, strong and popular online CMS like the internationally renowned Moodle—also a free open-source program—could serve as a complement or a replacement for ETUDES, depending on circumstances. Most likely, IVC will continue to benefit from ETUDES support. But, just in case, a contingency plan needs to be developed that will allow IVC to make a smooth transition in the event of any changes in the ETUDES support and development situation.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Develop contingency plan to consider utilization of alternative online CMS in the possible event that the ETUDES might no longer be supported or available.	Gloria Carmona, Frank Rapp	TBD	District fund	In progress; target date for completion is Fall semester 2009

Objective 2C: Develop the transition plan for ending of the ACCESO project Title V grant

Imperial Valley Project ACCESO, the 2.7 million dollar Title V grant which helped develop IVC's distance education program and expanded the technology infrastructure of the college in numerous ways, will come to an end in September 2009. From Fall 2005 to Fall 2008, the percentage of distance education courses offered at IVC has increased by 1500%. A total of 7829 students have taken online classes, with 6722 of them (85.9%) being of Hispanic origin.

As the grant ends, we want to continue to build on its success. Hence, from now to that end point, a transition from grant funding to full district funding must take place. This

transition will require the full efforts of the ACCESO team members, the district representatives, and the IVC faculty bargaining unit.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Formalize ACCESO and our distance education advisory groups into a standing sub-committee under the Academic Senate.	Michael Heumann	None.	N/A	In progress; target date for completion is Fall 2009.
2. Determine support staff level in order to ensure a quality distance education program.	Gloria Carmona, Michael Heumann, Frank Rapp	TBD	District fund	In progress; target date for completion is Fall 2009
3. Allocate fund to continue supports in technologies and faculty training.	Frank Rapp	TBD	District fund	In progress; target is to include it in the 09-10 fiscal year budget.

Goal #3: Ensuring the best effective use of the Banner ERP system.

Imperial Valley College purchased the Banner ERP system in 2003, completed the migration, and went live in the spring semester of 2005. IVC has acquired four modules: Human Resources, Finance, Financial Aid, and Student. All four modules are currently functioning but not all the purchased features are turned on yet. We have implemented XtenderSolutions and Fixed Asset, and IVC is currently working on the Employee Self Service system. We also plan to implement Position Control and Payroll systems in the coming years. Banner is a highly integrated system. Not until all the related modules are implemented can we benefit fully from the built-in referential integrity and ensure the data quality.

Objective 3A: Maintain the Banner system

The Banner system requires regular maintenance and upgrades in order to stay current with the new releases. The core system maintenance work includes regular upgrading of the Financial Aid module to comply with the Federal and State regulation changes in the student Financial Aid area.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Maintain up-to-date Financial Aid module upgrade to comply with Federal and State changes in the student financial aid regulations	Jeff Cantwell	Training cost for performing Financial Aid module upgrade	District fund	Training completed in 4/2006.

2. Increase Banner server disk storage capacity and add one additional INB server for version 7 upgrade work	Robin Ying	Estimated total hardware purchasing cost was $37,000	District fund	Hardware purchasing completed in 8/2006.
3. Perform Banner version 6 to version 7 upgrade on TEST instance	Robin Ying Jeff Cantwell	Remote DBA support from SunGard Higher Education; estimated cost $5,000.	District fund	TEST instance upgrade completed on 11/1/2006. Remote DBA support actual cost was $540.
4. Install CALB baseline release on the TEST instance to support CCC specific features	Robin Ying Jeff Cantwell	None.	N/A	Installation completed on 1/8/2007.
5. Perform Banner version 6 to version 7 upgrade with CALB baseline release on the production instance	Robin Ying Jeff Cantwell	None.	N/A	Production instance upgrade completed on 3/3/2007.
6. Increase Banner server processing capacity for version 8 upgrade	Robin Ying	Estimated total hardware purchasing cost was	District fund	Hardware purchasing completed in 4/2008.
7. Migrate Banner INB server from Window Server 2003 to a new Linux Server	Jeff Cantwell	Server hardware cost was $9,000	District fund	Migration completed in 7/2008.
8. Migrate Banner WebSTAR server to new Windows Server 2003 due to old server warranty expiration	Jeff Cantwell	Server hardware cost was $6,500	District fund	Migration completed in 7/2008.
9. Planning the Banner V8 upgrade	Robin Ying Jeff Cantwell	None.	N/A	Production instance upgrade completed on 3/3/2007.

Objective 3B: Implement the XtenderSolutions System

An important component that keeps the information flow at a constant rate is storing and retrieving of documents. A review of our current practice led us to seek more efficient alternatives.

XtenderSolutions is an add-on system to Banner that handles document imaging storage--indexing the stored images to associate them with the corresponding Banner record. The image processing system can bring a large amount of data online in a cost-effective manner. Documents in electronic form obtained from scanning, importing, and faxing can be added to the AppXtender database. Imperial Valley College stores a huge amount of paper information in the offices of Admissions and Records, Financial Aid, Instruction, and Human Resources. Maintaining and retrieving data has become increasingly difficult and inefficient. Moving toward online storage and creating a paperless environment are crucial.

The XtenderSolutions system was purchased in April 2005.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Install, test and, turn up the XtenderSolutions system.	SunGard Higher Education technician	Included in the purchase price.	N/A	Completed in 5/2006.
2. Onsite user training	SunGard Higher Education User Training for Financial Aid, Instruction, Admission & Records, Human Resources, and Information Technology	Estimated one-week onsite training cost: $7,200	Financial Aid categorical fund and District fund	Completed in 6/2006.
3. System upgrade to work with Banner version 7	Jeff Cantwell	Upgrade license included in the maintenance contract	N/A	System upgrade completed in 5/2007.
4. Planning system upgrade to work with Banner version 8.	Jeff Cantwell	Upgrade license included in the maintenance contract	N/A	Completion date depends on Banner version 8 upgrade.

Objective 3C: Implement the Fixed Asset System

The Fixed Asset System is part of the Banner Finance module. It was not implemented during the initial Banner turn up. Imperial Valley College has been using a third-party software to maintain the fixed asset list. Integrating the list into Banner helps streamlining the purchasing process since the assets can be tracked and added to inventory as soon as the delivery is received.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Install, test, and turn up the Fixed Asset system in the Banner Finance module.	SunGard Higher Education consultant	Estimated onsite consultant fee was $3,000	District fund	System was put in production in 11/2006. Onsite consultant fee was $2,750.
2. Importing the fixed asset list into Banner	Alfonso Sanchez	None	N/A	Import work was postponed due to the Banner version 6 to version 7 conversion. Import work completed in

				12/2007.
3. Onsite user training	SunGard Higher Education User Training: Carlos Fletes Joe Serna Alfonso Sanchez	Estimated one week onsite training cost was $7,500	District fund	Onsite training completed in 1/2008. Onsite training fee was $7,380.

Objective 3D: Implement the Argos Report System

The Banner system is weak on report generation. The Argos Report System was purchased in April 2007 using ACCESO funding. It connects to the Banner system and provides fast ad-hoc reporting capabilities for users who need to display Banner data in specific formats. Reports in Argos are generated from the corresponding report data blocks, creating the proper report data blocks requires extensive knowledge of the Banner database structure as well as skills in Oracle SQL language programming. Information Technology needs more resources to handle the increasing demands from the Banner user community.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Install Argos server and application.	Jeff Cantwell	None.	N/A	Completed in 6/2007.
2. User training for report generation and data block construction	Dawn Chun		ACCESO funding	User training completed in 1/2008.
3. Continue building report data blocks to meet the user demand	Randy Burt Matthew Thale	Part-time consultant	District fund	Completed data blocks are listed below the table.
4. Request to increase a programmer in the IT group to handle the data report requests	Robin Ying	Cost of one head count	District fund	To be submitted to the Planning & Budget Committee for review

The following is a list of 23 Argos report data blocks completed based on user requests:

Athlete Eligibility, Catalog Lookup, Class Roster, Class Scheduling, Clinics, Double Registration, Faculty Load Check, Faculty Load (Report), GPA Search, Instructor Workload, Section Load, Section Overload, Student Course, Syosprofile, Employee Demographics (with 3 different reports), Catalog Information, Class Count Comparison, Cohort Code Query, Contact Hour Check for Fall/Spring, Enrollment History By Class, Final Grade Folder Labels, Late Start Query, Student Addresses By Section.

All of these report data blocks are executed against the production database and therefore they can generate real-time reports for users to analyze up-to-the-minute data from Banner. The Class Scheduling data block and reports are the most widely used application in Argos with over 40 concurrent users daily.

Objective 3E: Implement the Leave Balance System for Employee Self Service (mock payroll)

The employee self-service feature in Banner provides users access to their own employment profile data such as vacation and sick leave balances, benefit information, as well as monthly time sheet entry via web access. The managers can approve/disapprove the time sheet the same way they do with a purchase order. Implementing this feature helps improve data accuracy, reduce paper consumption, and reduce workload for HR staff.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Install, test, and turn on the employee self-service feature for leave balance and web time entry in the TEST instance	SunGard Higher Education consultant	Estimated onsite consultant fee was $8,000	District fund	Completed in 7/2007
2. User training on system configuration and operation	SunGard Higher Education consultant Members of HR staff Information Technology Staff	Included in item #1.	N/A	Completed in 7/2007 Total consultant fee was $7,200
3. Select trial organization to test the web time entry and employee self service	Travis Gregory	None	N/A	TBD
4. General deployment of the web time entry and employee self service to all organizations on campus	Human Resources and Information Technology	None	N/A	TBD

Objective 3F: Purchase the Oracle campus license

In addition to the Banner ERP system, there are several other applications using the Oracle database, namely XtenderSolutions, DegreeWorks, and the scheduling software. The Oracle license used for the Banner system was obtained from SunGard Higher Education and is limited to use by the Banner system only. The college needs to pay for additional licenses for other applications that require the Oracle database on a per-CPU basis. Therefore, acquiring a campus license will provide substantial savings in the long term. The unlimited campus license could also be used to install Oracle on the lab PCs for instructional use.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Negotiate with Oracle sales for campus license	Janis Magno Robin Ying	Estimated Oracle campus license cost was $200,000	District fund and ACCESO Fund	Campus license was purchased on 3/27/2008 for a total of

				$122,306.40
2. Arrange refund from SunGard Higher Education for 2008 Oracle license and obtain annual maintenance cost for Oracle database backend and Banner INB Oracle Application Server	Robin Ying	Annual maintenance cost for Oracle database backend is $21,186 and for Banner INB Oracle Application Server is $11,095.	District fund	Completed on 4/24/2008

Objective 3G: Implement the DegreeWorks System

DegreeWorks is an add-on system to the Banner Student module that provides a web-based user interface allowing student to conduct "what-if" scenarios for various majors, academic advisors to create automated Student Education Plans (SEP), and Admissions and Records evaluators to utilize automated instead of manual degree and certificate official, final evaluations.

DegreeWorks academic planning tools and real-time counseling features provide academic advisors with consistent and accurate academic records for each student, and eliminate manual tasks so they can provide more effective advising, and improve student retention.

Through aggregated course data, DegreeWorks can also provide administrators with key metrics for planning academic programs and understanding emerging enrollment trends.

Acquiring a student curriculum planning tool was a defined milestone for the ACCESO grant in its third year of implementation. Although the Banner system already contains a degree audit module, it is limited to degree audits only and does not provide for an automated SEP critical to the advising process and required by State regulations.

Since DegreeWorks is a stand-alone add-on, it requires its own Oracle database server. It also requires an interface server that can perform data transfer between the stand-alone database server and Banner.

With the current level of resources in Information Technology, it is very difficult to provide adequate support to the DegreeWorks system. Additional resources must be added.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Acquire DegreeWorks system	Dawn Chun	Estimated cost is $50,000	ACCESO and District funds	Completed on 1/2008.
2. Order server hardware	Janis Magno	Estimated cost is $7,000	ACCESO and District funds	Completed on 4/2008.
3. Setup DegreeWorks sever and install Oracle database	Jeff Cantwell	None	N/A	In progress
4. Catalog scribing	SunGard Higher Education DegreeWorks implementation	Estimated cost is $75,000	ACCESO and District funds	In progress

	team			
5. Integrate with a Banner cloned instance for system test.	Jeff Cantwell	None	N/A	TBD
6. User training	SunGard Higher Education DegreeWorks implementation team	Estimated cost is $50,000		TBD
7. Integrate with the Banner production instance for	Jeff Cantwell	None	N/A	TBD

Objective 3H: Implement the Position Control System

Position control is part of the Banner ERP system purchased in 2004 but has not been configured and turned up. It is a module that works closely with the Human Resources module to support the processing of employee job information, biographic/demographic information, student and student-employee enrollment verification information, salary planner, faculty load, 1099-R reports, 1042-S reports, W-2 reports, and the IPEDS reports.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Estimate consulting cost for system turn up, configuration review, and user training.	Robin Ying	Estimated cost for onsite training and configuration review is approximately 60 hours of consulting time.	District fund estimated cost is $12,000.	Cost estimate completed on 3/19/2008.
2. Schedule onsite training and configuration review.	Robin Ying Travis Gregory	None.	N/A	In progress.
3. System test using the TEST instance.	Human Resources and Information Technology	None.	N/A	Target date is Feb 2009.
4. System available for production use.	Information Technology	None.	N/A	Target date is Mar 2009.

Objective 3I: Implement the Payroll system

The payroll system is part of the Banner ERP system purchased in 2004 but has not been configured and turned up. Currently, the college payroll is processed by the county of Imperial with data input from the IVC Business Office. Because Banner is designed as a highly integrated system, the payroll system plays an important role in providing data linkage between the Financial, Financial Aid, Student, and Human Resource modules.

Implementing the payroll system is critical for maintaining the referential integrity of the data elements in Banner.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Estimate consulting cost for system turn up, configuration review, and user training.	Robin Ying	Estimated cost for onsite training and configuration review is approximately 420 hours of consulting time.	District funds with estimated cost at $84,000.	Cost estimate completed on 3/19/2008.
2. Schedule onsite training and configuration review.	Robin Ying	None.	N/A	Due to the large amount of system configuration work and training involved, the project needs to span a period of two to three years to complete. The initial starting date is targeted for Jan 2009.
3. System test using the TEST instance.	Business Services and Information Technology	None.	N/A	TBD
4. Reconcile with the payroll data from the county of Imperial to ensure data accuracy.	Business Services	TBD	District fund	TBD
5. System available for production use.	Information Technology	None.	N/A	TBD

Objective 3J: Implement the Enrollment Management System

The phase 1 scope of the Enrollment Management System (EMS) is to compute the cost for each section of each class – Course Record Number (CRN) and compute the budget based on class scheduling; the phase 2 scope is to be able to forecast the growth percentage number. The basis for computing the cost per CRN is the ability to calculate faculty load accurately. The Human Resources module in Banner maintains pertinent information for faculty members' position description, job labor distribution, and annual compensation information. The Student module in Banner contains data related to instructional and non-instructional assignments for all faculty members. Because the payroll system and the Position Control system have not been implemented in Banner, it is difficult to reconcile the information from those two modules and produce a contiguous, comprehensive, and

accurate work load result for each individual faculty member. This EMS implementation will reduce the manual intensive work between Instruction, HR, and Business, and at the same time it will provide administrators a real-time readout of the "cost to do business."

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Reconcile faculty load records, implement error checking reports, and establish accurate faculty load report	Information Technology, HR and Instruction	College will be able to compute the budget based on the class schedule, making "Instruction driving the budget" a reality.	District fund	In progress.
2. Design and implement the user interface for data display	Information Technology		District fund	In progress.
3. Research and determine the proper elements for fixed cost calculation at the college level	Information Technology and Financial Services		District fund	TBD
4. Research and determine the proper elements for fixed cost calculation at the Division level	Information Technology and Division Chairs		District fund	TBD
5. Implement the fixed cost calculation mechanism	Information Technology		District fund	TBD
6. Deploy phase 1 of EMS	Information Technology		District fund	TBD
7. Collect user feedback for the phase 1 implementation and plan for phase 2.	Information Technology		District fund	TBD

Goal #4: Ensuring comprehensive faculty and staff training.

As IVC continues to move forward, making substantial strides since the "old days" of the 56K modem connection, the need to provide relevant and continuous training exists. As faster and more powerful computers find their way into classrooms and offices, faculty and staff will need to have support to technological advances being made on campus.

Objective 4A: Provide updated computing environment for faculty and students and ensure proper support

Computing technologies, both hardware and software, are evolving extremely fast. It is very important to keep the hardware current so it can support the new releases of software that usually demand more processing power and storage space. It is equally important to maintain current knowledge of the newer software to effectively maximize the benefits of new functions and features.

In Goal #1 we have a plan to keep the computing environment at IVC current. We also need to periodically revise the technology training contents to match the hardware and software upgrades.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Periodically update technology training contents for new faculty	Larry Valenzuela	None.	N/A	On going
2. Perform faculty and staff surveys on a regular basis and use the feedback to prioritize the training course offerings.	Larry Valenzuela	None.	N/A	On going
3. Develop an online tutorial of using Banner for new users	Larry Valenzuela	None.	N/A	On going

Objective 4B: Update student computing labs with current hardware and software

The student computing labs in IVC are managed by the corresponding department. For example, the Math Lab is managed by the Math Department in the Science, Math, and Engineering Division, and the Computing Information Technology Department in the Business Division. The Divisions take the responsibility for the hardware upgrade following the recommendation of the Technology Council as stated in Objective 1A. Each Division also manages individually the instruction software purchase, upgrade, and installation, tailored to its special needs.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
8. Replace outdated PC hardware in the student labs	Instructional Divisions	Division budget	Categorical and District funds	On going
9. Update instructional software on student computers	Instructional Divisions	Division budget	Categorical and District funds	On going

Goal #5: Implementing the campus technology modernization plan

As IVC continues to embrace and deploy more technology on campus, the legacy of having been “behind the curve” for many years still remains. As new equipment and software are purchased, older less-serviceable technology becomes glaringly evident. This situation pertains most obviously to the network situation on campus. Originally, the first network on campus was implemented poorly. In order for the college to meet the demands of challenges of educational technology, the network needs to be strengthened and expanded. In addition, the campus web site has been in need of a massive overhaul for many years.

The campus technology modernization plan is funded by the Certificate of Occupancy (COP) fund. It includes the following major projects: (1) rebuild the College's main web site, (2) upgrade the campus intranet wiring and renew the network equipment, (3) renew the campus telecommunication equipment, including deploying a new voice over IP telephone system, and (4) deploy a campus-wide wireless data network. The campus technology modernization plan was set in March of 2007 with a target completion date of December of 2008.

Objective 5A: Rebuild the College's main web site

A well-designed and user-friendly website is a critical component of effective communication to prospective and current students as well as faculty, staff and community members. It also is reflective of the College's commitment to providing students with the tools necessary to participate in the technological world of today. As with personalized letters and printed publications, the quality of the communication tool demonstrates the quality of education to be delivered.

The existing website at Imperial Valley College has gone for several years without a major overhaul. Contents are not updated frequently and there are many broken links. Due to the lack of a Web Master, rebuilding the website has been postponed for many years. In the fall semester of 2006, interim Vice President of Instructions Gary Rodgers made the decision to contract out the creation of a new college website.

For the system security and runtime efficiency concerns, the Information Technology decided to use Linux as the operating system on the new web server, replacing the Windows 2003 Server.

A web task force was formed in the Technology Council consisting of Jim Fisher, Andres Martinez, Michael Boyle, and Robin Ying, to search for a suitable website development company to carry out the work. The Conveyor Group of El Centro was selected in October 2006. A new website platform including a simple content management system (CMS) was custom built for Imperial Valley College. The new site platform was completed in June of 2007.

Then a team of three people, Lisa Ragland, Larry Valenzuela, and Martin Moreno, together with the web leads from each department, revised, updated and reconstructed the contents for the new website. A six-week CMS training workshops was conducted from September to November of 2007 to facilitate the contents building and transfer. The new website went alive on January 7, 2008.

While the new website is up and running, the Information Technology continued to maintain the old web server to support the instruction websites of the faculty members. A migration plan was put in place and the target date for completing the task was set to July 2008.

In February 2008, a web master was hired in Information Technology to take over the maintenance of the new website as well as assisting faculty members to move their instructional websites from the old web server to the new one. The move was completed in July 2008 and the old web server was decommissioned.

To continue operating a successful website, the user interface and the technology behind it must be evaluated and updated regularly and consistently. The architecture of the platform used must allow for future growth.

The platform built by the Conveyor Group still needs lots of enhancements, and the current architecture will limit its future growth. The most problematic issues in the CMS are: (a) source code is encrypted, (b) limited extensibility, (c) fixed navigation, (d) uses deprecated PHP technology, and (e) no user community for the content management system. The direction is an open-source based CMS alternative that is highly extensible, has a variety of navigation options, keeps up-to-date on PHP developments, has a dedicated security team, and has a large (100,000+) user community. Upgrading to a CMS with these characteristics would allow the college to take advantage of a much larger software base that could be put to use in serving our students, faculty, and staff.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Review proposals from different web site construction vendors	Web task force from the Technology Council	None.	N/A	Screening of website construction company completed in October 2006, Conveyor Group of El Centro was selected.
2. Order server hardware	Robin Ying	Cost of the Dell server was $12,178.97	District fund	Server order completed on 11/7/2006, server delivered on 11/27/2006.
3. Install Linux and configure the server for website development	Information Technology	None.	N/A	Server configuration completed on 1/17/2007.
4. Testing of the new website	Web team and web leads from each department	None.	N/A	Initial testing of the new website was completed in September 2007.
5. Conduct CMS training workshops (6 weeks, 12 sessions) and build/transfer web contents	Web team and web leads from each department	None.	N/A	Completed in November 2007.
6. Put the new website into production	Information Technology	None.	N/A	New website went alive on 1/7/2008.
7. Hire a webmaster	Information Technology	Webmaster is a classified range 35 full time employee.	District fund	New webmaster Omar Ramos was hired in February 2008
8. Migrate faculty instruction website from old web server to the new web server, and decommission the old web server. Target date is set to July 2008.	Omar Ramos	None.	N/A	Website migration completed in July 2008, and the old web server was decommission-

				ed.
9. Implement open-source based CMS alternative to replace the current CMS	Omar Ramos	None.	N/A	Target completion date is February 2009.

Objective 5B: Upgrade campus intranet wiring

The existing intranet wiring on campus has exhibited severe degradation due to the harsh weather and the inferior materials used. Many of the network switches are also installed in less desired or improper locations such as in the air conditioning machinery room, near a high voltage transformer, or in a non-air conditioned location. In addition, many inter building cables are of direct burial type, which is easily damaged by other ground work.

The campus intranet wiring upgrade project was to replace the existing data network wirings with CAT-6 cables within the buildings, to add conduits for inter building fiber cables, and to renew the necessary network equipment. The new wiring also will support the new Voice over IP telephone system deployment.

The new intranet wiring carries a 20-year warranty. It is a wise investment for IVC given its harsh desert weather environment.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Site survey and design of the new campus intranet	Robin Ying Jeff Cantwell	None	N/A	Completed on 8/31/2007
2. Prepare RFP for intranet wiring specifications and soliciting vendors to participate the bidding.	Robin Ying	None	N/A	RFP completed on 9/8/2007.
3. Conduct the open bid process and select the vendor.	Information Technology	Estimated newspaper Ad cost $1,000.00	COP fund	Open bid and vendor selection completed on 9/28/2007.
4. Issue the Horizontal and Backbone Telecommunications Distribution Systems purchase order.	Information Technology	Purchase order amount was $421,970.00	COP fund	The IVC Board approved the purchase order in the 10/10/2007 meeting (Res. #13964).
5. Install inter building conduits	IVC Maintenance Department	Estimated material cost was $37,000.00	COP fund	Conduits work completed in January 2008.
6. Install intranet wiring	TelData Enterprises	Cost included in item 4.	N/A	Intranet wiring installation completed in Feb 2008.
7. Install new network equipment and testing	Information Technology	None	N/A	New network equipment

				deployed and tested in May 2008.
8. Add building 500 classrooms, parking control office, and reprographics office to the new intranet wiring upgrade scope.	Information Technology	Estimated labor and material cost is $25,000	District fund	Project completed on 9/8/2008.
9. Building 700 wiring upgrade.	Information Technology	Estimated labor and material cost is being determined.	District fund	Target starting date is December 2008.
10. Extend the intranet to the new science building.	Information Technology	Estimated labor and material cost is being determined.	Funding source to be determined.	Target starting date is August 2009.

Objective 5C: Renew campus intranet network equipment

As part of the campus intranet wiring upgrade project, the network equipment (switches and routers) are being renewed to improve the speed and reliability.

IVC has been using Hewlett-Packard Procurve series network switches in the past. The HP network equipment provides life-time warranty and has a proven record of being solid and reliable. We continue to use the same brand to take advantage of full compatibility and cost saving by reusing many of the components.

A high speed core router switch replaces the older units, and the old core router switch is re-deployed as the dedicated switch for the ERP systems. This has increased the processing throughput of the ERP systems significantly. Most of the access switches are replaced with the new model that supports gigabit speed ports. Additional capacity is also included for supporting the voice over IP application.

At the time of purchasing new HP network equipment, HP was also offering a trading-in rebate for any types of network switches or hubs. The rebate was approximately 7.2% of the purchase price of the new equipment. The provided a rare opportunity to save cost.

In addition to renewed equipment and added bandwidth and capacity, we also move from a 16-bit network mask scheme to a 23-bit network mask scheme. This provides a broadcasting range that is 128 times smaller than the original, so that any packet storm, should it attack the network, will be confined to a much smaller scope.

Additional security measures will be implemented in phases, which include MAC address lock down, network access controller, and integrated authentication.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Purchase new HP network equipment.	Information Technology	Estimated cost was $67,000.00.	COP fund	Purchasing completed in October 2007.

2. Process trade-in rebate.	Information Technology	Rebate amount was $4,850.00.	Rebate applied to other purchases in the Campus Technology Modernization Project	Rebate completed in December 2007.
3. Design new VLAN configurations for parallel operation of the existing and the new intranet. Configure a new DHCP server for the new intranet use.	Robin Ying	None.	N/A	New VLAN design and DHCP server configuration completed in March 2008.
4. Configure, test, and deploy new network equipment on a building-by-building basis.	Information Technology	None.	N/A	New network equipment deployment completed in May 2008.
5. Convert 16-bit network mask to 23-bit, and cut over to the new intranet.	Information Technology	None.	N/A	Conversion completed in July 2008.
6. Implement additional security measures	Information Technology	TBD	TBD	Target project starting date is Jan 2009.
7. Extend new intranet to the new science building.	Information Technology	TBD	TBD	Target project starting date is Aug 2009.

Objective 5D: Renew campus telecommunication equipment

Last time IVC deployed a new telephone system was in 1995. It was an Avaya G3 PBX switch. The growth of the college in the past ten years has out grown the capacity of that switch. The bond passed recently calls for the addition of two to three new buildings. This puts additional demands on the capacity of the telephone system. But the Avaya G3 switch has reached its maximum physical expansion limit. A new switch must be added to handle any additional increase in capacity.

The rapid technology growth in the past decade also impacts the telephone switch design. IP based switch now supersedes in features and functionalities than those of traditional time division multiplex circuit-based switches. In addition, the IP based switch offers nearly unlimited incremental growth capability that the traditional switches lack of. Therefore it is logical that the choice of the telecommunication equipment renew will be an IP based phone system.

Besides the concerns for growth, the second reason to select an IP phone system is that it is integrated with the data network. In Objective 5B and 5C, a new intranet data network has been built, and the wiring carries a 20-year warranty. This very same network can also be used by the IP phone system.

The third reason to use an IP phone system is for the simplicity of its management and provisioning. In an IP phone system, a user ID is associated with the MAC address of the phone unit, not associated with the specific port it plugs in. In the upcoming years, when

the new buildings are completed, we will anticipate large amount of office moves. The IP phone system provides a distinct advantage that no physical circuit-switched ports provisioning is required for moving the phone of a particular person from one office location to another, and there is no delay of the service for phone movement. This will save the College a huge amount of operation cost.

In recent years, many new IP phone manufactures have brought their products to the market. Due to the keen competition, the products have exhibited increased features and yet decreased pricing. ShoreTel has been manufacturing IP phone equipment for over 10 years, and several public agencies in Imperial Valley are using their equipment with satisfactory results. Its N+1 redundant spare switch design is among the pioneers in the IP phone industry.

One key requirement for the new IP phone system is that it must be able to interface with the existing Avaya G3 switch. ShoreTel has demonstrated such compatibility after the dialing plan on the Avaya G3 switch was upgraded from 3-digit to 4-digit.

ShoreTel IP phone system also provides a broadcasting feature very similar to a PA (public announcement) system. It can broadcast a live message to a group of phones through the built-in phone speaker. Deploying an IP phone in every classroom provides the capability for announcing important messages to faculty and students during emergency situations. IVC has never had this capability before for the emergency preparedness. In addition, faculty can also use the classroom phone for requesting delivery of instruction materials or reporting any unusual activities. Classroom phones are configured that only on-campus calls are allowed except “dial 911”.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Prepare RFP for IP phone system and soliciting vendors	Robin Ying	None.	N/A	RFP completed on 5/21/2008.
2. Conduct the open bid process and select the vendor.	Information Technology	Estimated newspaper Ad cost $500.00	COP fund	Open bid and vendor selection completed on 5/30/2008.
3. Issue the ShoreTel IP phone system equipment purchase order.	Information Technology	Purchase order amount was $255,430.42.	COP fund	The IVC Board approved the purchase order in the 6/10/2008 meeting (Res. #14078).
4. Configure, test, and install ShoreTel IP phone system including interfacing with the existing Avaya G3 switch.	TelData Enterprises	Estimated installation, deployment, and training cost was $42,000.00	COP fund	Configuration, testing and installation completed on 8/18/2008.
5. Install IP phones in the classrooms.	Information Technology	None.	N/A	Installation completed in August 2008.
6. Deploy and cutover to the new IP phone system	TelData Enterprises	None.	N/A	In progress.
7. Conduct user training for the	TelData Enterprises	None.	N/A	First user training

new IP phone system				scheduled on 9/23-24/2008.

Objective 5E: Deploy a campus-wide wireless data network

Laptop computers are widely used by faculty and students in and outside classroom. In some cases, they are replacing traditional methods for students to take notes in class. Therefore, accessing the Internet from laptops through wireless connections is increasing in demand. Deploying a campus-wide wireless network will enhance the network access capability for both students and faculty.

Wireless connection must be deployed with proper security mechanism. A password protected access is necessary to prevent unauthorized use of the network resources. The user name/password combination can also be used as the source for distinguishing access privileges after admission to the network. Faculty and students need to have different access privileges.

Because faculty and students also use their laptops to connect to the Internet from other locations such as home, the chances of being infected by viruses and malware are much greater. To properly protect the campus intranet, a network access controller will also need to be deployed to screen the laptops before admitting them to the campus intranet.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Invite wireless network infra structure vendors to present their products.	Robin Ying	None.	N/A	Several wireless infra structure vendors were invited to the Technology Council to give presentations of their product.
2. Conduct site survey, determine placement locations of radio units, compile equipment list, and determine the estimated costs.	Information Technology	None.	N/A	In progress.
3. Assemble a complete end-to-end working model and test the authentication and network access control functionality.	Information Technology	Estimated cost for hardware is $15,000.	COP fund	In progress.
4. Schedule the installation of the radio units and the wireless network switches.	TelData Enterprises	Estimated cost for hardware is $65,000.00	COP fund	TBD
5. Test and adjust radio units for optimum performance.	TelData Enterprises	None.	N/A	TBD

Objective 5F: Update software and hardware on the infra structure computing systems

Adding a shared network storage file server to IVC's campus intranet will facilitate students and faculty three ways. First, students can access from anywhere on or off campus to their stored class files. Second, faculty can put all their class files on an IT-managed, fully backed-up file server, and access them from classroom, office, or home. Third, as more faculty move to using streaming video in class as well as for their online classes, it can serve as a central repository of all video files for easy and fast access.

The network storage file server can also provide fast and uniform content delivery to the smart classrooms. Text documents, images, sound files and video clips can be shared through the fast Ethernet connection which supports on-demand capacity and permanent availability. In addition, class materials residing on the CD ROMS, which typically require loading to each workstation in a time-consuming fashion, could be pre-loaded onto the file server for easy access by any workstation.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Implement a pilot network storage file server for faculty and students to study and collect information about the file access, sharing, security, authentication method, and applications.	Information Technology	TBD	District fund	TBD
2. Based on the pilot study result, determine the best way to implement a full scale network storage file server for entire campus to use.	Information Technology	TBD	District fund	TBD
3. Implement the production network storage file server.	Information Technology	TBD	District fund	TBD

Goal #6: Developing, reviewing, and revising technology related policies and procedures on a regular basis.

The Technology Master Plan contains goals and objectives spanning a three-year time frame beginning with 2006-2007 academic year. For budgeting purposes, the academic year is then synchronized with the college fiscal year. An annual review and assessment of goals and objectives is required, in concert with other planning entities on campus. With input from all arenas (Administration, Instruction, Student Services, and the President's Office) via program review documents, the Technology Master Plan is reviewed and revised. Results of this review are then relayed to appropriate committees—particularly the Budget

and Fiscal Planning Committee, and the Campus Operations and Facilities Planning Committee.

Objective 6A: Establish the Computer and Network Use Policy

Almost eight years ago, IVC embarked on the development of its first usage policy for computers and networks. To date, this policy has gone through many iterations and drafts, but a final version is still pending. It is imperative—as the college continues to expand its technological resources and utilization—that a computer and network use policy is in place.

Action Items	Responsible Person(s)	Fiscal Impact	Funding Source	Status
1. Current draft of the IVC Computer and Network Use Policy forwarded to Technology Council for review and approval.	Suzanne Gretz, CTA President	None.	N/A	Pending CTA review.

VI. Technology Master Plan Revision Process

In light of concerns that resulted from the most recent Accreditation process, the Technology Council is now known as the Technology Planning Committee. The college developed a new planning process in the fall of 2008, which places the Technology Planning Committee within a group of committees that report directly to the College Council. Comprised of eleven voting members, the new Technology Planning Committee includes:

The Vice-President of Academic Services
The Dean of Technology
The Dean of Admissions and Records
A CMCA Representative
Three faculty representatives (appointed by the Academic Senate)
The ASG President
Three classified representatives (appointed by CSEA)

The Technology Planning Committee is responsible for developing the Technology Master Plan and maintains its currency, but this committee takes its direction primarily from the Educational Master Plan (EMS). Technology goals and objectives are derived from the fundamental three-fold vision of the college: to serve instruction, to support expansion, and to maintain day-to-day campus operations. In concert with other planning committees, the Technology Planning Committee provides strategic guidance for technology implementation at IVC.

Among the group of committees that report to the College Council, the Budget and Fiscal Planning Committee, and the Campus Operations and Facilities Planning Committee are key players in the planning process. The Technology Planning Committee works directly with these two groups in devising plans that connect purposefully to the Educational Master Plan.

The goals and priorities in the EMS are assessed and updated annually, and this process is facilitated by input from College Council after receiving information, data, proposals, and assessments from the ten committees (including the Technology Planning Committee) who report to College Council.

Members of the Technology Planning Committee also serve on many of the ten committees that report to College Council. This rich cross-membership facilitates communication between and among the key planning entities on campus. Technology Planning Committee members can appropriately inform the Budget and Fiscal Planning Committee of the need for resources that are required to carry out the Technology Master Plan. Also, the Technology Planning Committee can inform the Campus Operations and Facilities Planning Committee about the design and implementation of new or remodeled facilities in addition to technology standards for instructional and non-instructional spaces. Enhancements to the campus computer network and requisite replacement plans for new equipment and resources can also be directly conveyed by the Technology Planning Committee to those groups responsible for the college budget and for the utilization and development of facilities.

The Educational Master Plan is also developed using input from Department Program Review documents. The EMS receives program-review input primarily from four areas: Administrative Services; Student Services; Academic Services; and, Institutional Services (President's Office). All this information, in turn, flows to the Technology Planning Committee via the Educational Master Plan planning process, where it can be reviewed and analyzed by the Technology Planning Committee as part of the annual assessment and updating process of the EMS.

The Technology Master Plan contains goals and objectives targeted for a three year time frame beginning the 2006-2007 academic calendar year which is synchronized with the college fiscal year. As described earlier, an annual review and assessment of goals and objectives is required, in concert with other planning entities on campus.

Through this planning process, IVC identifies long-term goals and objectives and then determines how best to realize those objectives. This process must be continual. Performance is compared against identified goals and objectives, and adjustments then need to be made to ensure desired results. In the face of cyclical budget constraints, it is particularly important to devise a realistic Technology Master Plan that also allows for accommodation of the constantly changing and evolving dynamics of technology. Funding, commitment, and flexibility are required, and a purposeful technology plan is vital for the continued realization of IVC's strategic goals and objectives. Due to recent organizational changes, many of them reflections of input from Accreditation Team recommendations, Imperial Valley College has developed a new focused and integrated planning process that links together key committees and entities on campus. And this new process creates meaningful connections to the budgeting process, allowing the technology efforts on campus to sustain a new reality at IVC, with Instruction truly driving the budget process.