Santiago Canyon College is an innovative learning community dedicated to intellectual and personal growth. Our purpose is to foster student success and to help students achieve these core outcomes: to learn, to act, to communicate and to think critically. We are committed to maintaining standards of excellence and providing accessible, transferable, and engaging education to a diverse community. (Approved by RSCCD Board of Trustees, 9-23-13)
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I. INTRODUCTION
The Santiago Canyon College (SCC) Technology Master Plan (TMP) has been created to meet the learning needs of our students and support SCC’s institutional mission. The TMP was written by members of the SCC Technology Committee (TC) through weekly meetings and in collaboration with commercial vendors. Effort was made to align the TMP with the Rancho Santiago Community College District (RSCCD) Strategic Technology Plan (STP) with specific focus on the College’s technical needs. Whereas the STP assesses RSCCD’s technical operations from an “enterprise” perspective, the TMP will evaluate SCC’s technical support structure and the instructional technology infrastructure that promotes student success.

Technology is at the core of virtually every aspect of the educational mission of SCC. The College’s operations and the assessment and measuring of student learning and institutional effectiveness relies upon the effective use of technology. Yet the planning and implementation of technology, specifically instructional technology, at SCC is not sufficient to meet the challenges and student and faculty expectations for technology, especially given the budgetary and staff constraints of the times. The TMP will attempt to outline these technical needs and prescribe goals and recommendations to elevate the College’s technical proficiencies.

The TMP is developed to provide a framework for the development of technology and related resources at SCC. It is intended that the institution will use the TMP to prioritize the technology initiatives, set annual technology goals, and make progress toward the implementation of these goals.

II. PLAN OF ACTION
The SCC TC has identified and prioritized goals for the 2012-2017 TMP. The campus priorities will revolve around providing students with access to learning technologies. The TMP for SCC will reflect the integration of the Accrediting Commission for Community and Junior Colleges (ACCJC) Standard IIIC, the College Mission Statement, and the SCC TC planning process and recommendations.

The TMP is reviewed and discussed with the TC prior to approval. Upon approval of the plan, the committee will begin to establish goals, objectives, and activities that reflect the initiatives identified in the overall TMP. The committee will review the formative and summative goals on a yearly basis as a measure of accountability.

III. SCC TECHNOLOGY COMMITTEE (TC)
The SCC TC promotes the use of technology to increase efficiency of college operations, supports teaching, and enhances student learning. The committee’s responsibilities include:
• Maintaining a technology plan that aligns with state recommendations
• Assessing the technological needs and competencies of faculty, staff, and students
• Vetting technologies and recommending training for staff and faculty
• Making recommendations concerning acquisition, implementation, maintenance, and upgrading of technologies within a secure and robust infrastructure
• Communicating with College and District personnel
• Identifying and promoting resource procurement to advance technology and its use by students, faculty, and staff
• Recommending allocation of technology resources in accordance with the Educational Master Plan and Technology Plan
• Maintaining a website to disseminate technology-related information to the SCC community
• Working with DSPS in creating a holistic strategy that ensures compliance with the Americans with Disabilities Act requirements for all technologies at SCC

IV. SCC TEC VISION STATEMENT
Santiago Canyon College will integrate technology throughout the classroom and campus to support an innovative learning community that can find, evaluate, use and create content. Santiago Canyon College will identify and utilize existing, emerging and cost-effective technologies that promote positive learning outcomes. The SCC campus will support professional development necessary to deliver curriculum, collaborate, communicate, manage and evaluate information that supports the Technology Master Plan.

V. SCC TEC MEMBERSHIP STRUCTURE
The SCC TC structure consists of the Website Taskforce and the Technology Committee (TC). Both groups communicate with the SCC College Campus, Academic Senate, and the District Technology Advisory Group (TAG).

The SCC TC consists of faculty, classified staff, a student representative, and administrators. The Website Taskforce consists of members from district, campus faculty, classified and administration.

The SCC TC structure should reflect constituent groups on campus that support technology and the TMP initiatives. The chart below represents the current TC membership.

<table>
<thead>
<tr>
<th>Table 1 – TEC Membership</th>
<th>Representing</th>
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<td>Childress, Curt</td>
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<td>Classified Management</td>
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<td>BCTE</td>
<td>Academic Management</td>
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<td>Computer Science</td>
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<tr>
<td>Parella, Mike</td>
<td>Political Science</td>
<td>Faculty</td>
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</table>
VI. SCC EDUCATION TECHNOLOGY FRAMEWORK

The SCC TMP is focused on supporting the Education Technology Framework for:

- **Learning: Engage and Empower** – SCC will leverage powerful technology that provides personalized learning that customizes the pace of teaching and instructional practices. All learners will have engaging and empowering learning experiences, both in and outside of the college classroom, that prepare them to be active, creative, and knowledgeable participants in a globally networked society.

- **Assessment: Measure What Matters** – SCC will leverage technology to regularly measure and report student success, institutional effectiveness, and operational efficiency while using assessment data for continuous improvement.

- **Teaching: Prepare and Connect** – SCC will increase the ability of educators to use technology to create engaging, meaningful, and connected learning environments. They will be supported individually and in teams by technology that connects them to data, content, resources, expertise, and learning experiences that enable and inspire more effective teaching for learners.

- **Infrastructure: Access and Enable** – SCC will provide a comprehensive and sustainable technology infrastructure including hardware, software, support staff, policies, and processes for students and educators, to enable learning when and where it is needed.

- **Productivity: Redesign and Transform** – SCC will redesign organizational processes and structure to take advantage of technology in order to improve learning outcomes and use resources more efficiently and effectively. The college will use technology to improve transparency and support evidence-based decision-making by providing data-driven performance reviews at all functional levels.

VII. RSCCD TECHNICAL SUPPORT STRUCTURE

The Rancho Santiago Community College District (RSCCD) maintains a centralized and collaborative Information Technology Services (ITS) department led by the Assistant Vice Chancellor. One of the primary missions of ITS, is to provide students and employees with quality technology services and systems that promote learning, productivity, and collaboration.

The majority of ITS systems and services are centrally run from the District Office and each College is staffed with a Director of Academic Support and support staff that are housed on the campus. ITS is responsible for operating and maintaining the physical network infrastructure required to service the District’s computer and telephone networks. The District also oversees the core business and communication systems that include email, telephone, student services,
institutional advancement, enrollment management, information, financial, and human resources, aka “The Enterprise.”

Image 1 – RSCCD ITS Organization

The District’s ITS is divided into four areas, which include Application Systems, Information Systems, Network Administration, and Academic Support. The Academic Support departments are located at Santa Ana College and SCC. The breadth and depth of the ITS support services can be read in the STP.

VIII. DISTRICT ACADEMIC IT SUPPORT AT SCC

The Academic Support ITS department located on the SCC campus maintains the daily operational support needs for the academic servers and desktop support. The team interacts with the College’s media department and instructional divisions to ensure a useful and appropriate link to the needs of the College. The SCC Academic Support staff works with District ITS staff to ensure District hardware and software standards are met. The overall goal is to ensure that faculty and staff receives the best support possible with respect to network accessibility, PC/MAC configuration, and software installation. Responsibilities include:

- Provide site-licensed operating system and business application software
- Install instructional software and equipment for faculty
- Procure and maintain academic servers
- Provide technical expertise of hardware/software specifications to colleges that meet district standards and instructional requirements
- Develop system and maintain instructional inventory of hardware and software
- Develop effective system in deploying, maintaining, and monitoring classroom equipment and software
- Procure and maintain college computers, servers, and printers
The Director for Academic Support at SCC oversees six technical support staff. Supporting SCC is a Network Specialist II, Technical Specialist III, and two Technical Specialist I positions. Supporting the non-credit site at the Orange Education Center (OEC), including eight off-campus locations, is a Technical Specialist III and a Technical Specialist I.

IX. DISTRICT ITS CHALLENGES AT SCC

District ITS and Academic Support departments support all of the College’s technical needs up to the classroom. Their main concern are the “wires, machines, and software” that compose the technical infrastructure of the District and Colleges. Academic Support is a service department dependent on the College for the funding to purchase/maintain software or to replace or procure new computers. Given the budget constraints, many departments do not have the funding to procure new machines. As a result of the fiscal shortcomings, some labs at the College still maintain seven-year-old machines student use computers. Often times, Academic Support reuses machines within the College in order to retire older, less productive computers. This is not an optimal strategy for hardware replacement.

The College’s technical deficiencies are also evident in the human resources needed to support instructional technology in the classroom and distance education in the virtual classroom. Currently, faculty must take the initiative with integrating learning technology in their classroom. Many departments struggle to associate funding to purchase the technology needed to support
classroom learning technology enhancements. The lack of department funding translates to a lack of resources available to assist faculty with instructional design and classroom technology innovation. Instructional technology and support are consistently ranked low on the budgetary and staffing priority lists.

A budgetary commitment is also absent in supporting distance education. SCC has identified the need for a full-time faculty position to support faculty with developing curriculum online, designing online classes that support the core objectives of the course and the online-specific course expectations, such as Instructor Initiated Regular and Effective Contact. Online learning is an important delivery mode, which extends higher education access to students that do not have traditional schedules. Supporting access to higher education is one of SCC’s primary goals. Supporting an online program will ensure that SCC continues to extend access and that the courses we extend will meet our expectations and learning outcomes.

X. SCC EDUCATION TECHNOLOGY GOALS, STRATEGIES, AND RECOMMENDATIONS

Below are the goals, strategies and recommendations based on information obtained in the District ITS STP 2012-2014, SCC Technology Plan 2008-2012 and structured around an Education Technology Framework for learning, assessment, instruction/curriculum, infrastructure/facilities/access and resources.

LEARNING

Students’ lives outside of school are filled with technology that gives them mobile access to information and resources 24/7, and enables them to create multimedia content and participate in online social networks and communities where they can share their work and information all over the world. Similarly, technology brings opportunity to faculty, staff, and administrators to teach using mobile devices in the classroom in areas such as film editing, special effects in music, geographic information systems (GIS), science, engineering, math, and more. The challenge for SCC is to have the ability to leverage key talent, budgetary resources with technology, software, and learning opportunities.

Recommendations for providing opportunities to engage students, faculty, staff, and administrators with relevant learning experiences would include:

1. Promote Service Learning Agreements to increase student accountability in the classroom, laying the foundation for a successful college experience by helping students and faculty understand the importance of adhering to their own best practices and goals.
2. Provide a Web portal for the campus community that will integrate registration, class Web pages, student services, and distance education.
3. Implement a mobile application that translates the functionality available on the SCC Web page to the portability of a smartphone.
4. Facilitate the graduation process through a Degree Audit program that allows to students to assess program completion or changing majors.
5. Program an online Student Education Plan that helps a student plan their coursework based on course offering and major.
TEACHING

Students expect that online resources for learning or student services be available on demand. Students expect classroom instruction to be innovative and incorporate learning technologies to enhance the education experience. Furthermore, the technology survey conducted amongst the faculty at SCC shows a strong interest in using technology in the classroom. The survey indicates a great desire for training related to creating video, recording lectures, and recording Podcasts. There is also no evidence of a unified vision for how to use technology in the classroom or in the online environment.

SCC’s faculty are interested in keeping up with what is new in educational technology, but are expressing a broad disappointment with the lack of instructional design and learning technology support. The survey indicated a strong need for an instructional designer and educational technology support staff. The survey also revealed a strong need for regularly updated computer hardware and software to support instructional technology. These expectations require a dedication of human and physical resources to catch up and maintain pace with education technology. To meet these expectations, an Instructional Design Center (IDC) is proposed to assist SCC faculty with integrating technology in the classroom and online.

An IDC will help evaluate emerging technologies that will improve student success and eliminate barriers to entry or completion. The instructional designer will also measure the effect of implementing new initiatives and ensure they are aligning with SCC’s Mission. Other responsibilities include evaluating educational trends, researching, revising and creating new initiatives and avoiding expensive fad technologies that are not aligned with proven learning theory.

Acting on SCC’s vision of an IDC will require technology hardware and software support. The IDC should have a mediated computer lab/classroom that uses dual boot configured MACs so that each instructor may choose an operating system of preference for workshops and class materials creation (e.g. videos, Podcasts, etc.). The IDC should be staffed by an instructional designer capable of working with faculty on reengineering their teaching approach to integrate innovative learning technologies. The instructional designer should also be capable of administering the online Blackboard Learning Management System (LMS) and provide training in establishing an online curriculum. This dual support role of the instructional designer will best serve the College’s need for distance education support and education technology training.

To promote instructional technology at SCC, the following goals are recommended:

1. Establish the SCC Instructional Design Center (IDC) at a campus computer lab with the necessary hardware and software.
2. Provide the staffing for the instructional designer that will develop the goals of the IDC and support distance education (see ETS support structure below).
3. Provide on-going Professional Development support for staff, faculty, and administration
4. Integrate teleconferencing technology into the classrooms for improving education quality through creative technology-based tools, dynamic partnerships, and effective capacity building of teachers and education leaders.
5. Promote training for staff and students on the use of educational technologies, such as WIKIS, Video, Bring Your Own Devices (BYODs-Android and iOS devices), Web-based educational resources (iTunes U, YouTube), Web 2.0 technologies, Open Educational Resources, ADA Accessibility, Blackboard, etc.

6. Provide evening media support.

7. Partake in the Open Educational Resources (OER) movement to leverage shared course materials, textbooks, videos, audio, digital presentations, etc.

8. Adopt “Flipping the Classroom” movement that uses video technology to assign class lectures as homework and the classroom for group discussion and collaboration.

**SCC Education Technology Support Structure**

**ASSESSMENT**

Making data-driven decisions is the standard for differentiating effective learning practices and strategies. How does SCC support assessing technology and all the complexities associated with measuring infrastructure, curriculum, facilities, access, and learning?

Using assessment to measure continuous improvement is an effective way to improve learning. This can be accomplished by making the right data available to students, faculty, staff, and administrators; giving more evidence of effective learning, teaching and competencies; as well as examine interventions, and best practices using data. To meet this goal the following actions are recommended:

1. Implement an Enterprise Data Warehouse that provides a common data set of enrollment and student services.

2. Develop a Web Dashboard available to administrators and staff that provides a quick snapshot of key enrollment indicators term-to-term.
3. Provide the data querying tools to support assessment and evidence-based decision-making.
4. Implement a Program Level Expense report that integrates department instructional and non-instructional costs with FTES generation.

INFRASTRUCTURE

The core College IT infrastructure is discussed in detail in the District STP. However, from students to staff, the entire College community expects the computers to perform fast enough to support the latest software. Students of this digital society expect a computer that will boot up and display websites quickly. If the students are not provided with the adequate hardware resources, than we are not providing our students with the resources they need to succeed.

Based on information provided in the District STP, the costs associated with replacing 25% of campus computers and 20% of printers and classroom projectors have been determined (see Appendix A). Further, the District indicated the cost for upgrading this hardware is to be funded by SCC through its budgeting and planning process. A five-year budget for upgrading all the SCC hardware is listed in Appendix B.

The College must be diligent to remain current in desktop computing with ongoing refresh cycles. Lease agreements or virtual client solutions may allow cost savings while deploying robust computing solutions to the desktops. Appendix C lists a small desktop virtualization implementation scenario that experienced a savings of 65% in hardware costs and 79% in energy consumption. Desktop virtualization is a promising solution to reduce costs in replacing and maintaining hardware, while consuming less energy.

Infrastructure support recommendations include:
1. Establish a process for the on-going upgrade of hardware and software
   A. Research the feasibility of adopting a leasing framework to upgrade 20% of computers.
   B. Research the feasibility of desktop virtualization technologies to better manage computer lab hardware.
2. Research the feasibility of placing digital signs on campus as a means for generating advertising revenue.
3. Provide a robust network and wireless access across the campus and at the off-site locations.

PRODUCTIVITY

Students expect the College Website to be maintained and organized in an easily accessible manner. The maintenance by committee approach of updating the SCC Website is not consistent with this expectation. In addition, the major additions to the SCC Website are performed by an outside contractor. The Website needs a redesign and reorganization to ensure that a consistent message is being delivered to the student through the Web, social media, or any future mobile
applications. A College webmaster is recommended to give rebirth to the College’s Web presence and facilitate student access.

Productivity support recommendations include:
1. Hire a Webmaster to maintain the SCC Website and manage the College’s web presence
2. Reorganize the SCC Website to be more accessible.
3. Upgrade the Website’s SharePoint technology to a newer version.
4. Improve the communication with students, colleagues, and community during faculty and staff absences by implementing an Out-of-Network, Out-of-Office assistant.

XI. GOVERNANCE AND PLANNING STRUCTURE
The RSCCD District Planning and Budget Flowchart provides a graphic representation of how the campuses planning and budget drives the District technology operational priorities. The governance structure supports the Accrediting Commission for Community and Junior Colleges (ACCJC’s) goal for technology planning. The intent is to have planning inform the budget and for assessment to inform planning. The budget and planning process is linked to the campus Educational Master Plan.
From a District perspective, each college’s Technology Committee serves as a lead voice in promoting technology at their respective campus. They work with the District Technology Advisory Group (TAG) in coordinating software purchases across both colleges, advocating for emerging technologies, and for developing District technology priorities as stated in the STP.

From a College perspective, SCC’s Collegial Governance Framework demonstrates the link between the College’s planning and budget process. The intent of the planning process is to demonstrate accountability measures that link planning to budget and resource allocation.

XII. INTEGRATION WITH EDUCATIONAL MASTER PLAN

The Accrediting Commission for Community and Junior Colleges (ACCJC) Standard IIID-1.2 stipulates that technology planning is integrated with institutional planning and requires the institution to systematically assess the effective use of technology resources and use the results of the evaluation as the basis for improvement (see Appendix D).

“1A. Technology resources are used to support student learning programs and services to improve institutional effectiveness.

1. Technology services, professional support, facilities, hardware, and software are
1. The institution is designed to enhance the operation and effectiveness of the institution?
2. The institution provides quality training in the effective application of its information technology to students and personnel?
3. The institution provides systematically plans, acquires, maintains and upgrades or replaces technology infrastructure and equipment to meet institutional needs?
4. The distribution and utilization of technology resources support the development, maintenance, and enhancement of its programs and services?”

SCC’s Educational Master Plan Committee (EMPC) provides leadership for the cyclical revision of the Educational Master Plan (EMP), which is constructed from the plans of each department, discipline, or program from the areas of Academic Affairs, Student Services, and Administrative Services.

The EMPC membership includes: faculty (6, including committee chair), administrators (2), classified staff (4) and a student representative. 

Image 4 – SCC Planning and Budgeting Process
XIII. PLANNING CYCLE

SCC’s planning cycle includes a coordinated effort between the Department Chairs, Divisions Deans, and Vice Presidents, in prioritizing requests collected from the Department Planning Portfolio (DPP) for discussion, review and prioritization for planning and budget council. These requests include the hardware, software, or technology staffing needs identified by each department. This cycle of planning is then integrated into the college’s Educational Master Plan (EMP). The process for planning on the SCC campus includes:

1. Collect DPP Plans and manage their integration into the EMP of the college
2. Synthesize annual requests into a prioritized master list of current needs for personnel, equipment, technology, facilities, and supplies in order to make recommendations to the College Council
3. Administer the Program Review Process
4. Coordinate with the Accreditation and Curriculum Committees
5. Present to the Performance and Institutional Effectiveness Committee for budgetary consideration

XIV. BUDGET CYCLE

At SCC, budgeting resides under the Office of the Vice President, Administrative Services which is responsible for coordinating the development of the College’s annual budget. Starting in the spring, the Leadership Teams (Department Chairs, Division Deans, Vice Presidents, and President) review priorities, goals, strategic direction, prior year’s activities, and requests for new funding via DPPs. A tentative priority list is established and taken to the Performance and Institutional Effectiveness (PIE) committee for review, discussion, and resource allocation.

Every year, after resources have been allocated through the planning and budget process each administrative area (Student Services, Academic Affairs, and Administrative Services) develops measurable outcomes for the upcoming year. These are reviewed by College Council and approved by the President. The Department Chairs, Division Deans, and Vice Presidents review the department plans to ensure the goals are being met.

XV. TECHNOLOGY FUNDING CHALLENGES

The SCC planning cycle is dependent on the DPPs to identify the technology needs for each respective department. The technology needs are prioritized with the other staffing, equipment, facility, and supply requests. Theoretically, the process accommodates for the technology needs of the College, however, in practice, technology at the College is undervalued. It is not given the same priority as other resources. Compound this assumption with a fiscally constrained budget and it becomes very difficult to keep pace with instructional technology trends, hardware currency, and adequate staffing. As this condition persists, the technology “hurdle” will get higher and higher and will require increased funding to overcome and maintain our currency deficits.
XVI. SUMMARY

SCC is growing a college that is striving to shed its “small college” image. Part of this maturation process is accepting technology as a vital resource that enhances all of the excellent qualities SCC provides through its excellent faculty, staff and students. The core “enterprise” of IT infrastructure SCC shares with the District is well supported through the District ITS and prioritized in the STP. The centrally managed technical resources of network connectivity, WiFi, systems, and data centers are well maintained, upgraded, and centrally funded. At the College, funding sources for technology hardware, software, or staffing projects are challenging given the continuous stagnation of the State economy. In addition, because of the lack of training resources and implementation knowledge, technology is misperceived as not adding value to the classroom. SCC must recognize the need to prioritize funding to emphasize technology in the classroom, upgrade hardware, training and development and staff positions. Technology must start to be an elevated component of the campus planning and institutional effectiveness initiatives. This is necessary so that the technology needs of our students, faculty and staff are to be met.
APPENDIX A

Appendix A – SCC Hardware Replacement Costs

The District STP has estimated the funding it will take to replace 25% campus computers and 20% of printers and classroom projectors. The cost for upgrading this hardware is to be funded by the SCC through its budgeting and planning process. Summary counts and replacement costs are below. A more detailed plan with five year budgets is in Appendix B.

SCC Main Campus
Academic Computers $33,600
Classroom Computers $335,700
Administrative Computers $98,400
Printers $40,320
Projectors $89,600
Servers $17,160
SubTotal $614,780

SCC Noncredit Center at OEC
Academic Computers $180,000
Administrative Computers $22,500
Printers $14,720
Projectors $30,400
SubTotal $247,620

Total $862,400
## Appendix B – Five-Year Hardware Replacement Costs

The District STP lists an estimated five-year replacement budget to upgrade the entire SCC hardware inventory. For the SCC main campus, the replacement cost would be $3,073,900. For the SCC noncredit center at OEC, the cost would be $1,238,100.

**SCC Main Campus – $3,073,900**

**OEC Noncredit Center – $1,238,100**

**Total Costs - $4,312,000**

### Table: Five-Year Hardware Replacement Costs

<table>
<thead>
<tr>
<th>Division Name</th>
<th>12/13</th>
<th>13/14</th>
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<th>15/16</th>
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<tr>
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<tr>
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### Table: Five-Year Hardware Replacement Costs

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<td><strong>Business &amp; Career Technical Education</strong></td>
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<td><strong>Continuing Education</strong></td>
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<tr>
<td><strong>Exercise Science &amp; Athletics</strong></td>
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<td><strong>Humanities, Social Sciences, and Art</strong></td>
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<td><strong>Library</strong></td>
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<td><strong>Math &amp; Science</strong></td>
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<td><strong>SCC - ADEP</strong></td>
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<td><strong>SCC - EOPS</strong></td>
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<td><strong>SCC - Health Center</strong></td>
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<td><strong>SCC - OEC</strong></td>
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<tr>
<td><strong>SCC - Student Services</strong></td>
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</tr>
<tr>
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<tr>
<td><strong>Total Administrative</strong></td>
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</tr>
<tr>
<td><strong>Total Administrative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Printers</strong></td>
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<td></td>
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<tr>
<td><strong>Projectors</strong></td>
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<tr>
<td><strong>Servers</strong></td>
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<tr>
<td><strong>Grand Total</strong></td>
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### SCC Noncredit Center at OEC

#### Appendix E—Santiago Canyon College Continuing Education

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<th>Division Name</th>
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<th>Cost</th>
<th>Replace Factor</th>
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<td>247,020</td>
<td>1,238,100</td>
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APPENDIX C

Appendix C – Desktop Virtualization

The District STP provides a scenario for implementing an NComputing desktop virtualization technology at the College, compared to purchasing five PCs.

<table>
<thead>
<tr>
<th>ACQUISITION COST COMPARISON</th>
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</thead>
<tbody>
<tr>
<td>Acquisition cost of 5 PCs deployment (no NComputing)</td>
<td>$6,000</td>
</tr>
<tr>
<td>Acquisition cost of an NComputing deployment consists of:</td>
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<tr>
<td>1) Shared PCs</td>
<td>$1,200</td>
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<tr>
<td>2) Access devices</td>
<td>$320</td>
</tr>
<tr>
<td>3) Extra monitors</td>
<td>$400</td>
</tr>
<tr>
<td>4) Extra keyboards &amp; monitors</td>
<td>$80</td>
</tr>
<tr>
<td>5) Additional licenses</td>
<td>$80</td>
</tr>
<tr>
<td>Total acquisition cost of an NComputing deployment (including shared PCs):</td>
<td>$2,080</td>
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</table>

You save this much with NComputing: $3,920
Which is a savings of: 65%

<table>
<thead>
<tr>
<th>ANNUAL ENERGY COST COMPARISON</th>
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<tbody>
<tr>
<td>Energy consumption of 5 PCs (no NComputing) deployment in kilowatt hours</td>
<td>1.650</td>
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<tr>
<td>Energy cost of an all-PC solution</td>
<td>$252</td>
</tr>
<tr>
<td>Energy consumption of an NComputing deployment (including shared PCs) in kilowatt hours</td>
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<tr>
<td>Energy cost of the NComputing deployment (including shared PCs)</td>
<td>$52</td>
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<tr>
<td>Reduction in energy consumption in kilowatts hours</td>
<td>1,308</td>
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<tr>
<td>Reduction in energy consumption (compared to all-PC):</td>
<td>79%</td>
</tr>
<tr>
<td>Annual electrical cost savings when NComputing is deployed:</td>
<td>$200</td>
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APPENDIX D

Appendix D – SCC FACULTY SURVEY

In response to a request from the District Technology Advisory Group (TAG) about the use of technology in the classroom, the Santiago Canyon College (SCC) Technology Committee surveyed all SCC faculty October 21 through November 4, 2011 for the purpose of gathering this information. The survey asked the following:

- What technology do you use in your teaching?
- What technology do you want to use but is currently not available to you?
- What technology support do you need to effectively use technology in the classroom/online?

There were 64 responses:

- 23 Arts, Humanities, and Social Sciences
- 6 Business and Career Technology
- 1 Counseling
- 3 Library
- 16 Mathematics and Sciences
- 12 OEC
- 3 Division affiliation not identified

The technology survey conducted amongst the faculty at SCC shows a strong interest in using technology in the classroom. The survey also indicates a great desire for training related to creating video, recording lectures, and recording Podcasts. There is also no evidence of a unified vision for how to use technology in the classroom or in the online environment. SCC’s faculty are interested in keeping up with what is new in educational technology, but are expressing a broad disappointment with the lack of instructional design and learning technology support. The survey indicated a strong need for an instructional designer and educational technology support staff. The survey also revealed a strong need for updated computer hardware and software to support instructional technology. The request was strongest for a MAC computer lab, software purchases, and high Technology lab equipment.

i. What Technology Do You Use in Your Teaching

The survey data indicates that almost all the respondents use some technology in the classroom. Technology equipment found in the classroom includes:

- computers, i.e., desk top computers, laptops and/or tablets PCs -- (58 responses)
  - minimally, a computer for the instructor is used and approximately, a third of the respondents indicated that computers were available for student classroom and/or lab
- projectors [primarily LCD] -- (58 responses)
- document cameras, scanners, and or cameras -- (9 responses)
- DVD, video, and/or CD players -- (8 responses)
other equipment to a lesser extent, e.g., clickers (1 response), graphing calculators -- (2 responses); SmartBoard -- (1 response); other mobile devices, i.e., smartphone, iPod -- (1 response each)

The applications, programs, or systems that faculty members are currently using include:

- Course management systems, e.g., Black Board, Sakai, Micrograde -- (18 responses)
- Presentation tools, e.g., Power Point, Captivate, SnagIt, etc. -- (20 responses)
- Video, i.e., DVD, You Tube videos, VHS, streaming video databases -- (20 responses)
- Internet -- (19 responses)
- Podcasts -- (3 responses)
- Classroom computer management tool -- (3 responses)
- Communication tools, e.g., Skype, CCC Confer [latter used to scheduling extra office hours] -- (2 responses)
- TurnItIn -- (2 responses)
- Social networking tools, e.g., Twitter, Facebook, etc. -- (1 response)
- Variety of course or program-specific software & applications for language instruction, engineering, surveying, language instruction, computer science, business, physiology, mathematics, art/graphic arts, music, library

ii. What Technology Do You Want to Use But is Currently Not Available to You?

Technology equipment that faculty members would like to have available:

- need for a dedicated MAC computer lab with a suite of drawing, design, painting software that supports the studio art/design/art history/ art concepts/ 2D and 3D design courses
- Campus computer lab staffed by trained instructional aides and/or technicians
- student response tool, e.g., clickers, Qwizdom -- (7 responses),
- tablet PCs -- (7 responses)
- document scanners/scanners/cameras -- (5 responses)
- MAC computers for instructors and student classroom use -- (4 responses)
- Smart Board -- (4 responses)
- projectors, including correct ICC color projection for proper color presentation -- (2 responses); also need new projectors to replace old, poor resolution quality equipment
- recording equipment for video and/or audio -- (2 responses)
- playback equipment for video and/or audio -- (2 responses)
- printers for course-specific classrooms including color printer with the ability to produce the quality of image students need to complete projects -- (3 responses)
- large computer monitors to accommodate those with vision disabilities
- instructor PC and Apple smart carts
- fast, reliable Internet access for faculty in off-site classrooms
- Other course or program-specific equipment, e.g., electronic lab probes, pH, thermometers

Software, applications, and program that faculty would like to have available are:

- presentation software including video/podcasting editing -- (5 responses)
• classroom computer management program – (2 responses)
• software to create interactive online tutorials – (1 response)
• college portal
• iCloud to link all MAC platforms – (1 request)
• streaming video clip and/or video library database subscription
• Course and/or discipline-specific software, iPad apps, and/or web-based programs for language instruction, surveying, engineering, studio art, fine art, digital design, music, library

iii. What Technology Do You Need to Effectively Use Technology in the Classroom/Online?
Technology support needs as expressed by the SCC Faculty include:
• more technical support, including more MAC knowledgeable technicians --(11) responses)
• a need for a more robust, reliable network and wireless network
• support of streaming video streaming through the network
• updating of computer workstations, including sound/video functionalities -- (4 responses)
• upgrading the sole MAC computer in the Faculty Development Center
• access to tablet PCs
• more faculty input on configuration/location of technology in classrooms
• prompt response to servicing equipment --(3 responses)
• well maintained, reliable instructor and student computers
• faculty support center for help, for learning “best practices” for using technology, and for finding out what technology is available
• help in determining what technology is available and then, how to use it
APPENDIX E

Appendix E - SCC TMP Sub-Committee

1. Curt Childress
2. Emily Diaz – CISCO Systems
3. Corine Doughty
4. Scott James
5. Ron Kessler
6. Stew Myers
7. Sergio Rodriguez
BIBLIOGRAPHY
Santiago Canyon College Faculty Technology Survey, Fall 2011: Report Submitted by the Santiago Canyon College Technology Committee February 8, 2012.