

California Community Colleges Technology III Plan



Information Technologies
Powering the CCC Vision



2007-2010

EXECUTIVE SUMMARY

In support of the California Community Colleges (CCC) first System Strategic Plan (SSP), the Technology III Plan: 2007-2010 (Tech III) articulates a framework and direction for information and communications technologies that support the overall vision in the CCC Strategic Plan:

“California’s community colleges provide upward social and economic mobility through a commitment to open access and student success by delivering high quality, affordable, and comprehensive higher education.”

A key part of the mission of California’s community colleges is providing “an appropriate place in California public higher education for every student who is willing and able to benefit from attendance.”³ The CCC is often referred to as the state’s “open door” to post-secondary education. This mission is significant in that two-thirds of California’s first-time higher education students begin their academic careers at community colleges.

The CCC vision is a challenging one and worthy of our efforts. There is much to lose if this vision is left unfulfilled. Now more than ever before, the level of education and skill of the nation’s workforce is inextricably linked to the strength and health of our economy and standard of living. Over a hundred years ago, it was the shift from the agrarian society to an industrialized society wherein occupational and basic literacy skills became more essential for obtaining a decent job. Over the years, the nation created policies and infrastructures to provide these basic skills, and the result was dominance in manufacturing and the highest standard of living in the world.

In today’s global marketplace, labor can be found by “off-shoring” work to countries where it is less expensive. The shift from manufacturing markets to “knowledge-based markets” has already occurred. Between 2004 and 2014, the college labor market clusters (professional, management, technical, and high-level sales) are expected to generate almost half of all job growth in the U.S. economy. Our nation is faced with a startling choice: accept the prevailing-world-wage levels for low-skilled and semi-skilled labor and the subsequent massive decline in our standard of living or compete in another niche or at another level in this global economy.

Unwilling to acquiesce our standard of living, the nation’s business and political leaders have chosen to revise the view of the worker and economy to compete in a niche dominated by the wide-scale use of very skilled workers, backed up by the

³ California Education Code Section 66201

most advanced technologies available. This “high-wage strategy” requires labor with a level of knowledge and skills typically gained only through programs offered at colleges and universities. Those who are educated, continue skills development through their working lives, and have higher cognitive skills, earn substantially more over their lifetimes, and enjoy a higher standard of living than those who are lacking in these attributes.

Bluntly put, to be successful in our “high-wage strategy,” workers must be increasingly well educated, have basic skills that exceed just the “old basics” of reading, writing, and arithmetic, have better cognitive skills to increase overall earning power, and be well skilled in the use of information technologies (IT).

Unfortunately, the need for such an educated workforce stands in stark contrast to how well the nation seems to be educating its population. In the past twenty years, graduation rates have declined, overall test scores have remained flat at best, and many employers report weak or insufficient skills in those entering the workforce. Furthermore, by 2030, the U.S. population is expected to grow by 60 million people to nearly 360 million, and the nation will increasingly become more multilingual and multiethnic. By 2025, California will add between 7 and 11 million people, a large percentage of whom will be of Latino or Asian descent. Many will be immigrants, whose level of education is typically less than what is needed to be successful in California’s vibrant and quickly changing business environment. Some of our future students—part of the “Net Generation,” or Net Gen⁴—will be fully functional with IT while others—likely immigrants—will not be. These demographics don’t bode well.

Consequently, in recent years, there’s been increased pressure on our nation’s educational systems to be accountable for learning outcomes, demonstrate effective stewardship of funding, and promote better alignment of state education policies and practices across the entire educational system—K-12 and higher education. To rise to these challenges, higher education in general, and the CCC system specifically, needs to use IT strategically. To some extent, it is the advance that caused some of the challenges we face; optimistically, it is likely to be IT and other technologies that will help us overcome these obstacles.

The realm of IT, too, is also changing rapidly. The Internet continues to rapidly evolve, and new ways of interaction, like social networking, blogging, and user-created content, are immensely popular ways that students interact and contribute. Computing and communication devices are becoming increasingly mobile, and the members of the Net Gen fully expect an expansion of e-learning and support systems. Social networking and user-created content create interesting opportunities as well as challenges for teaching, learning, and academic research.

⁴ A term coined to refer to those students who were born after 1982 and raised with the Internet as a common element of everyday life.

In response to the trends, challenges, and advances in IT, Tech III focuses on: ensuring secure and reliable access to the Internet, realizing the cost effectiveness of the infrastructure and the interconnectivities, and providing technology-driven components for successful implementation of the CCC System Strategic Plan. By continuing the already established focus on cost-effective solutions, achieving economies of scale for all colleges, and starting technology efforts as pilot projects with a subset of the colleges and then leading successful projects into full development, Tech III offers the next iteration of technology priorities for the CCC system and the next phase of ongoing planning in support of the System Strategic Plan.

Tech III proposes five initiatives. Each is sufficiently broad to serve as an impetus toward direction but does not represent a project plan. Each initiative presents a system solution for a system-level problem and has several elements. The initiatives are:

- ◆ **Infrastructure Initiative:** composed of projects aimed at bolstering key capabilities needed for reliable IT connectivity that is considered standard practice in industry. Specifically, the envisioned projects will establish redundant circuits, creating multiple pathways for connectivity; ongoing funding for connectivity of CCC-approved educational centers, known as off-site centers; and bolstering or establishing a baseline of wireless infrastructure at the various campuses.
- ◆ **Institutional Performance Toolkit:** composed of projects focused on providing key tools with the most utility for accountability and data-driven decision making, particularly in capturing learning content at the system level and connecting metrics to institutional performance. Specifically, the envisioned projects include the development and delivery of the following system-level tools:
 - **“Accreditation Wizard:”** a tool that will help a district to 1) organize more effectively and efficiently the data, information, and analysis needed to create a “culture of evidence” and 2) ultimately, support greater efficiencies and effectiveness in local accreditation efforts.
 - **Assessment Tool:** a systemwide, Web-based site for centralized versions of the most widely used assessment tools.
 - **Geographic Information System:** a centralized, system-level computer system that allows users to quickly combine and display large number of datasets interchangeably and interactively. Such maps provide enhanced analysis and better decision-making tools in a variety of efforts, such as enrollment management, educational and workforce development planning, capital planning, and others.

- ◆ **Adjustment of IT Funding Model:** composed of efforts—many already underway—to institutionalize the IT education of faculty, staff, and students to enable them to evolve toward greater use of IT as the pedagogies continue to develop. This initiative requests an increase in funding to the Telecommunications and Technology Infrastructure Program (TTIP) to cover successful programs that are still funded at fiscal year 1998 levels although demand has steadily increased since originally established.
- ◆ **IT Communications and Outreach:** composed of benchmarking efforts with subsequent analysis and action planning to determine optimal communication means and methods to increase intersegmental awareness of the system-level IT resources available to students, faculty, staff, and administrators. Increasing the use of the existing communication and outreach capabilities will leverage prior investments and realize greater cost efficiencies and effectiveness across the CCC system.
- ◆ **Digital Marketplace and Enterprise Service Business:** composed of projects aimed at integrating various enterprise-level applications at the CCC system level, including:
 - Creating interoperability between Course Management Systems (CMS) and Enterprise Resource Planning (ERP) applications currently in use within the CCC system.
 - Expanding the CCC System Office Data Mart: a database for collecting and reporting data elements pertaining to student demographics, FTES by traditional and distance education courses, matriculation, and similar statistics. This would entail linking the Data Mart via auto feed to the K-12 system, thereby facilitating protracted longitudinal studies with an increased ability to follow student outcomes over a longer period of time.
 - Expanding multiple ERP vendor’s “Data Warehouses.” This project aims at working with the multiple vendors to deliver increased access to data within and across ERP systems. Presently, getting to such data is unwieldy or not timely enough to support decision-making.
 - Connecting CCC system-level capabilities with the California State University (CSU) Data Mart—an intelligent library system of digital content, learning objects, and courses that include free and fee-based academic content from a variety of vendors. This project would enable faculty to search course curriculum, buy/sell content and materials online, and import materials into any of the major CMS applications available today.

Emerging Concepts, representing information technologies and/or strategies for proof of concept within the CCC system, are also presented. These emerging concepts include current pilot projects, discuss future directions, and highlight key areas for monitoring throughout the upcoming planning cycle.

INTRODUCTION

Created by legislation in 1967, the California Community Colleges (CCC) system is the largest system of higher education in the U.S. The system comprises seventy-two districts and 109 colleges serving more than 2.5 million students annually. Two-thirds of California's first-time higher education students begin their academic careers at community colleges. Together with the research-oriented University of California (UC) and the teaching-oriented California State University (CSU) systems, the CCC system forms California's public higher-education system. Almost sixty percent of all graduates of the CSU system and thirty percent of the UC system transferred from a California community college. Moreover, community colleges supply workforce training and basic skills education, prepare students for transfer to four-year institutions, and offer opportunities for personal enrichment and lifelong learning.

Under the 1960 Master Plan for Higher Education, the UC and CSU systems were to limit their enrollments, yet an overall goal was established "to provide an appropriate place in California public higher education for every student who is willing and able to benefit from attendance," meaning that the community colleges should fulfill this role. In this way, the CCC is the state's "open door" to post-secondary education. That's a daunting mission, given that the CCC system receives the least funding per capita of all the California higher-education systems.

It is estimated that by 2025, California will add between 7 and 11 million people. The present and future changes to demographics, the economy, and labor markets will place significant demands on California's educational system, and this, in turn, will increase the importance of California's community colleges dramatically. The state and the CCC system will need to increase educational capacity to serve the additional students and workforce participants generated by this growth.

At the same time, colleges will need to ensure that Californians of any race, sex, age, color, ethnicity, disability, economic means, or national origin have access to a community college education. Expanding universal access to everyone who can benefit and helping in ways that contribute to their success is essential to the economic and social health of California as high technology industries, the service sector, and emerging fields continue to fuel the state's growth.

As information technologies are now the basis for how people work, learn, communicate with each other, and conduct business, the strategic use of such technologies to meet the challenges ahead is all the more critical.