

Division of Academic Affairs
Strategic Planning and Budget Cycle
Three-Year Rolling Budget/Hiring Plan for FYs 19/20, 20/21 and 21/22
Part I: Narrative, Sections A and B

Subdivision Unit: Instructional & Information Technology Services

1) Begin here enumerating planning assumptions for the unit

Assumption #1: Implement Technology Strategic Plan: The first of its kind Unified Technology Strategic Plan (TSP) was approved in spring 2018 establishing the campus vision, mission, and IT strategic priorities for the next 5 years. The Information Management Steering Committee (IMSC) identified five (5) strategic initiatives for implementation. Implementation projects for these initiatives in FY 18/19 are outlined as follows:

Assumption 1a) Campus Mobile App: *The Campus Mobile App will continue to grow in usage and will likely become one of the primary points of student electronic interaction with campus services that will expand to include retail transaction functions, appointment scheduling, and student engagement features.* CSUSM has had a mobile app platform since Fall 2016 and over the past two years the App adoption has grown significantly as functionality has expanded. In the Fall of 2018, the Campus App added a vibrant new look, increased personalization and full access to all Student Information System functions, the Learning Management System, and increased communication on events. Tracking data found that an average of 1,923 users accessed the mobile app each day of the semester. Top functions included access to Cougar Courses (279,851 visits), MyCSUSM (186,774), and the Message Center (47,857).

Assumption 1b) Digitalization/Electronic Workflow: *The replacement of paper forms and the requirement for original (non-electronic) signatures on documents. Changes in platform may be required and/or additional funding provided to reach campus-wide adoption.* – In FY 18/19, CSUSM adopted an eSignature Policy to promote the use of electronic forms. Additionally, CSUSM purchased an enterprise license of DocuSign as the campus' standardized platform for electronic forms. IITS is working to resolve an issue of unanticipated changes in DocuSign licensing through Internet2, which resulted in increased and potentially unsustainable licensing costs.

Assumption 1c) Unified Communications System: *CSUSM will include technologies that enable targeted and managed communications to increase the effectiveness of university messaging and services to students.* While students interact with the university in-person, via the phone, and online, the official communications method of CSUSM is via student email. Email appears to be an unreliable way to reach the student population. CSUSM is looking to adopt a more targeted and personalized communication strategy that includes multiple electronic communication channels (including chat/chatbots), personalized portals, mobile tools, and modernized telecommunications platform.

Assumption 1d) Constituent Relationship Management (CRM): *Each fiscal year additional functional units will be added to the CRM system in order to track campus service delivery, coordinate communications, and provide a 360-degree view of individuals connected to CSUSM.* CSUSM has countless touch points with current students, campus community, and the external populations of prospective students, donors, vendors, and others. Effectively managing communications, enhancing service delivery, and coordinating the many connection points within the university will require the deployment of a unified CRM. In FY 18/19, CSUSM initiated the CRM pilot project with Community Engagement, Enrollment Management Services, and Extended Learning units with additional expansions planned.

Assumption 1e) eOne Card System: *CSUSM will initiate the eOne Card System in conjunction with campus vendors. System will be in place to support meal plan services by 2020. CSUSM will establish some form of "card office" and staffing to support the operational and financial functions for campus retail card operations.* CSUSM does not currently have a campus retail system that would facilitate and promote the use of on-campus retail services and spending. Historically, One Card Systems used physical plastic cards for campus ID, door access, and swipe card retail functions. In FY 18/19, CSUSM introduced an electronic campus ID within the Campus App. Without any publicity, the system grew on its own to 4,577 users who accessed the system almost 19,000 times. Looking forward, CSUSM will seek to deploy an electronic card within the Campus App (with a physical card option) that would phase in support for services such as meal plans as they are offered.

Assumption 1f) Faculty Research / Learning Environments: *CSUSM will support faculty research, new learning environments, and services by continuing to innovate with space usage and technology. Growing research grants on campus will require additional technology support resources. CSUSM will deploy new online services and systems to meet changing learning and online service styles, delivery methods, and expectations.* As part of the Technology Strategic Plan, CSUSM will support faculty research, explore new learning environments, and deploy updated and new technology supported services and technology enhanced spaces. The newly renovated Technology Learning Center is an example of one of these projects. With user-friendly spaces that included new larger monitors and ergonomic desks and chairs, in addition to more functional furniture for group work, the redesigned space is now a popular study destination that is clearly appealing to students. Data from Fall'18 recorded that usage was up 74% (sampled Monday – Thursday).

Assumption #2: Further Stabilize Technology Funding Model: *There will need to be continued investment in IITS just to meet existing IT budgetary commitments and sustain a multi-year funding model to support campus Technology Strategic Plan projects, IITS services, and professional IT staffing.* In FY 18/19 CSUSM achieved multiple goals related to stabilizing technology funding. First among them was the pay-off of all historical technology debt funding, which peaked in FY 16/17 at \$2 million dollars. The operational impact of paying off the financial debt was a 20% drop in current period IT spending starting in 2015. Rebuilding the campus' investment in technology, CSUSM approved \$800,000 in funding in FY 17/18 and an additional \$550,000 in permanent funds in FY 18/19. The Technology Refresh Program is now permanently funded with \$1.35 million. With funding in place, the Information Management Steering Committee approved a list of scheduled classroom computer equipment replacements

in addition to funding for all permanent General Fund (GF) faculty and staff. CSUSM has also sought to eliminate the practice of GF charge-back procedures in FY 18/19 that had helped to fund several campus functions. For IITS, chargebacks have long supported the telephone system in addition being an important secondary funding source for the Technology Refresh Program equipment and services. In FY 18/19, IITS received approximately \$645,000 in funding towards this effort. At this reduced funding level, it is estimated that the new funds will only cover the expenses for the telephone system and usage charges, based on projected and known expenses along with reduced funding from changes in the GF chargeback model.

Assumption 2a) Funding Technology Refresh Program (TRP): *All General Fund faculty and staff will receive four-year scheduled replacement equipment via the Technology Refresh Program (TRP). Computer equipment in classrooms, labs, and conference rooms that are generally open for use by members of the campus community will be replaced under this program. Additions to the program must be approved by IMSC per program requirements. The TRP has successfully been funded at a fixed amount of \$1.35 million; this amount is estimated to be sufficient to meet projected faculty and staff refresh units and associated costs for the current four-year cycle. Some of the lab computers and conference room equipment has not been assigned to the program and funding remains in question.*

Assumption 2b) Finalize Chargeback Model: *With the technology loans paid off and TRP permanent funding established, the significant structural budget changes that have forced the unit to continually adjust its fiscal model are now finalized. IITS will prioritize stabilizing operations under the budget model that funded FY 18/19. IITS has gone through four years of structural funding changes. In FY 18/19, CSUSM eliminated General Fund chargebacks, which caused a significant level of confusion for campus units. The operational impact of eliminating chargebacks has resulted in more work for IITS, as it still tracks and reports billable activities for General Fund operations, and must continue charging auxiliaries and self-support entities for the use of IITS resources. It is a priority for IITS to have one to two years of budgetary stabilization in order to properly operationalize new standard procedures.*

Assumption 2c) Underfunding Projects: *In order to meet campus operational needs, IITS will require additional permanent funding over multiple fiscal years. Campus wide basic IT operational costs, as well as faculty research technology requests, and the operationalization of the approved Technology Strategic Plan initiatives will require funding levels approaching those of FY 14/15. While the campus has continued to grow both its faculty and staff positions, the number of IT support staff has remained constant. After peaking at \$12.5 million in FY 14/15, IITS actual operational spending dropped 20% to just over \$8.5 million in FY 16/17. Focused on rebuilding basic operational funding, IITS has spent several years looking for ways to free up resources by cutting back on software licensing, terminating professional services contracts, deferring purchases, denying technology requests, and have become dependent on salary savings. IITS had historically been known for its ability to fund projects and research technology, the unit is no longer positioned with the available discretionary funding to meet these historical and growing expectations.*

Assumption #3: Staff Retention Challenges: *Additional permanent resources (see 2c) will be necessary in order to stabilize the loss in staff/skills that has proven to be highly impactful to the campus IT operations.* Given the strong local employment market for skilled technology professionals, IITS continued to suffer from the departure of highly skilled staff members. IITS' highly trained and experienced staff are often recruited for significantly higher paying positions. There were five (5) staff departures due to compensation in FY 18/19. As was the case in the prior year, we do not see a strong job-ready candidate pool in our ongoing recruitments which often span several months. Given the ongoing difficulties in both retention and recruitment, this is a critical operational concern with staffing issues affecting all planning assumptions, IT support, and project plans. As IITS has implemented multiple IRPs prior to the most recent funding, the department has continued to operate below a full staff complement in order to utilize salary savings to fund prior year increases.

Assumption 3a) Competitive Salaries Required: *The strong IT employment pattern will continue until a change in the business cycle, placing ongoing demand on IITS to meet market salaries for highly skilled IT staff.* IITS has a small group of employees who have essential and highly valued technical skills; many now find their abilities in great demand by local employers. While these employees are generally happy at CSUSM, lower salaries, slower salary growth, and limited positional advancement are leading them to now look outside of the university. The cost of replacing these key employees is large, and the replacement employees often require significant training investment. Allowing our key employees with critical skills to leave due to inadequate salary is not cost effective.

Assumption 3b) Overwhelming Workload Creates Vulnerabilities: *The campus will look to move some services to a hosted/cloud environment to address some operational issues. There is a continued need and requirement to provide support in the evenings and weekends that exceeds staff availability.* Given the ongoing recruitment and retention challenges, IITS has been unable to make progress on workload vulnerabilities. As was the case in prior years, the workload for our critical skills employees remains high. Our highly skilled employees note that their incoming workload is intense, and the department does not have enough staff needed to ensure that at least two people have the expertise for core campus technology services.

Assumption 3c) Recruitment Difficulties: *Demand for technology workers will remain high and new hires to CSUSM will require competitive salaries or significant training.* The local technology employment marketplace does not favor CSUSM and people with appropriate technology skills often do not apply to CSU San Marcos due to our low salary range. Reshuffling staff has also been a common occurrence, however moving IITS staff internally creates vacancies in other areas which impacts IITS' ability to provide services and leads to the burn out of existing staff.

Assumption 3d) Professional Development: *CSUSM will continue to see growth in the use of third-party applications and a shifting of some on-campus IT services to the cloud.* Transitioning technology services and delivery methods will require retraining of staff to gain new and updated skills. The movement of some services to the cloud and SaaS

introduces significant job shifts in terms of the skills required to support applications and services that either did not exist or were formerly run on campus.

Assumption #4: Technology and Expectations Will Continually Evolve: *Changing expectations and perceived needs relative to technology have units across campus pushing for new applications and services for students as well as faculty and staff. IITS is encouraged by all of the technology-supported initiatives and will seek to deploy and support the capabilities necessary to make the campus more efficient and productive. As outlined in the 2018 campus Technology Strategic Plan, trends in technology are influencing society more than ever, shaping perspectives, changing life experiences, and shifting expectations for everyone. Students will expect universities to provide services uniquely suited to their academic and service needs. This is not limited to electronic versions of paper processes, but potentially new methods, which may be entirely different and require services that are highly efficient and secure.*

Assumption 4a) Increase Mobile App Usage: *We will see continued growth and reliance on mobile devices as primary method for accessing information. Mobile access via an app or responsive website has become the default means of accessing information and services for many industries. CSUSM's Mobile App is also seeing strong growth, with almost 2,000 daily users, a 65% increase in downloads (Fall 2018 vs Fall 2017), and over 1 million page views in just the top 10 functions. The challenge for CSUSM will be to continue to support and maintain a common university-wide platform and deliver personalized information.*

Assumption 4b) Cloud Migration: *CSUSM will migrate or adopt new services in the Cloud and will standardize to CSU system cloud providers and contracts where appropriate. The IT industry is continuing to shift towards a Cloud/vendor-hosted model for information systems and services. For instance, the campus' email and file storage are presently hosted by Microsoft for faculty, staff, and Google for students. The current period of significant technological change is once again realigning the roles of units like IITS, but it will also have an equally impactful budget effect. Often the costs of hosted solution are more expensive as vendor's price based upon usage models and regular cost increases that will have significant fiscal impacts. For CSUSM, the core challenge of this model is the move from one-time capital expenses to ongoing/fixed operating expenses that have less flexibility for adjustment during reduced budgeting cycles. Even with its higher costs and operating budget implications, CSUSM will be migrating core software and services to the Cloud to provide more redundancy and availability. An immediate example of that is the current project to explore the move of the campus learning management system (Moodle/Cougar Courses) to a hosted solution.*

Assumption 4c) Software as a Service (SaaS) Growth: *Services such as CRM, One Card, and LMS will be delivered via SaaS. CSUSM is transitioning some applications to Software-as-a-Service for a growing number of services. These SaaS applications generally provide a robust set of functionalities from which CSUSM staff then builds in customizations. Departments are also building their own SaaS services without the help of IITS. This provides an immediate solution for department needs, but as the information system evolves, it creates challenges when integrating with campus solutions.*

Assumption #5: Prioritize Campus Community Service: *Based upon feedback from faculty, staff, and students, there is a desire and need for providing support during evening hours (while classes are in session). Faculty, staff, and students are also looking to IITS to extend support hours into weekends, provide more self-help options, and enhance outreach/communications.* The campus' technology strategic planning process identified expanding support hours as a common request. As faculty and students teach/learn and work outside of normal operating hours, the need for IT support beyond 8 to 5 is a growing need. Additionally, data from the annual Campus Satisfaction Survey indicates that faculty and staff would like to see IITS provide workshops and training for the campus community. Adding to this need is a shifting service delivery model. For SaaS and online services, the concept of stable delivered software product has shifted to a model of constant change. The best example for CSUSM is Office365 which is in continual change. These ever-evolving platforms will bring about functional improvements, but at the cost of constant change and adaptation for users of these services.

5a) Extend Support / Service Catalog: *Work continues to identify internal or external means of providing after-hours and weekend support.* In FY 18/19 IITS deployed a new website intended to provide an easily accessible platform for finding self-help tools. A key element in this initiative was the development of a Service Catalog that clearly defines IT services and provides links to online and other support resources. IITS also deployed new websites for Technology Support Services, Academic Technology, and an IITS Project Management website. While these tools address some of the campus concerns for self-help, a key gap continues to be the matter of extending support hours.

5b) Communications Expectations: *The campus user community will need training and assistance to take full advantage of the technology solutions.* As CSUSM moved its faculty/staff file storage service from a prior provider to OneDrive/SharePoint, the struggles of technology adoption and use by faculty and staff were clearly highlighted through multiple channels including the campus' annual Customer Satisfaction Survey. This pattern will certainly be repeated as the campus adopts other systems that disrupt existing products and uses. The campus community is looking to IITS to provide regular training opportunities, extensive self-help tools, and more frequent communications on future technology initiatives that may impact their work.

5c) Direct Support: *Campus units will request and will benefit from dedicated IT support.* A model has been used in a few units to provide dedicated IITS staffing in support of unique technology support needs. This has proven to be good for the various departments, reducing the amount of time they spend addressing technology issues. IITS anticipates greater campus needs for this type of focused service and support to other departments that will require increased staffing.

Assumption #6: Sustaining Technology Infrastructure in a Hybrid Environment: *The campus IT infrastructure will become a blended environment of Cloud/SaaS offerings in addition to updated campus technology. Residual infrastructure will need to be supported for technologies such as telephone services (not migrated to the Cloud), on-campus file storage, virtual server environment, and hybrid/burst cloud environments. While IITS begins deploying new technologies and services outlined in the Technology Strategic Plan (Assumption #1), the unit will be realigning on-premise services, adjusting operational procedures, and identifying funding strategies to support evolving IT environments.*

6a) Deferred Infrastructure Investments: *Without replacement or migration to other service providers, older technology equipment will fail, causing outages and potentially disrupting campus operations. After a period of reduced IT spending (see Assumption #2), IITS has resumed limited investment in some of the campus' aging Data Center technologies utilizing salary and other cost savings. As the baseline IT infrastructure is critical to smooth campus operations, CSUSM must address the replacement funding for aging equipment with updated systems, offsite services, or elimination of services. Funding requests in FY 19/20 include: Hosted Moodle, Mitel Phone Conversion, ACD System, Infrastructure Refresh, and Off Campus Access.*

6b) Increasing IT Costs: *IT hardware, software, and hosted services costs will increase operating costs on a yearly basis. IITS continues to see increasing technology costs on almost all maintenance contracts for supported hardware and software products. Service renewals are coming in at a 16-20% annual increase. Changing IT service models will also increase costs.*

6c) System & Regulatory Compliance: *Increasing number of compliance requirements create additional operational requirements, new systems, and added staff responsibilities. CSUSM is committed to taking strong measures to protect the security and privacy of campus information assets, promoting the adoption of affordable learning materials, and deploying technologies that are equally accessible to all. New policies from the CSU, are particularly focused on information security and accessibility, which will require the campus to purchase new technology solutions for compliance and assign appropriate staffing. New CSU and web accessibility standards have required CSUSM to adjust operational practices.*

A. Goals by Fiscal Year

1) FY 2019/20 Goals

- a. List here specific goals for the Unit Assumptions enumerated above (e.g., identify which "assumption" the goal supports).

Support New Extended Learning Building (Assumptions: 2a, 2b, 2c, 3b, 5a, 5c, 6b) – The Extended Learning Building adds classrooms, offices, and centers that will increase the number of computers and network infrastructure. *Key Initiatives: Classroom of the Future, Dedicated IT Support, Additional Help Desk Resources*

Develop Constituent Relationship Management (CRM) (Assumptions: 1, 1d, 4, 4a, 4c) – IITS will continue to stabilize and establish our Salesforce instance by supporting and enhancing the Student Affairs, Extended Learning and Community Engagement pilot projects. IITS will expand our knowledge and expertise within the Salesforce system by partnering with one or more learning centers to identify and build functionality to improve student experiences. Work will include the Data Governance Committee to ensure that confidential information is shared appropriately as we include additional departments in this campus wide CRM system. *Key Initiatives: Salesforce Adoption*

Implement Unified Communications Plan (Assumptions: 1, 1a, 1c, 3, 3a, 3b, 3c, 3d, 6a) – IITS will use a multi-phased approach to replace the obsolete campus phone system with a combination of on-premise VoIP and Cloud-based phone services. Over the next 3 years IITS must migrate 1700 phones to a new solution as the existing phone system is no longer supported by the original manufacturer due to the age of the equipment. IITS will also deploy an updated contact center capable of adapting to users' preferred methods of communication (phone, email, SMS, chat, social media, etc.) *Key Initiatives: Unified Communications*

Transition to a Cloud-hosted Environment (Assumptions: 3, 3a, 3b, 3c, 3d, 4, 4b, 4c, 5, 5a, 5b, 6, 6a, 6b) – Opportunities for improving service and performance using hosted applications will be evaluated and implemented based on cost, performance, and opportunity. IITS is evaluating the move of the Learning Management System to a hosted solution. Another opportunity being evaluated is the Citrix/Virtual environment known as "CougarApps". *Key initiatives: Next Gen Learning Environment, Amazon Web Services/Microsoft Azure*

Expand Digitalization/Electronic Workflow (Assumptions: 1, 1b, 4, 4a, 4b, 4c) – In FY 18/19 CSUSM purchased an enterprise license of DocuSign as the campus' standardized platform for electronic forms. Changes in DocuSign licensing with Internet2 have subsequently changed the financial and licensing assumptions. Review of alternate vendors and options is needed to identify possible cost savings. *Key Initiatives: Electronic Signatures, Digitalization*

Implement eOneCard (Assumptions: 1, 1e, 4, 4a, 4b, 4c, 6, 6b) – Preparatory phase for eOneCard system deployment. Purchase and deployment of system using cloud vendor SaaS solution. Establishment of basic card printing operations, mobile integration, and IT startup. Implementation in coordination with CSUSM Corporation, campus financial services, and on-campus retail service providers. *Key Initiatives: eOneCard, Campus Meal Plans*

Support Augmented Reality / Virtual Reality (Assumptions: 1, 5, 5a, 5b, 5c) – During Fall 2018, Academic Technology worked closely with faculty to conceptualize an innovative studio area for experimenting, developing, exploring AR/VR/Immersive technologies. These spaces give students hands-on and collaborative experiences that complement classroom instruction. The goal is to have this new space available to faculty and students by fall 2019. *Key Initiatives: Media Production Studios*

Automate Enterprise-wide Role Based Access Control (Assumptions: 4, 4a, 4b, 4c, 5, 5a, 5b, 5c, 6, 6a, 6b, 6c) – In order to maximize operational efficiency, automated role-based access needs to be a priority. The goal of the multi-year project is to establish a standardized process for engineering roles so that the majority of access is ready on day one of employment, and to automate access requests or job changes. The multi-year strategy may require an increase in system tools licensing. *Key Initiatives: Role Based Access Control (RBAC)*

Invest in Virtual Systems for Off Campus Access (Assumptions: 2, 2b, 2c, 3, 3a, 3b, 3d, 5, 6, 6a, 6b, 6c) – The CougarApps environment supports an increasing number of campus needs ranging from off-campus availability of academic software (the original purpose) to allowing employees to work from home (an increasing use). IITS projects that there will be a requirement for increased licensing for some of our key services (authentication) in order to address growth. On-campus replacement is currently planned, but cloud options will be evaluated for efficiency and value. *Key initiatives: Virtual Desktop, Faculty/Staff/Student Access, Amazon Web Services/Microsoft Azure*

Refresh the Core Information Technologies (Assumptions: 1, 1c, 2, 2b, 2c, 3, 3a, 3d, 5, 6, 6a, 6b, 6c) – IITS deferred all major Data Center investments from FY 14/15 until FY 17/18 when the unit completed the purchase of a partial phone system replacement, centralized file system, load balancer and surveillance camera servers. This year IITS must continue to replace aging hardware. The campus uses a virtual server system model to support a range of uses from web servers, print servers, department shares and databases. This virtual campus hybrid cloud environment was purchased more than five years ago (2011 and 2014) and must be replaced, as the risk of outage grows as the system ages. *Key Initiatives: On-campus Storage, Migration to OneDrive, Virtual Server Environment, Development of a Hybrid Cloud Environment*

2) FY 2020/21 Goals

a. List here specific goals for the Unit Assumptions enumerated above (e.g., identify which "assumption" the goal supports).

Expand Constituent Relationship Management (CRM) (Assumptions: 1, 1d, 3, 3a, 3d, 4, 4a, 4c) – IITS will continue to expand the adoption of Salesforce to achieve the goal of a connected campus by developing solutions to facilitate engagement and success for areas like Student Life and Leadership and Advising. Salesforce Communities will be configured to create a student portal where students can find information targeted specifically to their educational journey. *Key Initiatives: Salesforce Adoption*

Retail Operations Active in eOneCard (Assumptions: 1, 1e, 4, 4a, 4b, 4c, 6b) – Operational phase of eOneCard. Establishment of a "card office", operational financial services, and retail connections. Implementation in coordination with CSUSM Corporation, Sodexo, and campus financial services units. *Key Initiatives: eOneCard, Campus Meal Plans*

Cloud Implementation Strategy (Assumptions: 1, 1f, 3a, 3b, 3c, 3d, 4b, 4c, 5, 5a, 5b, 6, 6a, 6b) – IITS will evaluate and plan for the on-premise and cloud resources necessary to implement and maintain campus systems and services on a case-by-case basis with an overall strategy of reducing cost and increasing services. *Key Initiatives: Operationalize Hybrid Cloud Environment*

Unified Communications Plan (Assumptions: 1, 1c, 3, 3a, 3b, 3c, 3d, 6a) – Ongoing 3-year migration of campus phones to a new solution. *Key Initiatives: Unified Communications*

3) FY 2021/22 Goals

a. List here specific goals for the Unit Assumptions enumerated above (e.g., identify which "assumption" the goal supports).

Expand Constituent Relationship Management (CRM) (Assumptions: 1, 1d, 3, 3a, 3d, 4, 4a, 4c) – IITS will work with campus departments to implement a unified communication platform within the CRM that will provide a comprehensive view of how the campus is communicating to students with the goal of consolidating and personalizing email communication. *Key Initiatives: Salesforce Adoption*

Cloud Implementation Strategy (Assumptions: 1, 1f, 3a, 3b, 3c, 3d, 4b, 4c, 5, 5a, 5b, 6, 6a, 6b) – IITS will evaluate and plan for the on-premise and cloud resources necessary to implement and maintain campus systems and services on a case-by-case basis with an overall strategy of reducing cost and increasing services. *Key Initiatives: Operationalize Hybrid Cloud Environment*

Unified Communications Plan (Assumptions: 1, 1c, 3, 3a, 3b, 3c, 3d, 6a) – Ongoing 3-year migration of campus phones to a new solution. *Key Initiatives: Unified Communications*