INSTITUTIONAL TECHNOLOGY STRATEGIC PLAN (ITSP)

Version 2.0
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HISTORY

Revision Number	Description	Date
1.0	Initial Plan	04/12/2006
1.1	Revision	09/01/2006
1.2	Revision	12/14/2007
1.3	Revision	03/18/2009
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Guam Community College

Institutional Technology Strategic Plan (ITSP)

INTRODUCTION

Guam Community College (GCC) is a multi-faceted public career and technical educational institution, created by the Community College Act of 1977 (as amended by P.L. 31-99 in 2011) to strengthen and consolidate Career and Technical Education (CTE) on Guam. The College operates secondary and postsecondary CTE programs, adult and continuing education, community education, and short-term specialized training, based on community and industry needs. These programs are delivered both on and off campus, in satellite programs at Guam's public high schools and on site at businesses, as needed. The College also serves as the State Agency for Career and Technical Education under the United States Vocational Education Act of 1946, 1963, and subsequent amendments. The College offers over 50 fields of study and prepares students for entry-level employment in career and technical fields or transfer to four-year institutions of higher education. The College offers a variety of community service and special programs to prepare students for college experiences including English as a Second Language (ESL), Adult Basic Education (ABE), General Education Development (GED) Testing Program preparation and testing, and an Adult High School Diploma program.

Guam Community College is accredited by the Accrediting Commission for Community and Junior Colleges (ACCJC), Western Association of Schools and Colleges (WASC). GCC is also a member of the Pacific Postsecondary Education Council, which is a consortium of presidents and chancellors of higher education instructions in the U.S. and U.S. affiliated Pacific Islands.

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BACKGROUND

For over 44 years, GCC, like most other organizations, has acquired an assortment of technologies. Since 2006, GCC has had enterprise architecture or a technology strategic plan to guide its acquisition and implementation of emergent technologies and applications. Since the institution of their 2006 Enterprise Architecture (EA) document, GCC has established technology standards and has made forward progress in planning and expanding its network capacity to meet an ever-growing student population and trend toward providing student offerings through web-based applications such as Distance Education (DE).

The college is both a business enterprise and an educational institution. These two facets of the enterprise often have conflicting technological needs, expectations, and priorities. The business side wants stable, robust systems that have proven themselves over time and place. The educational side frequently wants 'state-of-the-art' tools and techniques that allow it to be at the forefront of the technological world. Yet both parts of the college must work together to establish a technology infrastructure that meets both sets of needs and delivers the college an effective, efficient, and responsive system.

To make maximum use of its limited technology resources and funding, GCC decided to develop an Information Technology Strategic Plan, which is now updated and renamed as the Institutional Technology Strategic Plan (ITSP). The college also decided to develop an Enterprise Architecture (EA) to guide its technology investments. The enterprise-wide strategic plan defines how technology will be used to achieve the college's educational and business goals, while the enterprise-wide target architecture establishes information technology (IT) standards and design guidelines. The ITSP and EA are companion documents that detail what the IT environment of the future will be (the Enterprise Architecture) and how GCC will achieve this future environment (the ITSP). The

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architecture and strategic plan cover all areas of information, communication, building, and academic systems technology that have any effect on the operations of the college.

What is an ITSP?

The ITSP is a top-down enterprise-wide strategic plan created to achieve GCC's strategic educational and business goals. The plan details how to:

1. Implement the Enterprise Architecture

2. Develop staff skills needed to manage GCC's IT resources

3. Establish processes and structures to manage information technology as an enterprise resource

4. Transition from the current environment to the desired future state

This future environment requires technology that can communicate, interoperate, and share data and resources while reducing the costs associated with training, maintenance, and support through the implementation of the Enterprise Architecture.

The ITSP is not intended to limit or constrain creativity among GCC users, but to provide a stable, robust, modern infrastructure and environment in which to solve business problems and allow departments to collaborate on significant cross-departmental efforts. The plan is built on an IT model of management which employs the best features of both centralized and decentralized IT management, support, and decision-making.

Why develop an ITSP?

The ITSP provides a focus for GCC and its departments to discuss and come to

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agreement on the application of information technology to the college's business needs. It serves as a framework for budgeting, planning, and managing GCC's IT resources. The plan provides direction, establishes IT management processes, and documents the desired future state of IT in GCC.

What do we do with the ITSP?

The ITSP is used to implement the Enterprise Architecture and achieve GCC's IT vision. By following the plans contained in the ITSP, GCC can develop the technical environment it needs, the human resource skills necessary to manage the new environment, and the oversight and leadership mechanisms for fulfilling its strategic goals.

The ITSP and the Enterprise Architecture (EA)

The Enterprise Architecture and ITSP are complementary documents. The EA describes the current IT environment, the desired target architecture, and the actions needed to transition from the current to the target architecture. It focuses primarily on the technical issues involved in changing the IT environment. The ITSP takes a broader perspective on the transition process. It identifies the strategic goals that must be achieved for GCC to provide leadership and oversight of its IT resources. It addresses the management, budget, and governance challenges facing the transition and develops specific action plans to resolve the issues. Implementing the EA and ITSP together, GCC can provide both the technical and organizational leadership needed to fulfill its IT mission.

APPROACH TO DEVELOPMENT OF THE FIRST ITSP

The development of the ITSP was a collaborative effort involving GCC faculty administrative staff, and executives. Participants in the development effort considered Created and adopted on 04/12/2006. Subsequent revisions on 09/01/2006, 12/14/2007, 03/18/2009, 11/01/2011, 02/02/2012, and 03/31/2022.

the needs, interests, and concerns of all departments and users throughout the process.

Scope

The EA and ITSP apply exclusively to all components of GCC. The architectural principles and standards apply to all IT products, systems and projects. At this time, the ITSP addresses governance and staffing issues relevant to GCC.

Methodology

Staff selected from GCC faculty and administration developed the ITSP with facilitation support from consultants in the private sector. GCC's former College Technology Committee (CTC) provided oversight and direction to the initial development process. It discussed guiding principles for the IT environment of the future and technological trends that will affect that environment. The ITSP is a living document and requires periodic updating and revising as required by GCC, or as major IT enterprise systems are deployed, and IT policies are affected which change the strategic direction of the college.

Building upon the April 2006 ITSP, the team described the current IT environment and envisioned the future IT environment for the college. The team then generated a list of goals which, if achieved, would fulfill the college's vision. These goals were consolidated and prioritized to produce the final strategic goals.

For each strategic goal, the ITSP team described the goal, the current situation, the desired future state, and how to reach the future state. They also developed performance measures to indicate whether the future state had been reached. Finally, the team prepared action plans to achieve each strategic goal.

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ANALYSIS OF GCC's IT NEEDS

In assessing GCC's needs for information technology, the ITSP team developed certain core principles to form the foundation for guiding the development of the Enterprise Architecture and desired future state of IT in the college. The team also analyzed trends in technology to ensure its EA and desired IT future were consistent with and supportive of the direction of the industry and profession. Using this information as a start, the team described the current IT situation in GCC, the desired future state, and the migration path that leads the college from where it is to where it wants to be.

Ellucian was retained by Guam Community College (GCC) to perform an information technology (IT) assessment of the college and to assist in updating the school's Institutional Technology Strategic Plan (ITSP) and Enterprise Architecture (EA) plan (along with its' accompanying matrix). A component of the engagement included conducting a strengths, weaknesses, opportunities, and threats (SWOT) analysis which is included in this report.

Guiding Principles

The ITSP team articulated a set of overarching guiding principles that would drive both the architecture and the vision of GCC's desired future IT environment. These guiding principles, determine many of the characteristics of the EA and the IT future state. They affect decisions, or in some cases, determine decisions, at every level of the architecture and throughout the definition of the future IT state. These principles are:

- GCC will stay true to its mission

- GCC will keep the student first

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- Information technology, IT staffing and the IT budget are enterprise resources

- Information exists to support the educational and business objectives of GCC

- Technology and technology investments must be viewed from an enterprise perspective

- The educational, business priorities, and functional requirements of the college will determine investments in information technology

- Information is an enterprise strategic resource

- GCC must provide electronic access to information and services while maintaining security and privacy

- GCC's data must be accurate and collected only once in a timely and efficient manner according to life-cycle standards

- GCC and its information technology must become an integrated enterprise

Trends in Technology

Many trends in technology affect the decisions IT organizations make and determine the directions they take. It is difficult, if not impossible to fight the trends, but planning to take advantage of them, makes the IT function vastly more effective while reducing costs. Some of the trends in technology that will affect GCC's IT future are:

- Rapid creation of emergent technologies may shorten technology life-cycles

- The growth of Internet-based commerce and customer service will result in an increasing focus on security and privacy

- The Internet will drive technical standards for applications and network computing

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- The rapidly expanding use of Internet technology will be used to redesign and redefine business processes

- There will be a shortage of qualified IT staff

- The performance of computer hardware will continue to grow exponentially, while costs continue to decline

- The convergence of voice, data, and video has begun and will accelerate

- New ways to connect to the computing environment are emerging

- Application delivery will be increasingly component based

- Market forces will continue to dominate over superior technology

- Data warehousing applications and uses will experience high growth

- The drive for interconnectivity and interoperability will blur traditional boundaries

- Collaborative computing environments are enabling organizations to better marshal and focus their intellectual resources

- Enterprises are using new technologies to reduce administrative costs and establish a unified system management approach for corporate computing

Current State of Information Technology Resources in GCC

GCC has a fully staffed MIS department of 10 people and has maintained this level since 2006. The GCC technology inventory includes more than 1500 personal (desktop and laptop) computers and nodes. These computers run primarily the Microsoft Windows operating system (88%) and Apple's MacOS (12%). There is a growing number of Apple computers used primarily for instruction of digital media courses. The College also possesses lab spare computers, monitors, and other equipment on campus should the

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need arises to replace any down or malfunctioning equipment in the specific labs, which are mostly x86_64 PC compatible systems.

As GCC fulfills its "move to the cloud" or software as a service (SaaS) strategy, the number of servers that remain on campus continues to decline. Most of the servers that remain are under MIS management, which are dedicated to a single application and are housed in a centralized server room.

With the college's enterprise resources planning (ERP) system (Banner and supporting systems) having been moved to the Ellucian Cloud (SaaS), the college now enjoys the following with respect to these mission critical resources:

- World-class security – Ellucian Cloud applications and infrastructure undergo regular third-party compliance audits, adhere to strict data-privacy policies, and ensure strict governance over access, configuration, and development. Thus, the college gains a level of information security that would be difficult for it to maintain locally.
- Business continuity – in every practical sense, the risk of an on-premises data center disaster and disruption is eliminated as GCC's data resides in multiple remote, secure locations. The Ellucian Cloud is built on the world-class Amazon Web Services (AWS) infrastructure. Cloud applications are monitored, backed-up, updated, patched, etc. by Ellucian and are more consistently available than if running on-premises.
- Agility – GCC's resources can be moved around to ensure maximum impact on innovation and strategic priorities. In a rapidly evolving market, this agility is the key to remaining responsive, efficient, and competitive.
- Performance and Scalability – GCC can support peak loads at limited points in the year (such as during course registration) but sit idle the rest of the year. The infrastructure supporting the Ellucian Cloud can be scaled up and down as needed to maximize performance.

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- Constituent experience – The college has continual access to the latest and greatest capabilities without having to manage software upgrades. This provides more efficient operation in Human Resources, Business and Finance, Registrar's and Development and Alumni Relations Offices, and the rest of the college.

By mutual arrangement, a few servers are in the faculty area outside of MIS' management. The MIS department continues to recommend and champion that all servers across the college should be consolidated and managed by MIS except in such cases as when and where restricted by either program agreements, grants' conditions and requirements, or if resources and expertise to maintain the server is outside of MIS.

All main campus computers are networked and can gain access to the Internet. The adequacy of the bandwidth available is always a concern and particularly when new applications become a requirement for instruction or operations. The monitoring of bandwidth usage is a constant activity to determine if sufficient bandwidth is available to support all operations at the college. MIS expects and continues to observe higher percentages of bandwidth utilization as new WiFi access points and applications come online, thus running the risk of reaching maximum capacity. From continuing observations, GCC has and will continue to upgrade network infrastructure to meet the projected growth in bandwidth demands.

GCC uses three Internet service providers (ISPs): Guam Telephone Authority (GTA), Docomo Pacific, and Pacific Data Systems (PDS). The arrangement provides both redundancy and diversity of connectivity to the Internet. In addition to the three current ISPs, GCC is in the final stages of activating its Guam Open Research and Education eXchange ("GOREX") research network (REN) link. It is envisioned that partnering with GOREX will provide opportunities for greater bandwidth capacity for the campus, less expensive cloud data storage, peering with other higher education institutions, and other

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REN services.

GCC continues to become a 24x7 operation. More and more students are taking classes where tests and other materials are online. Many students often work jobs during GCC's normal business hours and need access to GCC services outside normal business hours. Access to the College's online resources and services are available except during IT maintenance activities that require downtime, which are usually performed late at night and only when necessary. MIS runs two operational shifts and has staff available between 8am and 10pm on weekdays.

Strength, Weakness, Opportunities and Threats

Using a survey methodology, the survey instrument was designed to solicit the opinions of the students, faculty, staff, and administrators at GCC as to matters regarding IT at the college. More specifically, the goal was to capture the respondents' perceived strengths and weaknesses of the internal use of IT at GCC and the IT department (referred to as Management Information Systems or MIS) as well as those external opportunities and threats that may impact IT at the college.

The survey was created jointly by Ellucian and GCC and disseminated to the GCC constituents using the GCC survey software. The survey was available for about a week. All four sections of the survey (strengths, weaknesses, opportunities, and threats) had targeted topics as well as open ended ones.

After the survey closed, the responses, coded as part of the survey development, were analyzed to identify themes within each component of the SWOT. The qualitative and quantitative information provided in this report will be useful for future efforts related to strategic planning at GCC.

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The survey was disseminated via email to the GCC community. The total number of completed or partially completed surveys was 395. The respondents identified themselves as:

- Student (N = 236)
- Staff (N = 62)
- Faculty (N = 70)
- Administrator (N = 21)

In addition to reacting to targeted topics that were presented in the survey, respondents' were given the opportunity to provide "explanations" to their answers to the targeted questions and were also presented with opportunities to provide additional feedback through "open-ended questions" at the bottom of each section. For brevity, non-responsive replies were edited out as best as possible.

On average the staff, faculty, and administrator respondents' tenure at GCC breaks down as:

- Staff – Less than 10 years = 58%
- Faculty – Greater than 10 years = 56%
- Administrator – Greater than 10 years = 52%

Not surprisingly, 94% of the student respondents have been with the college less than 5 years.

A high-level summary of the SWOT analysis follows.

Strengths - Weaknesses

The strengths and weaknesses components of a SWOT analysis are internal to the organization. As such they play off one another. Some may feel that a particular element is a strength, while others may feel it to be a weakness. This is especially important with the most crucial component of IT at the college, the IT (MIS) organization. MIS is a service organization and as such the quality of the services that they provide can make or

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break the efficacy of IT usage at GCC.

Accordingly, the first eight questions in the strength/weakness's components were based upon a study of service quality (Parasuraman, Zeithaml, & Berry) that identified multiple determinants of service quality that relate to any service provider (including IT). The determinants that were polled in the survey included: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding. The MIS group had highly favorable approval ratings and low disapproval ratings on each of these determinants of services quality. From a purely customer service approval perspective, the determinants that should be tweaked are ranked from low to best are below:

Access 9%

Reliability 7%

Communication 7%

Responsiveness 7%

Competence 3%

Courtesy 3%

Credibility 2%

With respect to governance, the high "No Response" rates between staff, faculty and administrators (52%, 71%, and 81%) would indicate that there is little if any understanding of any governance framework.

Network connectivity was a weakness. Collectively, 31% felt it to be a weakness. Staff, faculty, and administrators' negative ratings were 37%, 43%, and 67% respectively.

Meeting personal IT needs was a mixed perception. Students by and large didn't respond (67%) as anticipated. Staff rated it as a strength at 55% with only 6% feeling it a weakness. However, among Faculty 60% didn't respond and 16% felt it a weakness.

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Administrators had a 19% weakness rating with 38% ranking it as a strength and 43% not responding.

Remote support was also a mixed response. Staff ranked it as a strength at 55% (only 6% weakness). Students were divided with 49% not replying, 44% responding it's a strength and 7% a weakness. Faculty though had a 77% no response rating, 11% feeling it a weakness and only 12% ranking it a strength. Administrators had a 67% no response rate with a 9% disapproval and 24% approval rating.

Limiting the learning management system (LMS) question which primarily impacts students and faculty, the faculty response indicates a relatively lackluster attachment to the existing Moodle LMS (86% no response, 4% weakness and only a 10% strength). Given that the student response had a 63% no response rate, it may be time to explore other LMS systems.
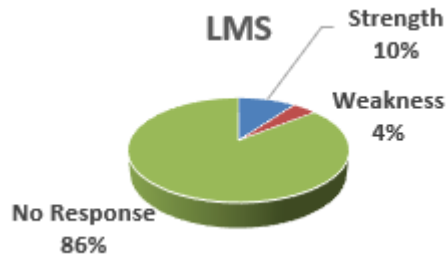
Faculty Responses

Like the LMS, the ERP system has a high impact on staff, administrators, and faculty. Overall, the response was lackluster as well. However, the primary users (typically staff) had 49% ranking it as a strength with only 3% perceiving it as a weakness.

Explanations and Additional Open-Ended Questions

A number or recurring themes came up in the strengths/weaknesses sections where respondents could explain any answer(s) above and in the Open-Ended questions. These included:

- Praise for the MIS staff, but they were difficult to access
- Slowness disconnection of Internet, Banner, WiFi connectivity
- Outdated equipment

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Also offered up were several actionable items such as bad phone lines and other issues were also reported. Curated from the responses include the following:

Advisement needs to be updated to catch up with the tools, and advisors need training. This would have a big impact on completion and also on students' feelings of connectedness and self-reliance.

- Slow to update classroom technology
- Just as we returned to the classroom, the College switched out a good copier for a much less efficient model that does not collate or staple. It also malfunctions more than the previous model.
- additional training to support virtual services which students are now requesting more and more
- Responding faster to students requesting services
- Why are we still using User as a login in & User as a password? Other places make the system accessible only through their company login & password.
- Marketing through social media with the use of technology.
- Lack of incentives for faculty; improve rapport between administrators and faculty.
- Need to introduce and maintain MIS training to go with the current requirements for the College such as the live streaming. All MIS staff, if not already, should learn this feature that it is out there and need to learn it.

Opportunities

Typical prospects such as Broadband, green initiatives and grants were some of the targeted opportunities. Additionally, to these were added newer trends in higher education that were researched from sources such as Gartner Research, Forrester, and others. The targeted opportunities, response rates and a semi-heat map of enthusiasm based upon the response rates was created and is presented in the table below.

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Opportunities	Constituent Response Rates			
	Student	Staff	Faculty	Admin
Broadband and the completion of the "last mile"	19%	23%	31%	57%
"Green" initiatives	23%	31%	27%	43%
Managed services and educational partnerships	21%	13%	23%	33%
Hyflex Classrooms	17%	11%	21%	29%
Availability of Federal, Territorial and private grants	27%	27%	26%	38%
High-impact practices (HIPs)	16%	16%	10%	14%
Artificial Intelligence in Higher Education	8%	11%	7%	29%
5G Technology	36%	23%	31%	48%
Blockchain Technology	6%	8%	9%	19%
Design Thinking	22%	18%	14%	19%
Digital Assessment	26%	18%	21%	52%
	N = 236	N = 62	N = 70	N= 21

Enthusiasm was color coded to be high (highlighted in green) for response rates which were greater than 30%. No highlighting (between 20% and 29%) was medium. Yellow highlighting (10% - 19%) low, and orange highlighting (0% - 9%) not even on the radar. Given the positive responses given by two or more constituents, the opportunities that GCC may want to look further into include: Broadband (e.g. Starlink), Green initiatives, and 5G.

Explanations and Additional Open-Ended Questions

The recurring theme that came up under the opportunities section was primarily cybercrime along with rehashing weaknesses related to the connectivity

Curated from the responses include the following:

- The college implements online ProctorU
- AI - to augment and support learning especially in trades where hands-on activities are crucial (culinary, construction, automotive)
- AI and Blockchain tech are two of the new technologies of this century that we need to be able to learn and teach this technology to students to be competitive in education in the future.
- The college needs to explore having a true technology building supporting the "best of the best" resources/hands-on training for all stakeholders (staff, students,

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instructors, etc.).

- Blockchain technology and AI are two of the new technology that this world has come upon being able to learn and teach to our students will definitely put them in a class above the rest. Creating new job markets here on the island. Also for our students to shine if they go off-island to fully seek their career choice.

- We should learn about the world of cryptocurrency because of its anonymity and we are not educated enough to understand and thrive in cryptocurrency.

- Develop a way for people to make donations via blockchain technology. (Crypto Currency)

- Tutors

- Engage in more online learning

- Outside programs like apprenticeship

- Look into computer forensics as a course that will also help the college and new jobs in Guam.

- Looking into the benefit of having good relations to communities, or diversifies the mission of the college

Threats

Typical threats around funding, cybercrime, and infrastructure were some of the targeted opportunities. Other targeted areas were post pandemic issues. The pandemic has demonstrated that companies and colleges can work remotely during a pandemic, so the question becomes how much of pandemic operations will flow over into a post pandemic world. The targeted opportunities, response rates and a semi-heat map of enthusiasm based upon the response rates was created and is presented in the table below.

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Threats	Constituent Response Rates			
	Student	Staff	Faculty	Admin
Funding from exterior sources (Federal and Territorial)	19%	23%	37%	38%
Federal and Territorial legislation, rules, procedures, etc.	12%	13%	23%	19%
Infrastructure that creates opportunities to work off island	17%	31%	21%	57%
Competition for IT workers both on and off island	14%	18%	20%	52%
Cyber-crime and ransomware (internet fraud)	32%	48%	43%	86%
Lack of partnership between business & education	14%	16%	21%	33%
Decline of corporate involvement in community	14%	10%	14%	24%
Low importance of advanced education by some citizens	15%	18%	20%	29%
Recession	15%	24%	24%	43%
	N = 236	N = 62	N = 70	N = 21

Excitement/concern was color coded to be high (highlighted in green) for response rates which were greater than 30%. No highlighting (between 20% and 29%) was medium. Yellow highlighting (10% - 19%) low, and orange highlighting (0% - 9%) not even on the radar. Cyber-crime, ransomware and Internet fraud was the #1 concern across all constituents. Rounding out with concern from two or more constituents was funding and infrastructure advances that negate the need to be onsite to work, teach or learn.

Explanations and Additional Open-Ended Questions

The recurring theme that came up under the threats section was primarily cybercrime along with rehashing weaknesses related to the connectivity.

- Curated from the responses include the following:
- The impact of COVID 19 on distance education will have residual effects - decline of face to face instruction; lack of engagement...
- Online schools.
- Rouge disgruntled Employees.
- Cybercrime is the main one because people can hack into the network and access student information
- The weather

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Desired Future State of Information Technology Resources in GCC

GCC will have a unified enterprise architecture and all IT resources will be compliant with this architecture. Standards will be established using industry best practices and adhered to for all IT resources. At a minimum, these standards will address security, data and data sharing, communications, compatibility, contingency plans and disaster recovery, and back-up/recovery. Systems will interface easily, seamlessly, effectively, and cost-efficiently. GCC-wide IT resources will be applied effectively and cost-efficiently. All IT resources will be current and life-cycle management schedules will be developed and funded. GCC will have sufficient qualified in-house IT staff, as well as, outsourced professional and technical support, and subscription-based service resources. GCC's IT budget and annual spending plans will be developed and managed to maximize the value to the college overall.

GCC will create and operate services on-line that are accessible 24 hours a day, seven days a week. It will deliver integrated enterprise information systems and infrastructure that improve public access to GCC functions and information, streamline business processes to simplify college-public interactions and reduce costs, and meet the legal and business needs of the college. The technology will enable departments to continually improve their efficiency and effectiveness, while also allowing applications to be developed more rapidly, easily, and inexpensively as business needs change.

Education will no longer be time and place dependent. All students will have laptops and classrooms will be fully equipped with multi-media, computers, and LAN and WiFi access. GCC courses will teach with the most up-to-date technology and offer certifications in the IT field. End users will be adequately computer literate and proficient. The educational community will communicate its needs to the technology community with sufficient lead time for them to provide the needed support/services. GCC will establish a model classroom with state-of-the-art technology.

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GCC technology will be 'invisible' to the user and always available when it is needed. The GCC campus will be completely networked, both wired and wirelessly, and secure, with no viruses, spam, or system breaches. All satellite sites will be connected. Users and their applications will not be impacted by limited bandwidth. Campus safety and security equipment (fire alarms, smoke alarms, security camera systems, etc.) will be fully integrated and the phone system will be significantly improved at a lower cost through VoIP technology.

GCC will be a leader in the Pacific region in the application of technology. The college faculty and staff will anticipate the skills needs of the local business community and provide training and certification to deliver and develop skills needed in the work force. GCC will establish a technology center where new technology of any type can be prototyped and tested. GCC will provide a 'computer store' where students repair and upgrade systems for both work experience and income. GCC will develop cost-effective means for providing 'niche' training and services, and for providing training and education not in the college curriculum.

The college will establish formal, fully accepted processes for IT budgeting, decision-making, resource allocation, project sponsorship, and priority setting. GCC will also have an effective process for integrating and reconciling users' needs with technology capabilities. GCC will have formally adopted a target enterprise architecture (EA) and standards that establishes a broad set of boundaries within which everyone agrees to stay, yet allows flexibility to safely experiment with new tools and technology. The target EA will support multiple operating systems.

Migration Path from Current State to Desired Future State

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GCC's environment is in a constant state of planning for future growth and is never static. As demonstrated throughout past revisions of the ITSP and the EA, major infrastructure improvements have taken years to plan, approve, budget, and execute. Transitioning from the previous, to the current, and to the envisioned future state involves constant minor and major infrastructure improvements, policy creations, reviews and updates, and managing and validating changing requirements. Major initiatives, such as cloud computing and infrastructure, DE, fiber optic backbone, WiFi upgrades, and VOIP are taking years to implement. The migration path will involve periodic and affordable improvements in accordance with the EA. IT capital improvements involve long-term tracking and forecasting as outdated infrastructure systems and end- of-cycle milestones approach and are planned and integrated into the college's capital improvement process plan to be selected and prioritized into the college's business and educational goals and objectives. Although major aspects of the transition can be planned, scheduled, and implemented according to planned milestones, many transition components occur as external events allow them. For instance, it's difficult to impose EA standards and design features on legacy systems that existed years prior to the EA. However, as these legacy systems are replaced or upgraded, they should be required to conform to the EA.

STRATEGIC GOALS

The former CTC initially brainstormed an extensive list of initiatives needed to fulfill its technology vision. These initiatives were then combined, simplified, clarified, and rephrased as goal statements to produce CTC's strategic goals list. These goals are updated during document revisions to reflect: 1) Recommendations from last accreditation process; 2) Findings from GCC's Assessment Cycles; 3) Completions of Major IT Initiatives; and, 4) Findings of Technology Assessments/Audits.

The latest goals in priority order are now:

1. GCC will develop and implement a target Enterprise Architecture reflective of

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up-to-date technology and services to improve and promote better accessibility and availability to students.

2. GCC will develop policies, procedures, and processes to analyze and acquire the components (hardware, software, applications) of the Enterprise Architecture to increase security, integrity, and protection of student and employee privacy and confidential information.

3. GCC will acquire, allocate, and dedicate sufficient funding needed to implement, maintain, and continuously update the Enterprise Architecture to better facilitate student learning and teaching.

4. GCC will expand the use and training of technology in education by the college faculty, staff, and administrators to improve student learning outcomes, student support, and administrative services.

5. GCC will enhance the governance process to provide timely and efficient integration of students' needs into decisions of technology investments.

6. GCC will build partnerships with external businesses and government organizations to expand educational and career opportunities for students.

The following expands on each strategic goal and how we intend to achieve them.

Strategic Goal 1: GCC will develop and implement a target Enterprise Architecture reflective of up-to-date technology and services to improve and promote better accessibility and availability to students.

This goal defines and implements the technical, business and educational environments GCC wants to obtain, maintain and improve upon going forward. Enterprise Architecture is the practice of applying a comprehensive and rigorous method for describing a current or future structure for an organization's processes, information systems, personnel and organizational sub-units, so that they align with the organization's core goals and strategic direction. Although often associated strictly with information technology, it relates more

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broadly to the practice of business <u>optimization</u> in that it addresses business architecture, performance management and process architecture as well.

Current Status:

The primary Enterprise Architecture target that was initiated in 2006, was achieved by 2008, when the implementation of all the necessary hardware, software, network, Internet links and bandwidth, as well as technical support were finally in place signaling 24/7/365 days access for students, faculty, and staff. Ellucian's (formerly Sungard Higher Education) enterprise resources planning system (ERP) Banner System has been in place since 2006 and has gone through major upgrades in hardware, software, and support. Hardware systems that first began with physical IBM blade servers were later upgraded to DELL servers with VMWare virtualized servers in 2012. With the college's advances in networking, database, and Internet technologies, moving the Banners systems to the cloud (referred to as Software as a Service or SaaS) was achieved in 2018, surpassing the goals established in the previous ITSP/EA planning documents. Major ERP and related software upgrades through the years have included Banner version and the LUMINIS portal/gateway version III in 2006, Banner 8 and LUMINIS IV in 2012, LUMINIS V in 2013, Banner 9/XE in 2017, and again Banner and LUMINIS SaaS in 2018. The core of this strategic goal has primarily been accomplished as of this plan. However, due to expansion, updates and upgrades to increase and improve accessibility by students and teachers in the classroom and throughout the enterprise, it will never be 100% complete. Similarly, application upgrades and/or replacements will always be expected and planned as a necessary process and are usually dictated by software manufacturer de-support timelines.

Where do we want to be?

GCC will have successfully implemented its target Enterprise Architecture and the Institutional Technology Strategic Plan. The college will continue to improve on its integrated database and set of applications with the web portal, providing access to

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students, faculty, staff and the public at anytime from anywhere. Users will have access to the information they need, when they need it, and where they need it. The college will have approved standards for information, databases, hardware, software, security, access, networks, business processes, and all other aspects of the technical and educational environment.

College systems will be secure and comply with all federal and local requirements. There will be adequate bandwidth so that no users or applications are adversely affected by lack of bandwidth. GCC will be less reliant on vendors for changes and enhancements to its systems.

GCC will have defined processes and procedures that are understood and complied with by all its users. Faculty and MIS will have improved communications and negotiate service and support agreements to meet the needs of both constituencies. Standards will be developed, approved and adhered to by all users. All users will sign users' agreements after an initial training and familiarization program. Within the approved standards, EA, and support agreements, faculty will be able to 'experiment' with innovative technology and applications. An MIS help desk will also be fully manned and operational.

Faculty, staff and students will be trained on the technology and be proficient at a level appropriate for their job duties or educational needs. For each college position, GCC will articulate the required technical skills and levels of proficiency. The college will establish minimum annual training standards and plans for staff at each department.

How do we get there?

GCC will develop and implement an Enterprise Architecture and establish, implement, and enforce policies supporting the EA. The college will continuously assess its progress

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in implementing the EA. It will continue with a fully integrated information system to meet community, administrative, and educational needs. GCC will obtain additional bandwidth and monitor the need for additional growth. The college and its users will make more effective use of its network and Internet bandwidth.

How do we know we did it?

- Percentage of bandwidth used (current vs. future, baseline to optimized)

- Number of stand-alone systems (becomes non-existent, 100% networked)

- Number of servers (100% cloud deployment or SaaS)

- Number of packets dropped (QoS-Quality of Service traffic, high quality)

- Customer satisfaction survey (minimal to zero complaints)

- Number of Work Orders (zero in queue, efficient, responsive helpdesk)

- Number of signed service/support agreements (outsourced as necessary)

- Number of requests for additional training outside "core" curriculum (expanded technology training)

- Cycle time for closing Work Orders (less than 1 hour or no greater than 7 days)

Strategic Goal 2: GCC will develop policies, procedures, and processes to analyze and acquire the components (hardware, software, applications) of the Enterprise Architecture to increase security, integrity, and protection of student and employee privacy and confidential information.

GCC needs a formal, structured process for defining user requirements, assessing system capabilities against the requirements, and acquiring the technology that best meets the users' needs. The process would use systems analysis tools and techniques to define

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needs and/or problems, research options for meeting the needs or solving the problem, develop alternative solutions, test the possible solutions, and select the best solution within budgetary or other constraints. Decisions about technology will be based on reviews of what works and why, and what does not work and why. The technology community will be constantly learning and growing based on its experiences, research, and testing. This approach to acquiring and using technology will ensure GCC makes the best use of its limited resources and technology.

Current Status:

Continuing with the information provided in "Strategic Goal 1" many policies, procedures, and processes were initiated and introduced to the college since the inception of IT strategic planning and continue to be updated, adjusted, added, and improved upon to increase and ensure the Enterprise Architecture's security, integrity, and protection of students' and employees' privacy and confidential information. Single sign-on (SSO) technology with the use of usernames and passwords were put in place before the ERP system can be accessed. BANNER functional modules and database access requires each area's administrator's approval before access can be granted to users. User training in the use of the ERP and compliance to Data Standards, FERPA, HIPAA, and general data security continue to be enforced. Other compliances in place include CIPA (Children's Internet Protection Act) in GCC's high school programs, and PCI (Payment Card Industry) / DSS (Data Security Standards). The GCC BANNER Core Group members continue to meet to also discuss user and system policies, student and faculty issues and resolutions, as well as systems testing, and other ERP-related topics. GCC's virtualized servers at Amazon Web Services (AWS) and its ERP in the Ellucian-AWS cloud environment, plus cloud-based SaaS systems in different cloud providers such as Google, Oracle, and Microsoft, have built-in failover, high-availability, backups, and redundancy that provide the college a high level of protection and reliability. Locally or on-premise, GCC has had an Enterprise Antivirus system in place since 2017, and the college uses Google's platform for Gmail to take advantage of its online automated antispam,

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antivirus, and anti-malware systems. Email policy continues to be enforced and recognized as the official communication outlet for GCC. Policies continue to evolve for Distance Education, Online computing (Internet), Social Media, and Digital Resources. The college's use of other technology security mechanisms such as VPN (Virtual Private Network) access, VLANs (Virtual Local Area Networks), SSH (Secure Shell), SFTP (Secure File Transfer Protocol), SSL (Secure Socket Layer) certificates for websites, and password encryption, etc. add additional security to the environment. The college has contracted multiple third-party network penetration and vulnerability tests (2011, 2016, 2018 and the latest in 2020). All resulted in medium to low-risk status and appropriately mitigated and improved where needed. Upcoming security measures being planned include a more robust and efficient WiFi (wireless) and LAN (wired) authentication system. The initial framing of this strategic goal can be considered completed. However, due to the recurring nature of vulnerabilities in technology and information security, and the ever evolution of future cyber threats, it is a goal that will forever be recurring. Other points of consideration:

- The Technology Working Group (TWG), formerly the CTC, is the latest advisory group that addresses participatory governance of IT resources, with meetings as scheduled by the CITO

- Continued updates to bylaws and charters

- Continued review of minimum computer standards every six months

- Campus community awareness that technology issues and policies must be presented to the TWG

- MIS personnel are trained and in place to provide immediate in-house technical service and support for the current EA, but will continue to require upskilling for any and all EA modernization projects and activities

- Highly externally trained MIS, however all skills set levels quickly become outdated in the areas of networking, computer maintenance and repair, systems and network security, database management systems, and server-grade and

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server-based operating system tools and utilities (LINUX, Windows Servers, VMware, etc.)

- Continuous college-wide improvement in technology literacy proficiency levels.

- Continuous review of the standards and policies in place for information technology products and tools

- Refinements to technology user, social media, etc. agreements

Where do we want to be?

- College community informed and aware of TWG's and MIS' role and responsibility

- Standards and policies are in place to address technology products and tools use campus-wide

- Appropriate technology training relative to current and future EA

- Every department establishes individual training plans based on institutional needs

- Sufficient in-house personnel and outsource technical professional support for the EA

- Annual technology user-agreement signed

How do we get there?

- Approve and update charters

- Communicate to campus community via website of TWG's and MIS' role, responsibilities and accomplishments

- Create and revise current standards and policies to address evolving technological needs

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- Assess technology training needs

- Assess technology staffing needs

- Update current technology user agreement and establish automated acknowledgement and signing

How do we know we did it?

- Effective policies and procedures are published and communicated (MyGCC, website, social media, etc.)

- Departmental technology training plans are in place (mandatory, online/virtual, face-to-face, etc.)

- Standards and policies are adhered to (MIS reviews and approvals, automated acknowledgement, enforcement, and training)

- TWG portal site is updated weekly (CITO updates based on meeting discussions, plans, etc.)

- Campus-wide technology survey indicates committee awareness and high MIS service satisfaction (conduct quarterly, analyze work orders, etc.)

- Zero to minimal data breaches and/or policy violations (non-activated incident response procedure)

Strategic Goal 3: GCC will acquire, allocate, and dedicate sufficient funding needed to implement, maintain, and continuously update the Enterprise Architecture to better facilitate student learning and teaching.

Implementation of the target EA is a long-term effort requiring a significant amount of funding. As the target EA is redefined and approved by the governance process, the governance entity needs to develop a multi-year budget that matches funding needs to the

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technology needs of the migration path from the existing architecture to the target architecture. To fund these budget needs, GCC will continue to explore all possibilities—lobby the GCC Foundation for additional funds, generate additional revenue using existing resources, apply for grants to fund technology enhancements and meet federal and local regulatory requirements, such as the Americans with a Disability Act, and create 'pockets of entrepreneurship' in which specific components of the college provide products and/or services to the public, businesses, and government agencies on a fee basis.

Current Status:

Despite overall government budget constraints and the island's economic challenges, the college has continued over the years to acquire, allocate, and dedicate reasonably sufficient funding for the implementation, maintenance, updates, upgrades, and improvements of the Enterprise Architecture, as well as making the financial commitments to annual obligations in the renewal of software licensing, services subscriptions, critical outsourced technical support, and the hiring of technical personnel for MIS. Funding for upgrades, continued maintenance, and urgent or emergency repairs has always been made available for the cooling systems of the server and network communications rooms, the UPS, generators, networking equipment such as firewalls, routers, and switches. Collected Student Technology Fees, received government appropriations, and awarded grants continue to be the main financial resources to allow the college to maintain and improve its technology.

Although the college continues to provide the critical funding needs of the Enterprise Architecture, the obsolescence of hardware, software, skillsets, and infrastructure, plus new advances in technology shift financial priorities. However, the shift is a necessary process in order to allow technology resources, facilities, and infrastructure to better

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facilitate student learning, teaching and outcomes. Current financial considerations include:

- Continuous budget challenges and shortages

- Limited sources or avenues for generating income to support college upgrades

- Limited nontraditional sources for IT capital improvements through public/public partnerships and through grants and donations/contributions from public and private sources

- Technology fee used for computer lab upgrades

- Bids, request for proposals, and request for quotes are to get best procurement price

- Site licenses are incorporated as opposed to individual licenses

- Developed partnerships with vendors

Where do we want to be?

- Financially stable and robust

- To be technology leaders with a secure and hardened infrastructure

- To plan IT upgrades proactively, not reactively

- To have a state-of-the-art stable architecture

- To build trust and confidence with the needs of the "experts"

- Appropriately trained and staffed technology team

- Financially self-sufficient

How do we get there?

- Continue to aggressively pursue grants

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- Build internal relationships that are win-win so trust can be established

- Cross-utilize internal resources for assistance since external consulting is cost-prohibitive

- Include limited IT roles and responsibilities with internal resources to assist with the overall EA

- Establish one-stop IT service center

- Have vendors pay college for intern students

- Implement best practices in procurement of technology

How do we know we did it?

- When users are able to securely download, install and access education-related digital resources without degraded performance or throughput of bandwidth

- Through network traffic data collection used by MIS (current traffic vs future, baseline vs optimized)

- When users experience zero to minimal latency with the Internet or ERP (Banner) (current performance vs future, baseline vs optimized)

- When students, faculty and staff are able to access the system 24/7 (with exception only for maintenance due to upgrades, patches, etc.)

- When upgrades can be made as planned and scheduled and are not delayed until events drive a forced replacement (proactive planning vs reactive approach, avoidance of being too close to de-support or End-of-life deadlines)

- Reduce dependency on legislative appropriation (self-sufficiency vs GovGuam appropriations)

Strategic Goal 4: GCC will expand the use and training of technology in education by the college faculty, staff, and administrators to improve

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student learning outcomes, student support, and administrative services.

Technology is used in many ways in GCC's educational and business settings. The technology offers many more opportunities than are currently being used, however. GCC needs to challenge its faculty and staff to creatively design their work environments and practices to more fully take advantage of the power and flexibility of the technology. For this expansion of the use of technology to be successful, GCC employees need to be trained and fully proficient with the technology available to them and the educational and business practices that maximize the use of technological tools. GCC will also need to recruit more students to the college and into the technical fields at the College by increasing its marketing efforts, providing more training and certification programs, and offering additional services to local businesses and government agencies. To meet this anticipated demand to recruit more students, GCC is deploying a robust Distance Education (DE) platform and has completed a Three-Phase Network Infrastructure upgrade.

Current Status:

Numerous trainings have taken place not just for MIS technical personnel, but also for many other employees throughout the college. Trainings, workshops, webinars, on and off island, especially by MIS, has allowed the section to better support students and faculty members, staff and administrators with their technology services requests. Efficiency has improved in the deployment, installation, maintenance, and repairs of technology hardware and software troubleshooting and resolution. Old labs are now upgraded according to the inventory replacement cycle of 3-5 years and the college has created many new computerized open and instructional labs since the first version of the ITSP-EA. Internet bandwidth has been increasing to accommodate demands and WiFi has been and continue to be expanded throughout the campus, encouraging, and increasing access to online and networked resources by students and employees. The

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Banner ERP system training has been ongoing and there is also an online subscription-based training platform available from Ellucian. MyGCC (LUMINIS) portal use and navigation training continue to be provided by MIS, as needed. Cengage's online tools for learning, as a supplemental resource of textbooks, GCC's Moodle Learning Management System, Course Sites out of MyGCC Portal, IBM's Academic Initiative, CISCO Academy, Google Classroom, Microsoft Office 365 Online for Education, etc. allow faculty and students to use technology more and more. New and upgraded multimedia projectors, WiFi systems, and network equipment are also now very valuable resources on campus and in many classrooms, thanks to the expanded use of the Technology Fee. This strategic goal is always ongoing or a work in progress, but the goal as initially conceived has been obtained, but there is always room for improvements.

Where do we want to be?

Distance Education is a major endeavor and moves GCC into another dimension of providing off-campus student offerings and perhaps, inter-islands offerings. DE can be a convenient, flexible, and effective means of providing education since nearly half of all college students in the country are of the age group once thought of as nontraditional. They are working adults or adults seeking first educational credentials or retraining. Many working adult students with multiple demands on their time find DE to meet their needs better than campus-based education. GCC envisions expanding its current DE offerings and capturing this growing student market.

To support DE, all faculty will be able to put courses on-line with minimal constraints. The faculty will have the knowledge and skills necessary to use technology in the educational process. Instructors will be required to receive proactive "technology certification". "Early adopters" will continue to test new technology and new applications of technology in the classroom. Faculty will be so skilled in using

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technology in the classroom that they will be able to showcase their application of technology in education at professional conferences and meetings.

The college infrastructure will support the faculty in applying technology in course work and will establish and adopt standards. To promote faculty innovation for introducing technology in course work, the college will work with the MIS staff to remove barriers and constraints such as funding, managing expectations for non-standard technology, and limited MIS staff.

How do we get there?

Faculty will be encouraged to try technology in their courses in as many ways as possible. The MIS staff can identify "power users" in each department to start applying technology in education and help other faculty try using technology in the classroom. GCC needs to provide more training and more "hands-on" support for faculty reluctant to try using technology in their instructional methodology. Each department can be requested to identify specific courses that can be available on-line. Similarly, each department can be asked to identify opportunities to use technology in its curriculum. To support these emerging technologies and provide the path for them to traverse, GCC has been increasing Internet bandwidth resources. Additionally, to establish a roadmap to achieve a more robust DE offering, GCC is looking at fully exploiting the benefits of GOREX and Internet2 resources. Internet bandwidth increases in addition to network upgrades, both wired and wireless, will greatly benefit GCC's DE strategies. Any advancement in the network projects positions GCC to acquire and deploy a far-reaching DE infrastructure.

How do we know we did it?

- Number and percentage of courses using technology (current vs future)

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- Number of syllabi integrating technology into course (current vs future, update to syllabus template)

- Number of students enrolling in classes using technology (current vs future)

- Number of students enrolled exceeds number of students on campus (increases in DE enrollment / expanded DE and hybrid courses)

- Number of instructors using technology in class (current vs future)

- Program assessments can be used to encourage the use of technology (include in program updates)

- Provide adequate technology and bandwidth for instructors and classrooms (current vs future)

Strategic Goal 5: GCC will enhance the governance process to provide timely and efficient integration of students' needs into decisions of technology investments.

Governance is the set of rules, processes, and structures by which IT resources are managed. Studies have shown that an effective governance structure is the single most important factor in maximizing the value of IT investments. The governance process covers the creation and implementation of the target enterprise architecture, management of the Institutional Technology Strategic Plan (ITSP), and decision-making for IT budgets and investments. The governance structure also establishes processes for the entire life-cycle of integrated enterprise projects—project planning, project initiation, project management, configuration management, systems development, systems implementation, maintenance, ongoing enhancements, support, project monitoring and evaluation, project/system termination, and project accountability.

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The governance process comprises the information sharing, data collection, stakeholder involvement, agency-wide communication, and decision making activities involved in creating and implementing the target enterprise architecture. The process includes configuration management of the current architecture as it evolves into the target architecture. It requires a continuous dialogue among technology users, GCC stakeholders, and the IT community regarding changes or upgrades in the technology environment. The governance process typically addresses budgeting to meet technology needs, assimilating users' needs, prioritizing needs within budget constraints, making decisions affecting the technology environment and the architecture, and providing oversight for project initiation and implementation.

Current Status:

The TWG (formerly College Technology Committee) is comprised of representatives from the faculty and the administration. The TWG is an advisory body responsible for making policy recommendations related to technology and technology issues. The TWG advises, recommends, provides initiatives, and reports to the College Governing Council, which makes its recommendations to the College President.

The TWG makes policy recommendations, but the MIS function also has some influence in the decision-making process. MIS can disapprove an acquisition by stating the selected technology does not meet the standards or support is not in place. In addition to the TWG, there are also working groups established to address functional and operational issues related to the integrated database management system and website. Such working group is the Banner Core Group with similar across-campus representation as the TWG, but presided by the VP of Finance and Administration Division.

The TWG and many other official committees or formal working groups within the college has allowed for student and faculty concerns to be heard as part of the governance
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participatory process. COPSA, as well as the faculty and staff senates has been instrumental and cooperative in ensuring participation and in having a voice for students, faculty, and staff. Agendas and minutes of committee meetings and working groups provide evidence in integrating student needs into decisions of technology investments. This strategic premise of this goal has been achieved and will continue to be improved upon as more student participation is formalized in committees and working groups, with the TWG as the primary working group for students, or their representative to voice their concerns. Improvement is needed in the membership commitment in the TWG as well as inclusion of student participation in meetings.

Where do we want to be?

The IT governance structure and processes are formalized, recognized, clearly defined, and actively used in the decision-making process for all IT issues. The governance structure manages and directs the Enterprise Architecture, the ITSP, and IT planning, budget, and funding processes. The governance structure also establishes and oversees the processes for the entire life-cycle of integrated enterprise projects—project planning, project initiation, project management, configuration management, systems development, systems implementation, maintenance, ongoing enhancements, support, project monitoring and evaluation, project/system termination, and project accountability.

The governance process will be simplified, responsive, proactive, effective, timely, and results-oriented involving all stakeholders (or representatives of all stakeholders).

How do we get there?

Since 2006, the governance process has continually evolved with organizational changes and policies which impact the IT technological environment. The current governance process is operational, active, systemic, and constantly monitors organizational dynamics for process improvement and decision-making. The various groups within GCC's governance structure have active charters, membership, and authority to execute their Created and adopted on 04/12/2006. Subsequent revisions on 09/01/2006, 12/14/2007, 03/18/2009, 11/01/2011, 02/02/2012, and 03/31/2022.

assigned roles and responsibilities. As the governance structure and process continually matures, the college can respond and adjust as needed to transition and support to its desired future state. All paths to the desired future state converge and go through the TWG. The TWG will monitor and advise on the strategic direction and status of GCC's ITSP transition plans.

How do we know we did it?

- Number of technical issues identified needing policies (decreased from current)

- Percentage of these issues for which the TWG creates policies (decreases over time)

- All department charters signed, approved (rules of engagement as approved by CGC)

- TWG recommendations are perceived in high regard (zero to minimal complaints)

Strategic Goal 6: GCC will build partnerships with external businesses and government organizations to expand educational and career opportunities for students.

To expand its technology opportunities, GCC needs to build strong partnerships with business, government agencies, and the local community. As with all partnerships, these arrangements would provide benefits to both partners. GCC would benefit by obtaining additional technology, funding, students, teachers, and opportunities for its graduates.

The business and government partners would receive well-trained and/or certified graduates as potential employees, access to the skills of the GCC faculty and staff, and facilities to prototype and test their technology before acquisition or implementation.

Current Status:

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GCC's successful Apprenticeship Program and Bootcamps can be considered most evident in directly showing that this strategic goal has been substantially satisfied and will continue into the future. Other areas this have been touched are in the establishment of good relationships with most island vendors and organizations the college work with. This strategic goal is not necessarily limited to information technology; however, technology is now more widespread in many different industries including the culinary arts, visual communications, automotive technology, criminal justice, health, marketing, etc. Additional evidence is in GCC's close relationship and in providing services with the island's military veterans. Moreover, since the island is also the college's campus, the true impact and success in meeting this goal is made by the students who are currently in the workforce, applying what they've learned or are learning, and in those graduates who are newly employed. Other continuing areas include:

- Partnership with government entities for student interns leading to fulltime employment

- Partnerships with online testing organizations such as PAN, HOST, PROMETRIC, and Pearson Vue.

- Good relationships with employers, government entities and non-profit organizations.

- Partnership with ISPs for Internet bandwidth and technical expertise resources

- Training activities with military units.

- Active Advisory Committees

- On-going direct relationships with construction companies with highly technical training requirements

Where do we want to be?

- Continue to improve current partnerships

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- Primary training facility on Guam for Government of Guam, federal government, private, and military sectors

- Expand partnerships on Guam and in the regions

- Establish partnerships that will provide for research, development, and testing of new technology

- Increase more national certificate testing opportunities and certification courses

How do we get there?

- Utilize the Office of Continuing Education to assist with outreach efforts

- Encourage departments to become more entrepreneurial

- Encourage diverse memberships on advisory committees representative of local businesses and needs on Guam

- Increase publicity so the community is truly aware of what GCC is doing and is capable of doing

- Increase private and public community outreach programs with Mayors Council, Chamber of Commerce, and non-profit organizations

How do we know we did it?

- Increased number of partners

- Greater number of testing options

- Use advisory committee comments to generate course and/or program changes

- Greater number of students successfully gaining employment after certification or graduation

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TRANSITION PLANS

The Guam Community College Enterprise Architecture (GCC EA) is the highest-level planning and objectives document for IT. It communicates the current situation and also the desired vision of the future. The Institutional Technology Strategic Plan (ITSP) will address specific challenges and objectives spelled out in, or derived from, the GCC EA. It then assigns each approved initiative to a project manager who creates a project plan, acquires the necessary stakeholder support, resources, and establishes a time frame for completion.

What is needed at this point is to identify those parts of the current architecture which are the most critical to the college. These should be addressed first by the ITSP. In this way, from the GCC EA to ITSP, to individual project plans, GCC will integrate into its planning, funding, acquisition and implementation processes to transition its' IT environment from the present to the future.

The Transition Plans are presented in a rough order of priority. Those listed first have the highest probability of saving staff hours and/or improving GCC efficiency. The TWG will decide on the final disposition of each and make recommendations through the Faculty Senate to senior management.

Transition Plan 1 –Officially adopt updated ITSP and EA: TWG/MIS

1. TWG meets with the Faculty Senate and CGC to present its updated charter. Gains approval.

2. TWG updates and presents MIS, ED, Academic Technology Departments (CSD, Electronics, etc.) and ADMIN charters to Faculty Senate and CGC for approval.

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3. TWG presents an overview of the IT Strategic Plan and Enterprise Architecture to the Faculty Senate and CGC.

4. TWG gains approval from the Faculty Senate and CGC for the Transition Plans, as appropriate.

Transition Plan 2 – Assist in execution of updated DESP: TWG/MIS/DE Office

1. Identify all current projects.

2. Re-assess the viability of those projects that are not yet financially obligated or committed to determine whether to pursue or reallocate the resources to another project(s).

3. Ascertain the goal of all the projects and the architecture and standards being used.

4. Determine the best course of action for all projects in conflict with the GCC EA.

5. Review, validate, prioritize, and select desired projects in the GCC EA "One to Five Year Initiatives" section.

6. Submit selected projects into GCC's assessment and budgeting process.

7. Develop/update DE implementation plan and targeted milestones, especially those related to technology requirements.

8. Perform DE applications market analysis to replace or maintain current DE applications/platforms.

9. Develop DE hardware acquisition plan to support selected DE applications, as needed.

10. Submit DE hardware acquisition costs into GCC's assessment and budgeting process.

11. Develop DE functional training requirements based on selected DE application.

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12. Submit training requirements into GCC's assessment and budgeting process.

Transition Plan 3 –Upgrade, patch, maintain ERP, Integrated Applications, SaaS, etc. especially in advance of de-support date, or when required: MIS / ELLUCIAN / ICON / Evisions / Nuventive, etc.:

1. Train the MIS staff to be able to do as much of this type of work.

2. Establish vendor or in-house project team, project plan, quality plan and other documents.

3. Determine the business functions each tool performed.

4. Determine who best to provide this function or the capability and add it to existing agreements.

5. Incorporate the business function where it fits best.

Transition Plan 4 –Ongoing expansions and upgrades of IT Infrastructure: MIS / TWG

1. Continue with network improvement projects

2. Plan and integrate Distance Education network improvements, where needed

3. Train the staff to be able to do this type of work and/or contract for services.

4. TWG will review the policies, procedures, and practices surrounding the current network, its topology, traffic volumes, and monitoring capabilities.

5. MIS updates network requirements to improve topology to achieve redundant high-speed Internet connections and load balancing software, plus other pertinent design features.

6. Conduct a Technical Options Study on the feasibility and opportunities of implementing network improvements.

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7. Report findings to the TWG for further action.

8. TWG and MIS recommends to senior management the procurement and implementation of network improvements requirements.

9. TWG selects a project manager who will conduct project management activities.

Transition Plan 5 – Expansion of imaging (BDMS) to other areas: MIS / Ellucian

1. Train the data staff to be able to do this type of work and/or contract for services.

2. TWG will review the policies, procedures, and practices surrounding imaging.

3. TWG creates a new or updates imaging requirements document.

4. Conduct a Technical Options Study on the feasibility and opportunities of automating any and all Imaging requirements and activities.

5. Report findings to the TWG for further action.

6. TWG and MIS recommends to senior management other areas to implement imaging.

7. TWG selects a project manager who will conduct project management activities.

Transition Plan 6 – Upgrades in Unified Communications System such as VOIP, Email, Mass Notification Systems, Surveillance/CCTV, Portal, Social Media, etc.: MIS / Vendor Partners

1. Train the data staff to be able to do this type of work and/or contract for services.

2. TWG will review the policies, procedures, and practices surrounding all types of communication systems.

3. TWG creates a new communications improvement document.

4. Conduct a Technical Options Study on the feasibility and opportunities of improving communication systems.

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5. Report findings to the TWG for further action.

6. TWG recommends to senior management the communications improvement project.

7. TWG selects a project manager who creates a project team, project plan and schedule, and quality plan.

Transition Plan 7 – Improve Identity Management Systems: MIS / ICON / Ellucian

1. Train the data staff to be able to do this type of work and/or contract for services.

2. TWG will review the policies, procedures, and practices surrounding Identity Management Systems.

3. TWG creates/updates Identity Management Systems document.

4. Conduct a Technical Options Study on the feasibility and opportunities for improving Identity Management requirements and activities.

5. Report findings to the TWG for further action.

6. TWG recommends to senior management the improved Identity Management System project.

7. TWG selects a project manager who will conduct project management activities.

Transition Plan 8 – IT Skills Training: Mandatory for MIS but also college-wide

1. TWG identifies the new or enhanced skills needed to implement the updated EA.

2. TWG reviews the current skills matrix against the new skills.

3. TWG tasks each organization to create individual training plans for the acquisition of these new skills.

4. TWG creates a master IT Skills Training Plan.

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5. TWG recommends to senior management that training funds be provided in accordance with the master IT Skills Training Plan.

6. TWG administers and monitors each organization's compliance with the master IT Skills Training Plan.

Transition Plan 9 – Records management improvements:

1. Train the data staff to be able to do this type of work and/or contract for services.

2. Identify all paper forms currently in use.

3. Identify all other documents received and stored.

4. Determine which paper forms could be replaced with an online system.

5. Report findings to the TWG for further action.

6. Establish a project to permanently replace these paper forms with online system.

7. Determine which documents must be stored in their original paper form for legal reasons.

8. Use existing Banner Document Management System for the storing solution of scanned paper forms into electronic format.

9. Establish cataloging and storage requirements and procedures for those documents which are not allowed to be stored electronically.

10. Scan and store all allowed documents.

11. Destroy all paper documents that are not legally required to be kept.

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INFORMATION TECHNOLOGY OR INSTRUCTIONAL TECHNOLOGY

Although the title and the use of the word technology in this plan is referring mostly to information technology (IT), it does not fully address the other type of IT which is instructional technology. The college must be made aware that there are primarily two main types of technology (IT) in use here at GCC and should be addressed and perhaps merge with future updates of this ITSP document, since it is now called the Institutional Technology Strategic Plan (ITSP):

Information Technology (IT)

The acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications.

Source: http://en.wikipedia.org/wiki/Information_technology#cite_note-0

MIS is primarily in charge of Information Technology.

Instructional Technology (IT)

In education, instructional technology is "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning," according to the Association for Educational Communications and Technology (AECT) Definitions and Terminology Committee.

Source: http://en.wikipedia.org/wiki/Instructional_technology#cite_note-0

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Different departments or programs here at the college use different types of Instructional Technology (Examples: Automotive Technology, Office Technology, Construction Technology, Fire Science Technology, Civil Engineering Technology, Diesel Technology, Surveying Technology, Waterworks/Wastewater Technology, etc.)

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