

VERSION 2.0

JULY 12, 2021

COLLEGE OF  

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MARIN

INFORMATION TECHNOLOGY  
OPERATIONAL GUIDELINES

CALENDAR YEAR 2021

PATRICK EKOUE-TOTOU, PH.D.

MARIN COMMUNITY COLLEGE DISTRICT

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## MESSAGE FROM THE CIO/IT DIRECTOR



During the 2020 calendar year, the Information Technology Department has engaged in an overall remote operation support in response to COVID-19. I am appreciative of the entire IT team for stepping up and successfully moving instructional and non-instructional operations online.

As our threats and opportunities landscapes evolve, so are our approach to adapt. We are making strides in application integrations and laying the foundational pieces for enabling intelligent data consumption, while also addressing increasing cybersecurity threats and meeting regulatory

requirements.

With the backing of the College Community, we have significantly expanded our project portfolio. We have distributed laptops to our users in need; provisioned a virtual remote desktop environment; and protected against phishing. From the infrastructure perspective, we have continued to modernize and expand the data network, Wi-Fi service, and video security system; upgrade the Banner ERP; digitize processes; track COVID-19 events; and so much more.

In this post-pandemic time, we are focusing on strengthening Online Learning, reviewing Digital Equity, and building a cybersecurity operation strategy. The IT Department remains committed to playing a leading role in supporting the District vision.

The entire IT Department and myself are looking forward to working in partnership with members of the College Community and delivering valued services.

Sincerely,

A handwritten signature in black ink that reads "Patrick". The signature is stylized and cursive.

Patrick Ekoue-totou, Ph.D.  
CIO/IT Director  
Information Technology Department

## COLLEGE MISSION

College of Marin’s commitment to educational excellence is rooted in our mission to provide excellent educational opportunities for all members of our diverse community by offering:

- Preparation for transfer to four-year schools and universities;
- Workforce education;
- Basic skills improvement/English as a Second Language;
- Intellectual and physical development and lifelong learning; and
- Cultural enrichment.

The College of Marin is committed to responding to community needs by offering student centered programs and services in a supportive, innovative learning environment with a strong foundation of sustainability, which will instill environmental sensitivity in our students.

## COLLEGE VISION

College of Marin will be a premier educational and cultural center that provides programs of the highest caliber to meet the needs of an increasingly interconnected global society. Our vision will be guided by our values.

## ABOUT THE INFORMATION TECHNOLOGY DEPARTMENT

### OUR DEPARTMENT

The IT Department is composed of 13 staff and managers working in the following areas: Instructional Computing, Applications, and Infrastructure. Project teams and service groups are often made up of technicians from various groups, sometimes augmented by outside Level 4 engineers.

### OUR OPERATIONAL MISSION

This year, our focus will be on the following key assignments:

- To mitigate cybersecurity threats;
- To support Remote Learning, Teaching, & Working;
- To prepare for a safe post-COVID reopening;
- To deliver a superior customer service;
- To continue our maturity process.

### OUR APPROACH

We integrated the following principles into our operations:

- Superior remote service delivery;
- Cyber threat risk management;
- Application integration;
- Scalable infrastructure build-up;
- Fiscal responsibility.

## ENVIRONMENTAL SCAN

### SWOT ANALYSIS

	POSITIVE	NEGATIVE
INTERNAL	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Quick adaptation to remote working</li> <li>• Experienced and motivated staff</li> <li>• Increased collaboration with functional teams</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Remote service support challenges</li> <li>• After-hour ServiceDesk coverage</li> <li>• Slower pace for service upgrades to match community’s reluctance to change</li> <li>• Lack of Compliance</li> </ul>
EXTERNAL	<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Servicing a potentially larger remote student population</li> <li>• Working with standard framework and guidelines</li> <li>• Expansion of Online Education</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Cybersecurity challenges</li> <li>• Compliance challenges</li> <li>• Dwindling Bond funding</li> <li>• Increasing OPEX</li> </ul>

## POST PANDEMIC TACTICS

The IT Department is planning to execute the following post-pandemic tactics.

	Online Learning	Information Security	Equity	Cost Management
RESTORE	Strengthening online and hybrid education	Providing information security leadership	Affordability and Digital Equity: increased support of technology needs	Reducing institutional costs and increasing workforce efficiency
EVOLVE	Progressing from emergency remote teaching to online learning	Developing a cybersecurity operations strategy	Equitable Access to Education: providing technologies, support, and policies for diverse users	
TRANSFORM				Focusing on digital transformation

Inspired by Educause Research, 2021

## STAFFING PROJECTIONS

The IT Department staff is projected to remain as is during the end of 2021 calendar year. It is widely recognized that institutions of our size must develop data security operation center capabilities. While some community colleges are hiring security engineers and proceeding with staff expansions, we have opted for leveraging a cloud service, a more cost-effective approach.

We are also short on Analysts. During the last five years, we have lost two veteran technicians. Not replacing these System Analysts permit significant payroll savings for the District. If we were to sustain this staff shortage in the Application Team, we must change out older systems and modernize data consumption processes in the institution.

IT Organizational Chart – Projected by end 2021	
Management & Office	Application
CIO/IT Director – Patrick Ekoue-totou	Senior System Analyst – Burton Schane
IT Supervisor – Matt Howard	System Analyst – Vacant /on the book
Administrative Assistant – Mina Namvar	System Analyst – Dong Nguyen
	Database Administrator – Aaron Osheroff
Infrastructure & Instructional Support	
Network Administrator – Closed	Network PC Telephone Tech – David Gardiner
Technology Support Specialist I – John Andy Haber	Network PC Telephone Tech – Brian Chi
Technology Support Specialist I – Jon Gudmundsson (Retirement/Re-hiring)	Technology Support Specialist II – Patrick Magee
Technology Support Specialist I – Wendy Lee	System Engineer – Ferhat Indi

## CYBERSECURITY INITIATIVES

During this calendar year 2021, the IT department will subscribe to a *Security Operation Center (SOC)* capability. We are planning to work on the following additional initiatives:

- Getting the Institutional familiar with our proposed *Cyber Incident Management Guidelines*;
- Review and improve our compliance with [CIS Critical Security Controls](#);
- Review and improve our compliance with [NIST 800-171](#);
- Develop an end-point threat detection strategy;
- Perform a security audit if budget allows.

## KEY PROJECTS

In addition to routine tasks such as MSI reporting, year-end reporting, rolling terms, server upgrades, software patches, system monitoring, etc., our technicians have a long list of projects we will be working on this year. The following table succinctly depicts the project list.

INFRASTRUCTURE				
ID	Name/Description	Estimate Start time (2020)	Estimate End	Status/Notes
	CENIC CCC-2449 between sites circuit upgrade to 10GB	February	June	In progress
	CENIC CCC-1647 & CCC-1648 uplinks circuit upgrade to 10GB	Started	November	
	Fiber optics expansion and replacement	Ongoing	Ongoing	
	Police Department Data Circuit Upgrade	Ongoing	July	
	CAT6 data wiring projects	January	Ongoing	
	Wireless coverage expansion	Ongoing	July	
	Security Camera System deployment	Ongoing	August	
	Building Construction Planning (LRC, 830 College Ave., Miwok, etc.)	Ongoing	Ongoing	
	Telephone hardware replacement	Ongoing	On Hold	
	Continuous telephone core system upgrade	Ongoing	On Hold	
	E911 Database update with AT&T and PTX	Ongoing	Ongoing	
	New Teleworker feature for remote workers (COVID-19)	March	April	Completed
	Elevator calls to be directed to PSAP	February	July	In collaboration with M&O
	Area of Refuge phone replacement	February	December	In collaboration with M&O



INFRASTRUCTURE				
	Public phone replacement	January	July	
	Cold back up for data	In progress	June	
	Windows servers upgrade to 2019 version	In progress	Ongoing	
	Laptop deployments (COVID-19)	February	Ongoing	
	SAN Storage and Servers Expansion	August	September	
	Alert System (AlertUs)	Ongoing	September	Completed
	Finding end-point threat detection solution	August	October	
	Citrix remote desktop platform expansion (COVID-19)	March	March	Completed

INSTRUCTIONAL COMPUTING				
	JAMF Apple device administration deployment	In progress	August	
	Remote device management	Ongoing	Ongoing	
	Computer Lab upgrades	June	August	
	New library printing system – Paper Cut	Ongoing	April	
	Extron system rebuild at FA315	Ongoing	June	
	SCCM computer management	January	April	
	UCView system rebuild and expansion	June	August	
	Staff training	Ongoing	Ongoing	

APPLICATION INTEGRATION & DEPLOYMENT				
	DegreeWorks server upgrade	Ongoing	April	Completed Jul. 2021 – awaiting documentation
	Banner server upgrades and maintenance	Ongoing	Ongoing	
	ESM server upgrade and maintenance (Banner upgrade tool)	Ongoing	Ongoing	
	Dot Net migrations & Customizations	Ongoing	Ongoing	
	Old web server deprecation (priority)	Ongoing	Ongoing	Budget tool conversation pending
	TeamDynamix workflows	Ongoing	Ongoing	Good progress
	LaserFiche digital processes (roll back)	January	Ongoing	
	Accessibility Information Management (AIM)	February	June	On hold waiting for client
	CCC - SuperGlue – CCCAppy, Credit/Non-credit, & SWACCAP	March	April	Completed
	CCC - SuperGlue – Promise Grant application (BOG)	No scheduled		Completed
	CCC - SuperGlue – International student (to be discussed with Jon)	June	August	Rejected for low ROI
	Remove Visual Source Safe from legacy server (Phase 1)	March	June	Completed
	Acquia / Drupal/Php upgrade to current (deadline – 07/23)	Spring		Postponed to September 2023
	Drupal 8 – International Students site	Scheduled 2023		Deferred for upgrade to D10
	CalSTERS upgrade (HR resources needed)	April	August	Start testing in March 2023
	CCC - eTranscript (Required for course exchange)	April	May	Starting (Involve ES) – J. Horinek

APPLICATION INTEGRATION & DEPLOYMENT				
	Ellucian ETHOS (paused)	June	July	Paused – more configuration needed for new applications
	CCC - Course Exchange/Finder (PHASE I)	July	August	Completed
	CCC - Course Exchange/Teaching (PHASE II)			Not scheduled (low ROI)
	Unified Engage2 (auto provisioning, notifications, etc.)	May	June	Not started – falling behind
	Ellucian Analytics	July	August	Cancelled by Ellucian – awaiting Replacement
	MyCOM Unified mobile apps			No interest
	Conversion of Banner Pro C to Java	October	Ongoing	May not be able to handle Customization
	Atomic upgrade (Job scheduler for Banner)	October	March 2022	Top priority – in progress
	Banner 9 SSB Employee & Finances/Electronic Timesheets	Not scheduled		Testing LaserFiche alternative / Banner mass entry form
	Banner 9 SSB Faculty / Student Registration	Not scheduled		
	Banner 9 SSB customization (Avoid at all costs)	Not scheduled		
	Drupal 8 – new sites: International, LC, equity, etc.	May		Deferred for upgrade to D10
	Migrating CTE from WordPress to Drupal	Starting		Completed
	Ocelot - Chatbot	May	Dec.	Close to completion
	Etrack (replacement of SARS Track)	February	February	
	SARS appointment – Preferred name			Awaiting funding
	Credit for Prior Learning	Not scheduled		

APPLICATION INTEGRATION & DEPLOYMENT				
	Ugam – Qualtrics Student Engagement	Oct.	Dec.	In progress
	Global Financial Aid (Global FSA core) Dong & Burton	May	July	Completed – Nov. 2021
FUTURE PROJECTS - 2022				
	CCC - MyPath			
	Migrate from VSS to Team Foundation Server (Phase II)			
	Argos report for preferred name (ES request)	Jan 2022	Jan 2022	Completed
	Banner Graduation Application	Dec. 2021	Jan. 2022	In testing
	New Forms site in Drupal 8/9/10 connected to TeamDynamix/Boomi			Not started
	Fee Waiver for Spring 2022	Dec. 2021	Jan. 2022	Completed
	Debt Release for (Spring 2020, Summer 2020, Fall 2020, Spring 2021, Summer 2021 and Fall 2021????)			
	Career Coach and Widget builder	Feb. 2022		Completed
	Handshake			Completed
	Faculty Sick Leave balance (expected completion 07/23)			Reviewed for 2023
	Faculty and Stipend EPAF	May 2022	Jan 2023	Completed
	CalGrant – CCC			May start on Patrick Scott's availability
	Community Ed. EPAF (expected completion 07/23)			Not started
	eLumen API integration (to other data sources)	Nov. 2022		In progress
	Security – data clean up	Ongoing	Ongoing	



## BUDGET ALLOCATIONS

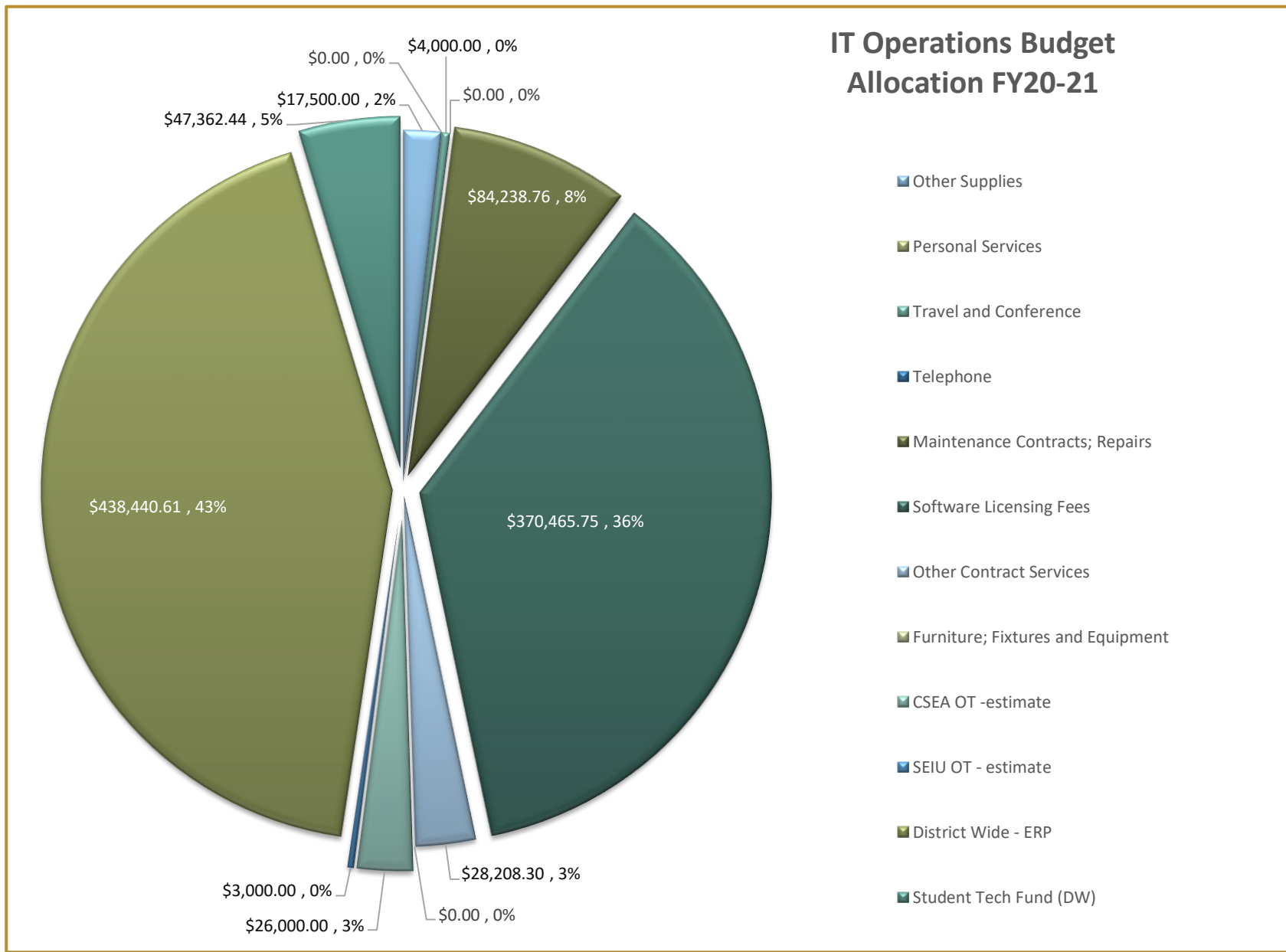
### OPEX/CAPEX 2021

The operational spending during the calendar year 2021 will span across two calendar years 2020-2021. Below is the FY20-21 allocations chart.

OPEX	FY20-21	Percentage
Other Supplies	\$17,500.00	2%
Personal Services	\$0.00	0%
Travel and Conference	\$4,000.00	0%
Telephone	\$0.00	0%
Maintenance Contracts; Repairs	\$84,238.76	8%
Software Licensing Fees	\$370,465.75	36%
Other Contract Services	\$28,208.30	3%
Furniture; Fixtures and Equipment	\$0.00	0%
CSEA OT	\$26,000.00	3%
SEIU OT	\$3,000.00	0%
Banner, Student Portal & Others (DW)	\$438,440.61	43%
Student Tech Fund (DW)	\$47,362.44	5%
<b>Total OPEX</b>	<b><u>\$1,019,215.86</u></b>	100%

### REMARKS

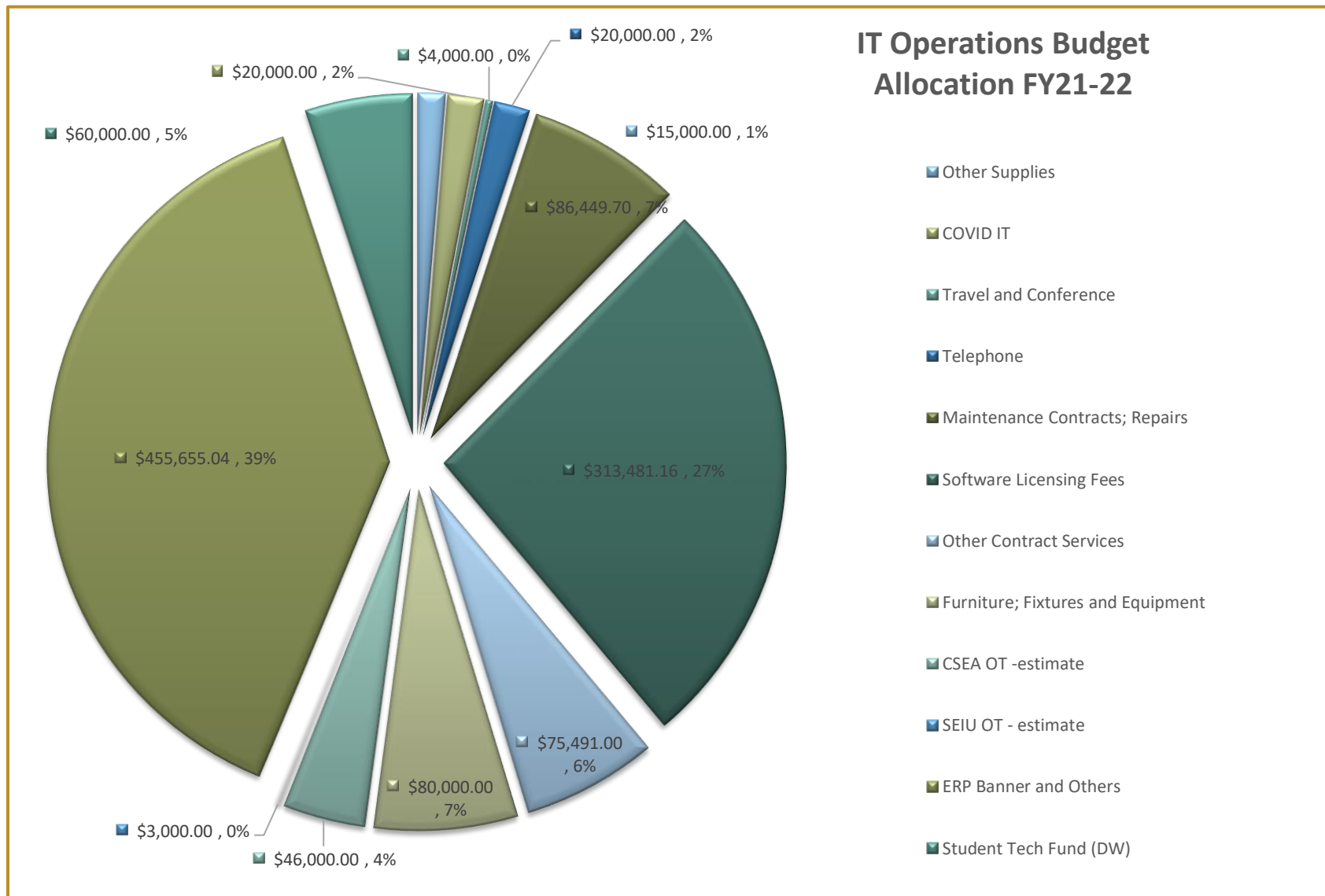
More of our operations are shifting from CAPEX toward OPEX spending, because of increasing software costs and adoption of cloud services. These shifts present many benefits but require changes in our funding structure.



## PROJECTED OPEX/CAPEX 2022

OPEX/CAPEX	FY21-22	Percentage
Other Supplies	\$15,000.00	1%
COVID IT	\$20,000.00	2%
Travel and Conference	\$4,000.00	0%
Telephone	\$20,000.00	2%
Maintenance Contracts; Repairs	\$86,449.70	7%
Software Licensing Fees	\$313,481.16	27%
Other Contract Services	\$75,491.00	6%
Furniture; Fixtures and Equipment	\$80,000.00	7%
CSEA OT -estimate	\$46,000.00	4%
SEIU OT - estimate	\$3,000.00	0%
ERP Banner and Others	\$455,655.04	39%
Student Tech Fund (DW)	\$60,000.00	5%
<b>Total</b>	<b><u>\$1,179,076.90</u></b>	<b>100%</b>





## APPENDIXES

### APPENDIX 1: 2020-21 IT SURVEYS

#### Student Highlights

- 20% of our students share their primary working device with other members of their households.
- 19% of our students use COM loaner laptop.
- 30% of our students have fair to poor Internet connection at their house.
- Fully on-campus, hybrid, fully online synchronous, or fully online asynchronous courses are evenly preferred by our students.
- Only 4% of our students negatively rated their overall technology experience.

#### Faculty Highlights

- For faculty, in-person classes are still the most preferred, whereas fully online asynchronous delivery is the least preferred.
- For faculty, computer accessories (adapters, keyboard, mouse, webcam, monitor, etc.) are expected to be provided in support of remote working.
- 9% of faculty share their primary working device with other members of their household.
- 28% of faculty has fair to poor Internet connection at their house.
- Only 5% of faculty negatively rated their overall technology experience.

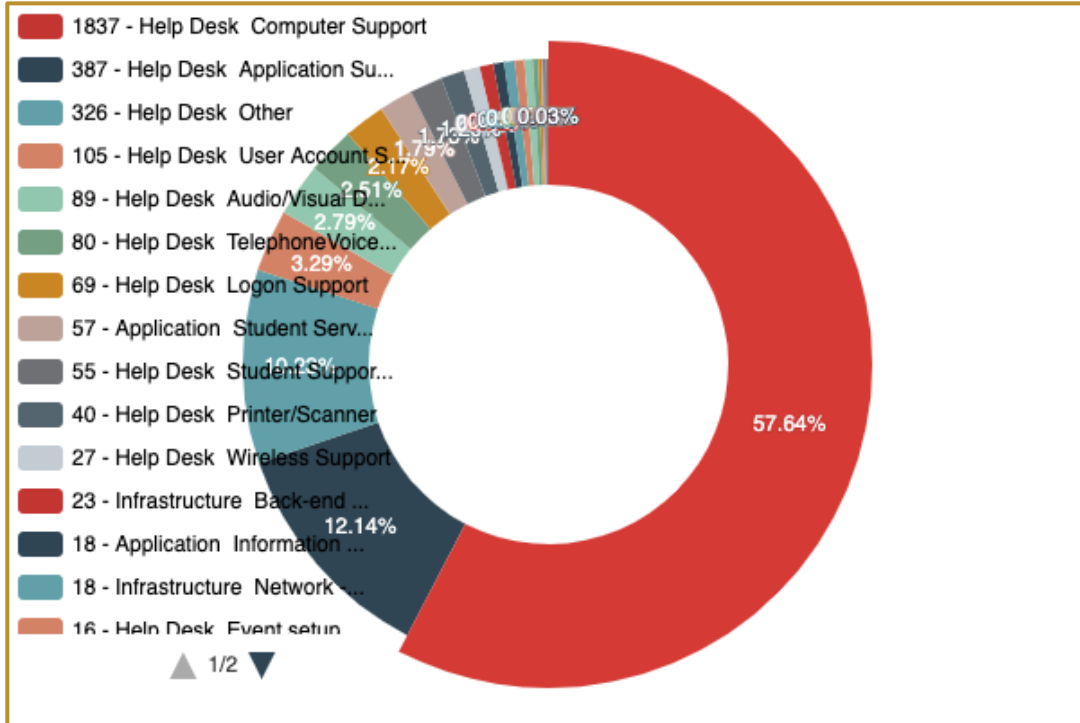
#### Staff Highlights

- 55% of our staff use COM loaner laptop.
- 24% of our staff has fair to poor Internet connection at their house.
- *Critical applications support and infrastructure support and improvements* are the two most important IT areas for our functional teams, in support of their department's technology vision.
- Only 3% of our staff negatively rated their overall technology experience.

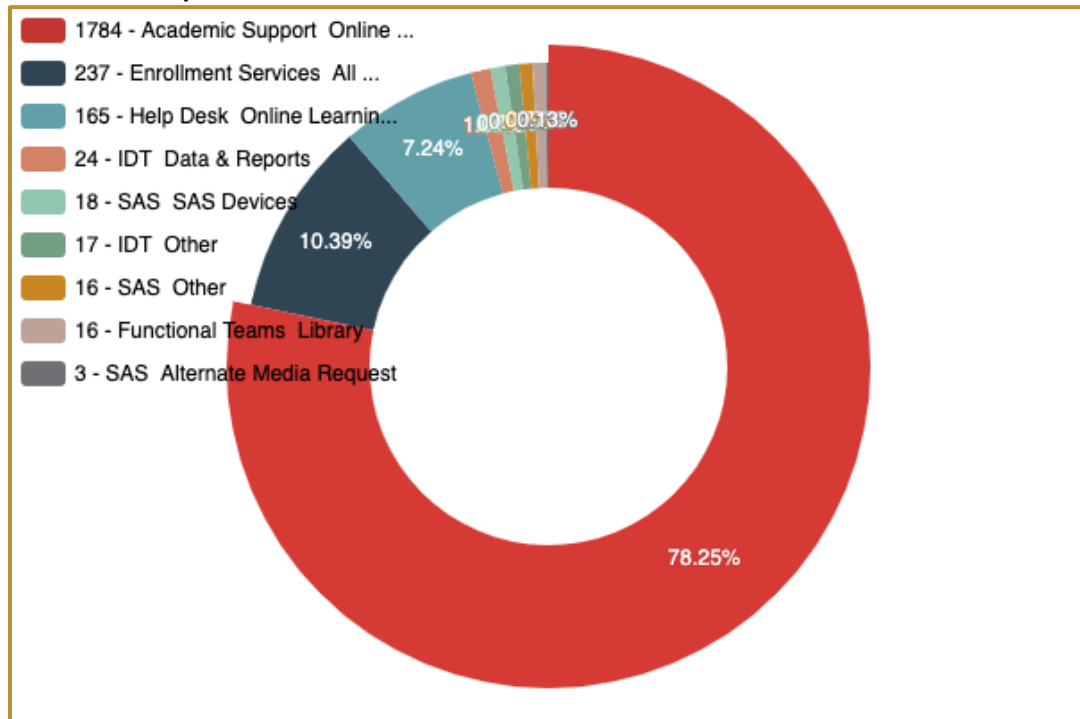
**ServiceDesk Highlights**

The IT ServiceDesk application is also used for collecting various request types and is currently serving the Enrollment Services, SAS, and many other functional teams. 7,797 tickets were created during 2020, of whom 7,542 where closed and 255 is still open, a closure rate of 96.73%.

**Number of IT Tickets**



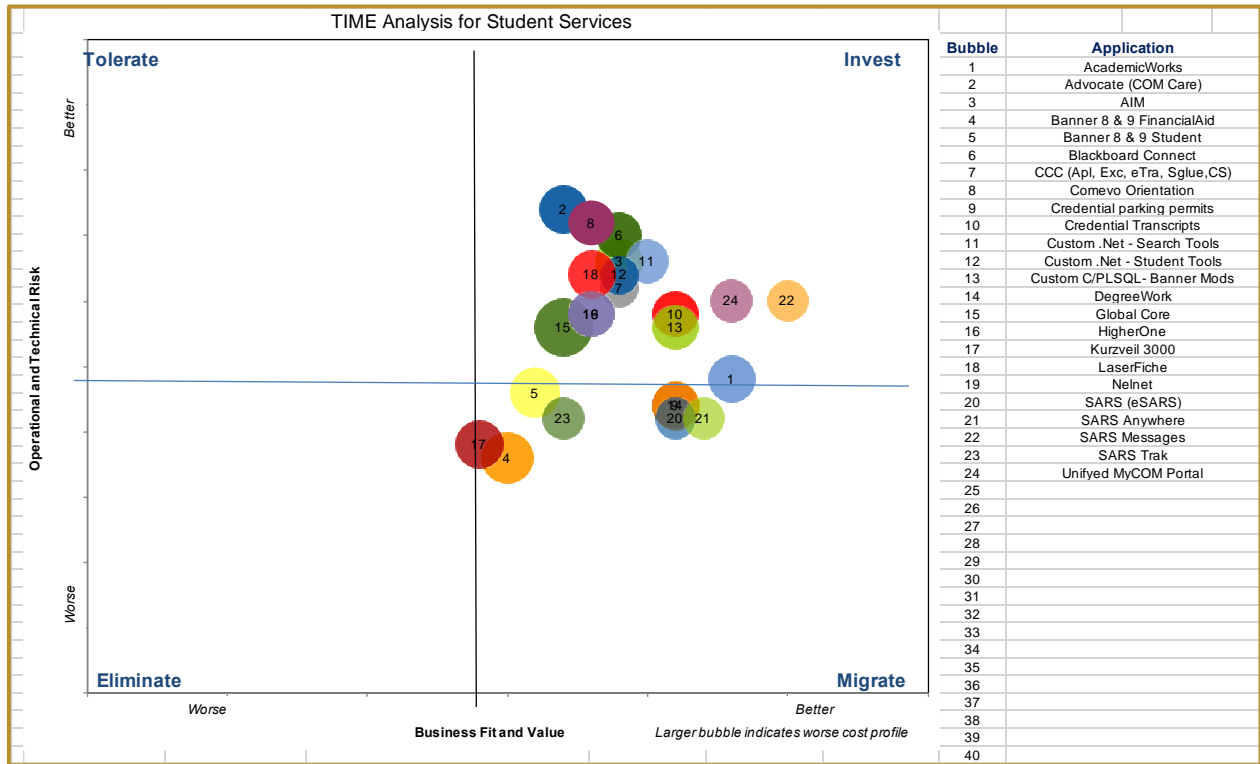
**Number of Other Departments' Tickets**

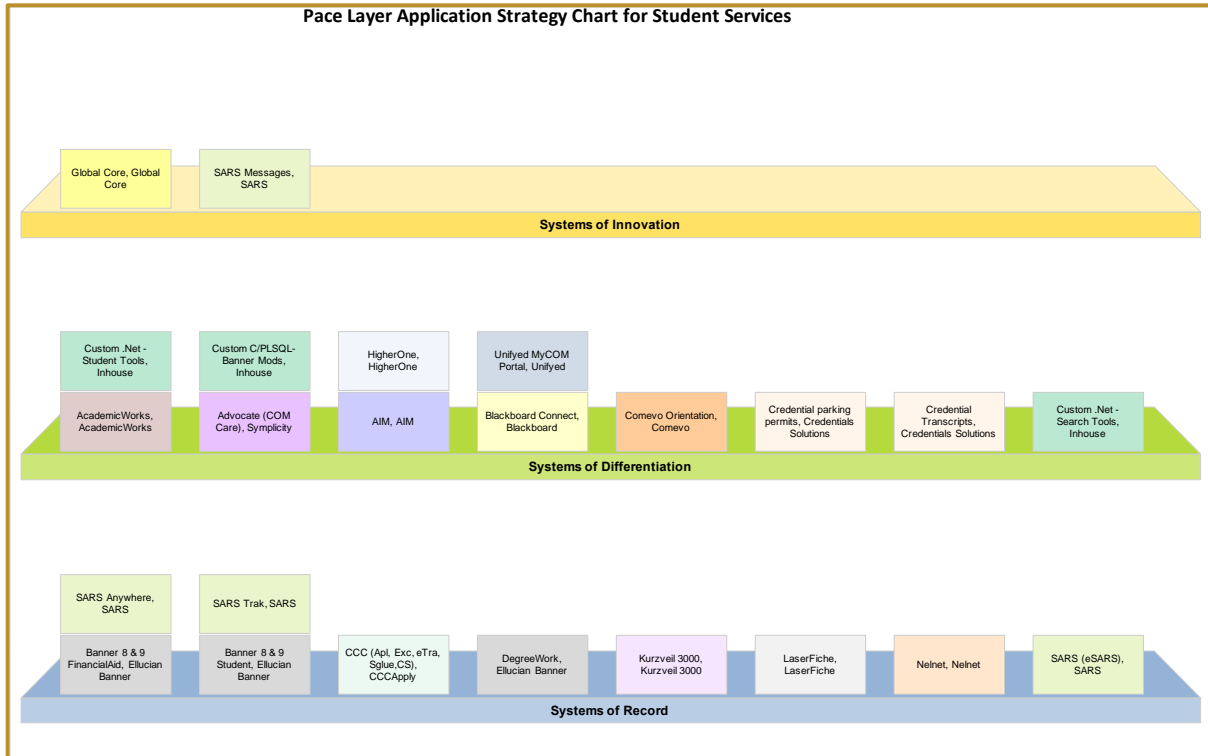


**APPENDIX 2: APPLICATION PORTFOLIO ANALYSIS – 2020**

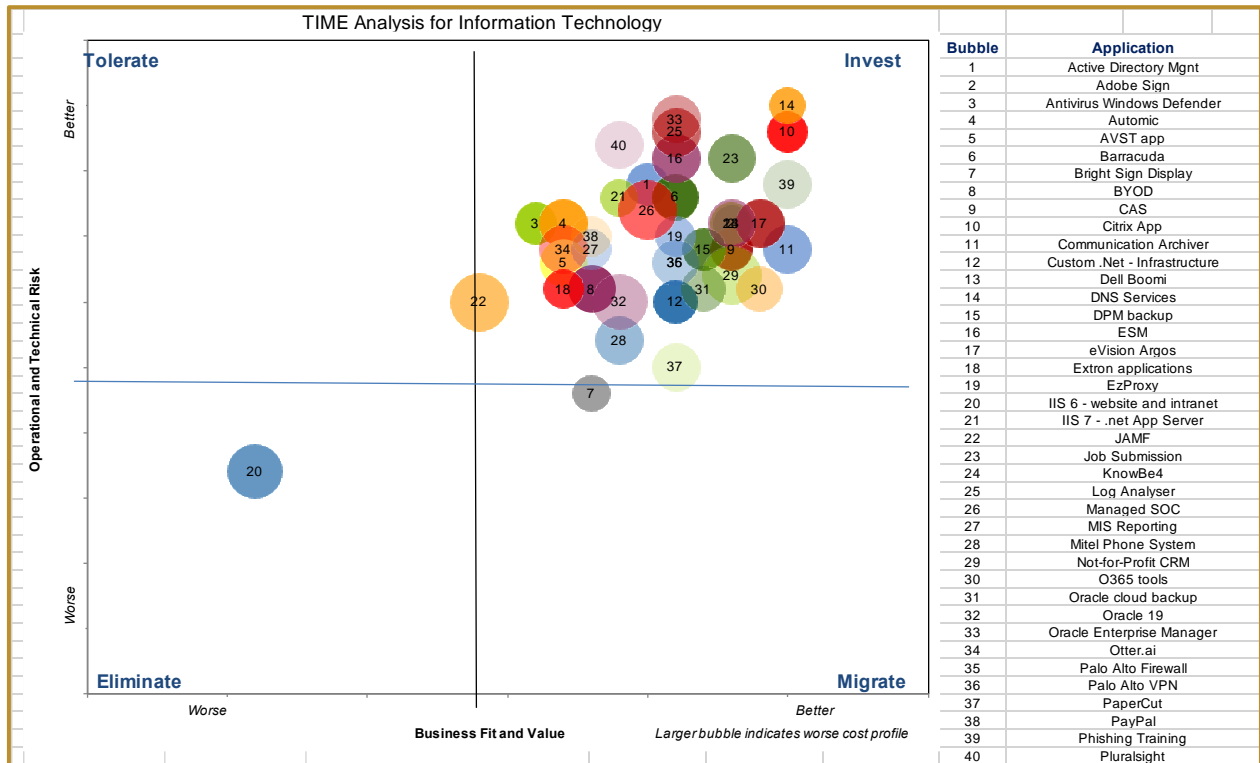
The Application Portfolio Analysis (APA) is a tool that categorizes our applications based on the “degree to which they contribute to the enterprise’s performance.” Our portfolio is divided in the following domains: Academic Affairs, Fiscal and Financial Services, Human Resources, Information Technology, College Operations, and Student Services. We evaluated each domain with both TIME and PACE methods. The following charts show the three most significant domains.

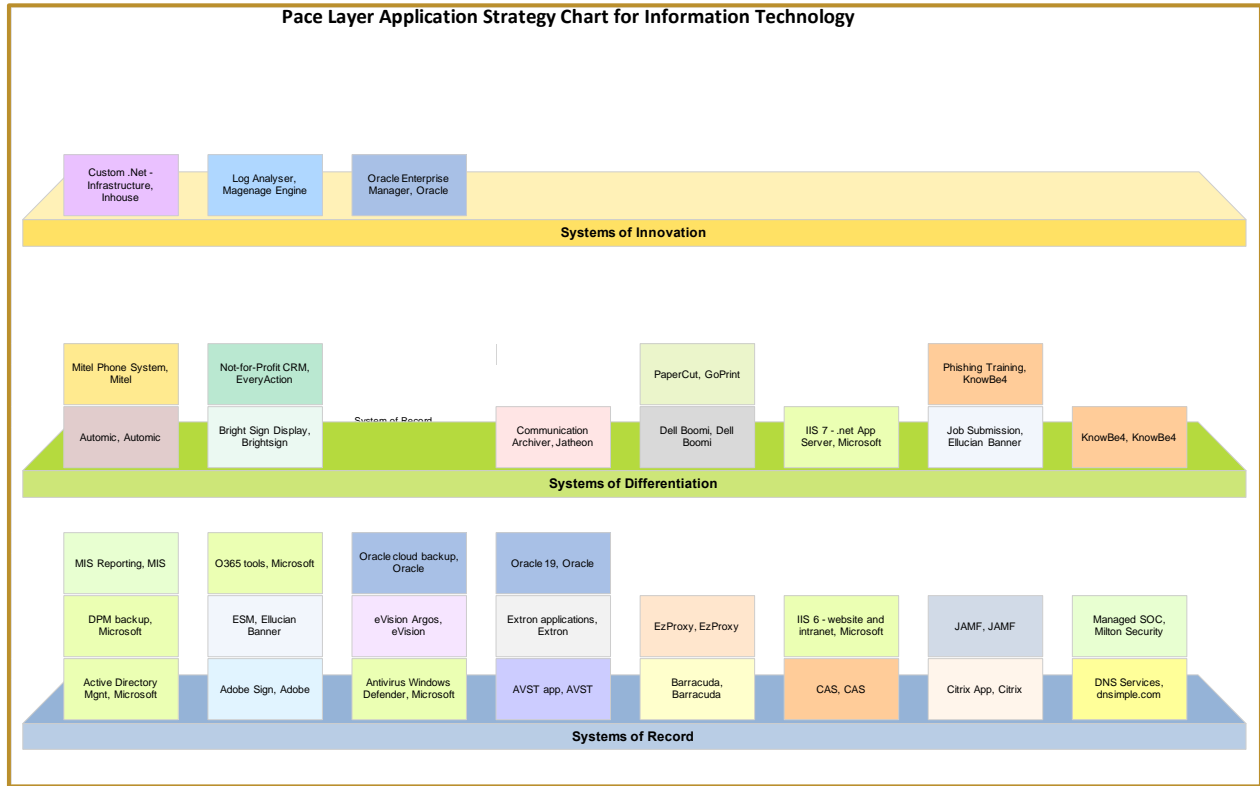
**STUDENT SERVICES**



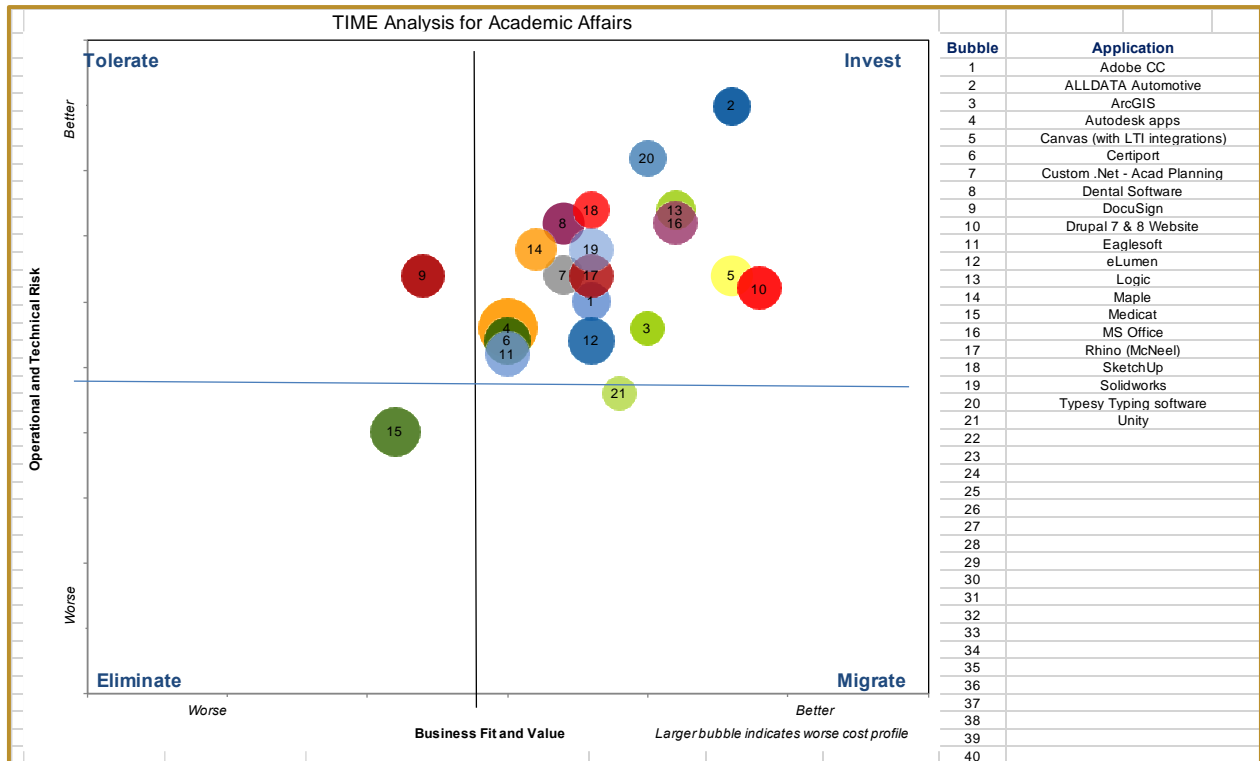


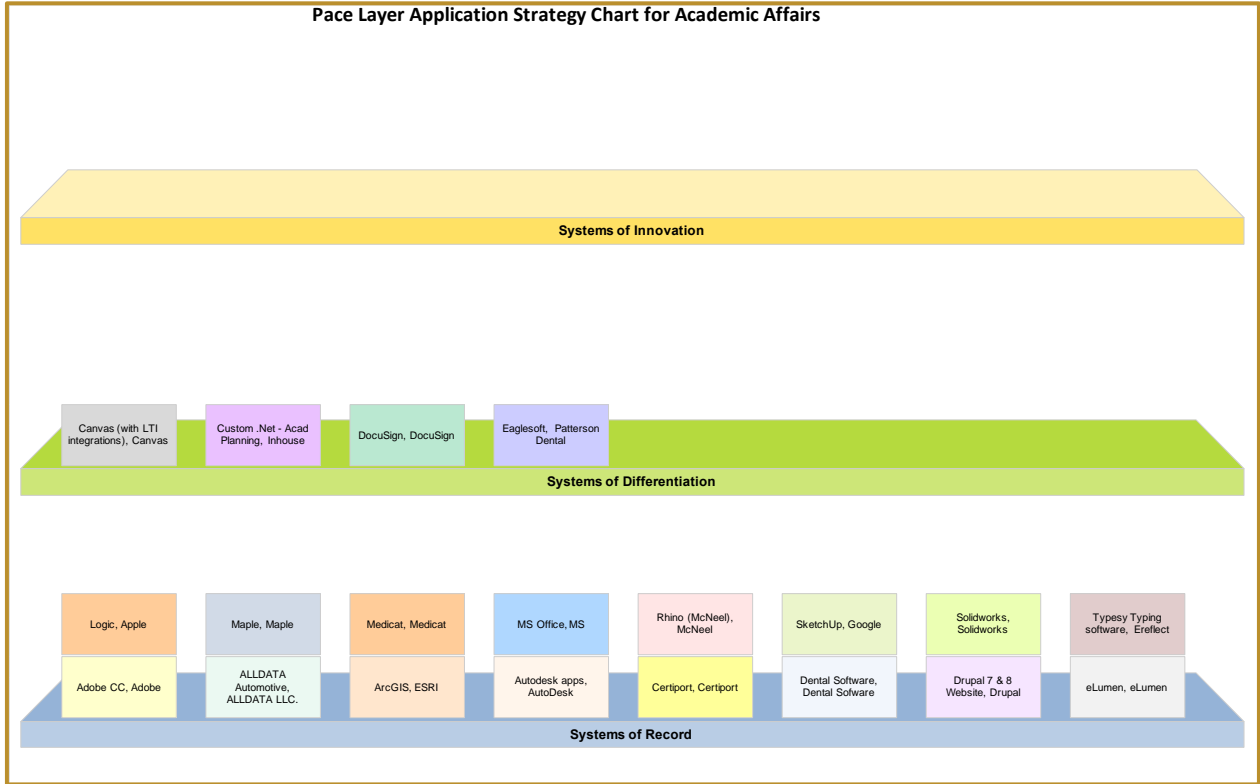
## INFORMATION TECHNOLOGY





ACADEMIC AFFAIRS





**APPENDIX 3: CURRENT-FUTURE STATE - 2021**

The Current State - Future State analysis indicates the internal rating of areas, activities, services, products, and processes related to our maturity roadmap. This chart indicates our improvement tracks, based on the following four criteria: internal expertise, technology, budget, and processes. Please reach out to the IT management if you want to see more data about this analysis.

IT MATURITY: SAMPLE CHART

Marin IT Maturity Roadmap	2019							2020							Current State - 2021							Future State - 2022						
	People	Process	Technology	Budget	Total	Over all State	People	Process	Technology	Budget	Total	Over all State	People	Process	Technology	Budget	Total	Over all State	People	Process	Technology	Budget	Total	Over all State				
	1 Current State is good and needs to be sustained 2 Current State has opportunities to simplify and CI - Within 1 year 3 Current State needs strategic improvements - Long Term Needs needs																											
IT Systems Components																												
Adobe CC, Autodesk apps, Canvas, Custom .Net - Acad Planning, (Custom JSP - Acad Planning-Deprecated 2020), Dental Software, DocuSign, Drupal 7 & 8 Website, eLumen, Medicat, MS Office	2	2	2	2	8	2	2	2	2	2	8	2	1	1	1	1	4	1	1	1	1	1	4	1				
Adobe Sign, AcademicWorks, Advocate (COM Care), Banner 8 & 9 FinancialAid, Banner 8 & 9 Student, Blackboard Connect, CCCApply, Comevo Orientation, Credential parking permits, Credential Transcripts, Custom .Net - Search Tools, Custom .Net - Student Tools, Custom C/PLSQL- Banner Mods, DegreeWork, GoPrint, HigherOne, LaserFiche, Nelnet, SARS (eSARS), SARS Anywhere, SARS Trak, Unified	2	2	2	2	8	2	2	2	2	2	8	2	1	2	2	1	6	1	1	2	2	1	6	1				
eVision (Argos), Ellucian Ethos, SuperGlue	2	2	2	2	8	2	2	2	2	3	9	3	1	1	2	2	6	1	1	1	1	2	5	1				
Skype (Deprecated) Microsoft Team (Added), Yammer, AVST app, Blackboard Connect, O365 tools, SARS (Trak, eSARS, Message, Anywhere)	2	2	2	2	8	2	2	2	2	2	8	2	2	2	2	1	7	2	2	1	2	2	7	1				
Outlook, Scanners, Telephone, Cell phone, Printers, MS Office, Citrix XENApp,	3	3	2	2	10	3	2	2	2	2	8	2	1	2	1	1	5	1	1	2	1	1	5	1				
Laptop, desktop, BYOD, tablet	2	2	1	2	7	2	2	2	2	1	7	2	1	1	3	2	7	2	2	1	2	2	7	2				
Banner-SIS, DegreeWork, Canvas	2	2	3	1	8	3	2	2	2	3	9	3	2	2	3	1	8	3	2	2	3	1	8	3				
Advocate, Comevo, Credential (Transcripts, parking permits), Medicat, HigherOne, Facilitron, Nelnet, DocuSign, EzProxy for library, AcademicWorks, OpenGov, Acquia	2	2	1	1	6	1	2	2	1	1	6	1	2	2	2	1	7	2	2	2	2	1	7	2				
MyCOM Portal, external sites, Intranet, CCCApply	2	2	2	2	8	2	2	2	2	2	8	2	1	2	1	1	5	1	1	1	1	1	4	1				
Petition, Pre/Co-requisite, EDPS, Program Review (Deprecated), Course Outline (Deprecated), Directory search, Welcome Letter, AD sync tool, DayView calendar, Builders (Schedule, budget, & forecast), Student dashboard, Major changes, Non-payment drop app, Automatic move for wait-list, SIS customization	1	1	2	2	6	1	1	2	2	2	7	2	2	2	2	1	7	2	2	2	2	1	7	2				
SSO, CAS, Shibboleth, MFA, InCommon,	2	2	2	1	7	2	2	2	2	1	7	2	1	1	1	1	4	1	1	1	1	1	4	1				
Learning analytics, big data, Data visualization, Ellucian Ethos	2	3	3	3	11	3	2	2	2	3	9	3	2	2	2	2	8	2	2	2	2	1	7	2				
Nudging, texting, queue management, engagement	2	3	2	3	10	3	2	2	2	1	7	2	2	2	3	3	10	3	2	2	2	2	8	2				
O365, exchange online, Azure AD Hybrid server, Barracuda (filter, secure, & Archiver),	2	2	1	2	7	2	2	2	1	1	6	1	1	1	1	1	4	1	1	1	1	1	4	1				
Firewall, switches, Citrix Workspace, VPN, Netscaler, DNS, DHCP, BYOD, wireless	2	2	1	1	6	1	2	2	1	1	6	1	2	2	2	2	8	2	2	2	2	2	8	2				
Firewall management, MFA, IDAM, Antivirus, GPOs, scripts, SCCM, privacy and password policy management, Managed SOC	2	2	1	2	7	2	2	2	1	1	6	1	2	2	2	1	7	2	2	2	2	1	7	2				
PCI-DDS, FERPA, HIPAA, DOJ	2	2	1	2	7	2	2	2	1	1	6	1	2	2	2	2	8	2	2	2	2	2	8	2				
HP3PAR, Storage, HP blades, physical servers, OSs,	2	2	2	2	8	2	2	2	2	2	8	2	2	2	2	2	8	2	2	2	2	2	8	2				
DPM, Oracle cloud, replication, offsite storage, cluster server, Cold Backup	2	2	2	2	8	2	2	2	2	2	8	2	2	2	2	2	8	2	2	2	2	2	8	2				
Oracle, SQL server, MySQL	2	2	2	2	8	2	2	2	2	2	8	2	1	1	2	2	6	1	1	1	2	2	6	1				
Printers, fax, PCs, Macs, laptops, desktops, mobile devices, ServiceDesk, SCCM, Service catalog	2	2	2	2	8	2	2	2	2	2	8	2	1	1	1	1	4	1	1	1	1	1	4	1				
AD Sync tool / O365 powershell scripts, DNS, Analytics, Surveys	1	2	1	2	6	1	1	1	3	1	6	1	2	2	1	1	6	1	1	2	1	1	5	1				
Zoom hardware, UCView, VuView, Extron system, projectors, screens, TVs, document camera,	3	3	2	2	10	3	2	2	2	2	8	2	2	2	1	1	6	1	2	2	1	1	6	1				



SECURITY MATURITY: SAMPLE CHART

			Cyber Security Maturity Model 2021									
			Current State - April 2021					Future State - 6 months				
Family	Control	Short Name	Over all State	People	Process	Technology	Budget	Over all State	People	Policy	Technology	Budget
0	1	<b>Inventory Devices</b>	1.75					0				
System	1.1	Automated inventory	2	3	1	3	3	2.5	2	0	1	1
System	1.2	Deploy DHCP server logging	2.5	2	1	2	3	2	3	0	3	1
System	1.3	Update the inventory	2	2	1	1	0	0				
System	1.4	Maintain inventory	1.5	3	2	2	3	2.5				
System	1.5	Deploy network authentication	1.25	3	3	3	3	3				
System	1.6	Auth sys prior to con to network	2.75	3	3	3	3	3				
0	2	<b>Inventory Software</b>	0					0				
System	2.1	Devise a list authorized software	0	3	0	3	3	2.25				
System	2.2	Deploy whitelisting technology	0	3	2	2	3	2.5				