



UNIVERSITY OF
SOUTH CAROLINA

IT Executive Board

August 2018



Agenda

- I. Welcome and introductions
- II. IT Executive Board purpose and scope discussion
 - Action: Decide on purpose and scope
- III. Current state of IT at USC discussion
 - Accenture Report (March 2016)
 - Progress to date
- IV. IT Strategic Priorities
 - DoIT Enterprise Project Portfolio
- V. Governance Update
- VI. IT Guiding Principles discussion
 - Action: Decide on IT Guiding Principles



IT Executive Board Purpose

- Align *IT strategy* with the university's academic mission
- Review key *IT trends* for impact and adoption
- Ensure consistent progress toward mature *IT governance*
- Oversee investments in *IT resources*
- Identify and effectively manage *IT risks*



IT Executive Board Scope

All Division of Information Technology activities

- Includes major projects, service improvements, and infrastructure investments

University-wide

- Includes IT strategies, investments, projects and resource allocations





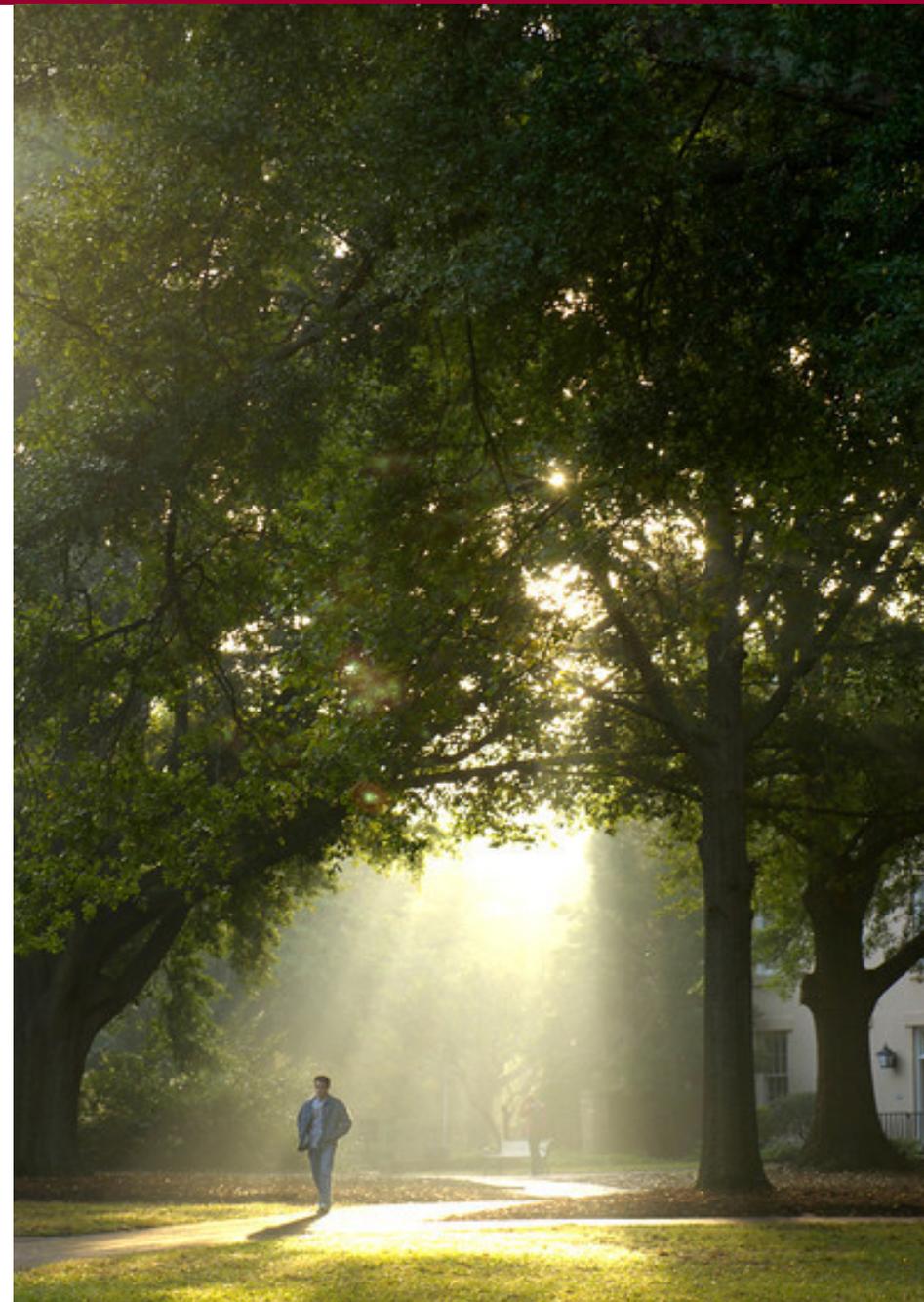
UNIVERSITY OF
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IT Assessment Project Final Report

March 18, 2016

accenture
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Analysis Dimensions

The IT Assessment review IT performance across six primary dimensions. These analysis dimensions helped shaped our recommendations and form the primary sections of our report.

1

IT Spend and Budget:

- Benchmark USC spend against its peers and industry
- Assess investment/funding levels and budget allocations
- **Page 23-32**

2

IT Organization:

- Assess Division of IT roles
- Evaluate USC IT staffing levels
- Analyze how the IT support structure fits the mission
- **Page 33-51**

3

Stakeholder Needs:

- Understand and capture stakeholder issues
- Establish main needs by stakeholder group
- **Page 52-58**

4

Governance and Portfolio:

- Identify existing governance bodies
- Assess existing portfolio mgmt. including projects and tools
- **Page 77-91**

5

Application and Technology:

- Conduct high-level inventory of major applications
- Identify absent or limited technology areas
- **Page 101-106**

6

IT Capability Analysis:

- Review how USC IT executes typical activities
- Gauge its ability to support stakeholder needs
- **Page 59-76**

Findings

Interviews and benchmarking suggest IT services are constrained by lack of funding, affecting capacity and ability to meet stakeholder needs.

Analysis Section:

Overview of Findings:

1

IT Spend and Budget

1.1. Low Spend per Student – Spend per student is lower than peer institutions, leading to difficulty meeting demand for service and new capabilities.

1.2. Constrained Budgets – IT spend as a percentage of budget is in line with peers; however the overall budget of USC is lower than that of peers and aspirants, suggesting that USC must focus on operating efficiently to help maximize value from constrained resources

2

IT Organization

2.1. Organic Growth Strategy and Campus Responsibilities – Systems and campus responsibilities are intermingled throughout the IT organization. Academic Technology is fragmented across several units.

2.2. Understaffing – Benchmarks suggest that USC IT is understaffed, limiting its ability to maintain and grow services

2.3 Distribution of IT Resources – IT support is distributed; in addition to UTS, campus units and departments typically have a small team of support staff

2.4 Team Silos– Organizationally, departmental units and UTS units are isolated with limited pockets of collaboration and communication

2.5 IBM Engagement – USC and IBM arrangements have been limited by lack of engagement and dialogue

3

Stakeholder Needs

3.1 Respected Teams – Division of IT / University Technology Services staff are respected and acknowledged for their ability to solve issues and for their technical expertise within functional areas

3.2 Limited Support – Stakeholders have reported that existing services do not meet their needs or expectations; for example, classroom technology requires after-hours support, but UTS operates on 9-5 schedule

3.3 High Prices – Campus buyers perceive UTS rates to be high; as a result, they have started to engage and purchase services with external providers

3.4 Transparency and Visibility – Interviews suggest that stakeholders do not feel engaged in the decision-making process and often struggle to navigate the IT organization to find a point of contact on a particular issue

Findings

Legacy technology within portfolio also suggests similar funding limitations, and IT capabilities outside of security reflect lower levels of maturity and investment.

Analysis Section:

Overview of Findings:

4

IT Governance

4.1 Tactical Governance with Limited Oversight – USC IT governance is primarily based on functional/program governance; as a result, there is limited “umbrella” oversight which limits IT’s ability to establish, socialize and align to a single vision/strategy (e.g. divergence of online teaching technologies)
4.2. Limited Innovation/Architecture Planning – Innovation occurs within pockets with limited opportunities to cross-pollinate and fund efforts; additionally a lack of architecture governance leads to pockets of technology that are difficult to integrate

5

Application and Technology

5.1 Legacy Technology – Several applications were custom built on older technology platforms, with capabilities the users have indicated do not meet their current and future needs
5.2 Networking – Stakeholders frequently report issues with wireless access coverage and capacity, particularly in classrooms
5.3 Research Computing – USC’s Research Cyberinfrastructure program is widely acknowledged as a strong capability meeting a critical need. Current computational and storage capacity lags significantly behind peers
5.4 Redundancies – Some redundancy is present across capabilities within the application portfolio, potentially leading to inefficiently in license spend and support, and fragmentation of data.
5.5 Data Center – Solutions support by the data center are viewed as stable and reliable. The data center is well maintained, standardized, and working toward adopting and implementing new technologies and concepts
5.6 Limited Digital Technologies – Analytic and enterprise information management capabilities are in initial stages of development. The operational data store and Cognos data marts have been established, significant work remains to link student, employee, finance and ancillary data to deliver institutional insights.

6

Capability Assessment

6.1 Strong Capabilities in Security – Security has evolved into a mature capability that is well defined on campus and has a strong operational framework in place. Standardization of security architecture and
6.2 Opportunities to Improve – IT is improving its operations, but has room and opportunities to build out its ability to execute across a number of capabilities such as Strategic IT Alignment and Architecture

Recommendations

Across Spend/Budget and Organization, USC has opportunities to increase efficiencies to reinvest savings and restructure the organization to align accountabilities.

Recommendations

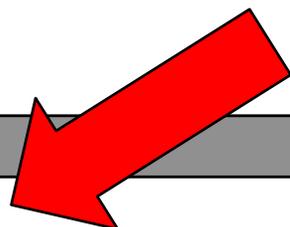
Benefits

1 IT Spend and Budget

A. Enhance IT Efficiency:

Initiate and sustain campus-wide program(s) to increase IT efficiencies and reinvest savings into IT strategic initiatives

-  Reduces IT operating costs through initiatives to address service redundancies, spend inefficiency.
-  Increases ability to fund capital projects to advance technology capabilities



2 IT Organization

B: Realign Organization:

Evaluate Organizational structure and reporting lines to ensure that accountabilities are tied with the ability to execute

C: Restructure Service Model:

Restructure portfolio of shared service and evaluate who should deliver each service at the system and campus level

D: Enhance IBM Engagement:

Work with IBM to define managed services and innovation governance, clarify demand expectations, and to further define the IBM engagement model

-  Rationalizes services to consistent, standard providers where economies of scale and talent can be achieved
-  Improves productivity, vendor performance and service alignment
-  Improves ability to meet customer needs through improved delivery service structure and methods at the campus and system level
-  Maps responsibilities to the roles that are best positioned to assume them



Recommendations

Key stakeholder needs may be met through evaluation of existing services, support of campus purchasing needs, and establishing an operating model to increase visibility.

Recommendations

Benefits

3 Stakeholder Needs

E: Extend Support Levels:

Evaluate needs for end user and classroom support to scale service for growth of online, evening and weekend instruction

F: Revisit Service Price:

Update portfolio of services and pricing levels to establish offerings that are more in line with the needs and expectations of the campus usage (e.g., common good, basic hosting)

G: Expand IT Purchasing Service:

Extend the roles within the IT business operations office to facilitate local technology purchase. Coordinate and aggregate local needs through regular meetings

H: Develop Operating Model:

Establish a view of IT by creating a blueprint of how the organization is structured and the processes it will execute (see Organization and Capability Assessment)

 Reduces duplicative spending on external services and applications

 Enhances existing services to meet evolving customer needs (e.g., new hours, high-touch support)

 Adjusts pricing levels and offerings to match customer expectations and needs

 Increases utilization of existing IT services and assets

 Reduces risk of utilizing unknown 3rd party vendors or incorporate untested solutions into the IT ecosystem

 Increases visibility and alignment of commonly executed IT processes (e.g., resolve issues the same way across units)



IT Cost Reduction



Service Quality



Internal Customer Satisfaction



Operational Efficiency



Risk Mitigation



Agility



University Alignment

Recommendations

USC IT requires a complete, defined Governance framework in order to engage stakeholders across the University and jointly craft a strategy and vision for applying technology to enable USC’s mission.

Recommendations

Benefits

4 IT Governance

I: Bolster Governance:

Define and charter a complete Governance framework that involves the right set of decision makers to make and manage align technology-related decisions across campus

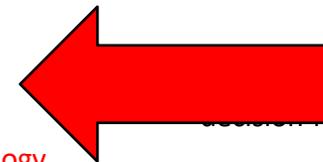
J: Define Technology Vision:

Through governance, jointly define a cohesive vision of the future USC’s technology footprint and high-level strategic imperatives across USC campus and system; requires the creation of University-wide strategy

K: Grow Innovation:

Encourage dialogue and investigation of innovative technologies by establishing team to investigate, champion and mobilize implementation of new opportunities

 Reduces duplicative spending, low value work or rework as a result of conflicting decisions

 Improves customer engagement and transparency of decision-making process

 Improves awareness of technology trends and new products; faster decision-making processes

 Establishes technology vision that executes on USC University strategy across units and DoIT



Recommendations

Application and technology initiatives are targeted at enhancing and advancing technology capabilities while rationalizing duplicative systems.

Recommendations

Benefits

5 Application & Technology

L: Identify Target Application Portfolio:

Establish a detailed application inventory for the system, and identify opportunities to modernize the portfolio while eliminating redundancy

M: Enhance Networking:

Conduct effort to enhance the enterprise network architecture and upgrade access points to increase service quality

N: Expand Research Computing:

Invest in expanding the research computing footprint to provide compute and storage capacity in line with peer group.

O: Grow Analytic Insight:

Align efforts to develop business intelligence capabilities and implement data governance. Focus initial efforts on building analytics across the student lifecycle

P: Realign PeopleSoft Program:

Focus on stabilizing finance and restoring control over the HCM implementation project

-  Reduces cost of managing consolidated application and infrastructure footprint
-  Increases availability of networking to resolve major end-user complaint and ability to use analytics to enhance student experience
-  Addresses major areas of need voiced by both Academic and Administrative customers
-  Improves faculty/researcher retention and talent acquisition arising from competitive research computing offerings



IT Cost Reduction



Service Quality



Internal Customer Satisfaction



Operational Efficiency



Risk Mitigation



Agility

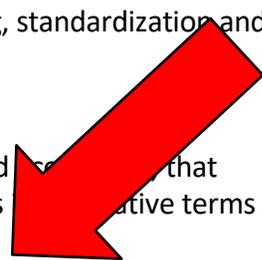


University Alignment

Recommendations

Across its capabilities, USC IT has opportunities to improve maturity through multiple initiatives.

Recommendations	Benefits
<div style="background-color: #f4a460; padding: 5px; border: 1px solid black;"> 6 IT Capabilities </div>	
<p>Q: Strengthen Security Architecture: Implement a security reference architecture along with a single automated identity management solution.</p> <p>R: Automate Provisioning and De-provisioning: Integrate workflow into onboarding and off-boarding processes in order to grant or remove access based on employee status and status changes</p> <p>S: Build Enterprise Architecture Function: Develop roles and processes to support architecture planning, standardization and governance to guide implementation of technology solutions</p> <p>T: Report Performance Metrics: Define a performance management framework (e.g. Balanced Scorecard) that enables IT to articulate value and performance to the campus in quantitative terms</p> <p>U: Formalize Change Management: Create a formal organizational Change Management process/function to introduce new services to the broader campus and system and deliver IT-related communications</p> <p>V: Implement Relationship Management: Establish function regular meetings with campus customers to review performance, share ideas, and manage expectations</p>	<ul style="list-style-type: none">  Decreases system support costs through standardized technology (e.g., less need for complex interfaces)  Improves integration of data and university systems resulting in opportunities for automation and streamlined services/processes  Supports consistent technology offerings with single point of contact resulting in improved customer experience  Increases standardization and documentation resulting in more efficient/quicker response and resolution  Reduces security risks through use of robust identity and access management solutions and creation of standardized architecture  Provides IT with the ability to scale/modify technology quickly based on defined blueprints and designs  Increases ability to engage stakeholders and clearly establish and manage expectations
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> IT Cost Reduction</div> <div style="text-align: center;"> Service Quality</div> <div style="text-align: center;"> Internal Customer Satisfaction</div> <div style="text-align: center;"> Operational Efficiency</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> Risk Mitigation</div> <div style="text-align: center;"> Agility</div> <div style="text-align: center;"> University Alignment</div> </div>



Accomplishments

- Multifactor Authentication
- More secure VPN
- Improved Data Center security
- IT Security awareness program
- SPAM filter and identity protection
- New research cluster
- RCI seminars and partnerships
- Data Center capacity expansion
- Enterprise MATLAB and Qualtrics licenses
- Beyond the Classroom Matters
- Blackboard updates
- Wireless network expansion
- Banner 9 Admin pages
- Identity and Access Management
- PeopleSoft HR-Payroll
- Data Management
- Technical Review Board
- Introduction of ServiceNow
- Self-Service Catalog expansion





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IT Strategic Priorities 2018-2021

Strategic Priorities

Over the next four years, the Division of Information Technology will focus on the following Strategic Priorities...

1

Advance the academic and research missions of the university

2

Enhance the student digital experience

3

Improve administrative efficiencies

4

Establish a best-in-class service delivery model

5

Provide a reliable and flexible technology infrastructure



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Strategic Priority 1:

Advance the academic and research missions of the university

The preeminent priority of the Division of Information Technology will be to make substantive contributions to the teaching and research missions of the university.

OBJECTIVES:

- A. Collaborate with teaching organizations across campus
- B. Improve the efficacy of the classroom resources
- C. Incorporate new tools into learning environments
- D. Expand research and high-performance computing capabilities
- E. Design and implement storage solutions that directly support research initiatives
- F. Strengthen pre- and post-award processes and systems



Strategic Priority 2:

Enhance the student digital experience

The Division of Information Technology will equip students with the technology necessary to achieve academic success.

OBJECTIVES:

- A. Engage students in governance processes**
- B. Develop a wireless roadmap**
- C. Establish consistent use of learning tools**
- D. Develop a technology portal that combines various resources into one centralized, searchable location**
- E. Develop student-centric applications**



DoIT Enterprise Projects

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Priority	Project/Initiative	Description/Current Effort	Sponsor	PM	Start Date	Target Date	Stage	Overall	Scope	Schedule	Budget	Communication
2	1	IAM from the Mainframe (part of the Mainframe Decommission program)	Move Identity management off of the mainframe	James Perry	Al Crothers	1/2/2016	1/1/2019	Executing					
3	1	Peoplesoft HCM	Implementing Peoplesoft HR/Payroll	Jeff Farnham	John Schell	10/1/2017	1/1/2019	Executing					
4	2	Software Service & Delivery	ServiceNow Phase2 - features and addons	Janeen Blanton	Stuart Arnold	4/16/2018	8/2/2018	Executing					
5	3	DCO Redesign_Upgrade	Upgrading Cooling, Security, Power, etc.	Ron Scherba	Dexter Kennedy	5/30/2017	9/30/2018	Executing					
6	4	Office365 Mail Migration	Preparing for Dual email account migrations in early Sept 2018; plan to establish Hybrid environment and start single account user in October 2018	Ron Scherba	Al Crothers	1/3/2016	12/31/2018	Executing					
7	5	Wireless Infrastructure Upgrades - Phase 3	Phase 3 of wireless network upgrades has been finished	Ron Scherba	Rick Lambert	9/4/2017	6/18/2018	Complete					
8	6	Beyond the Classroom Matters v4.1	Build BTCM Experiential Learning data collection template and validation process; Currently, resolving any outstanding UAT concerns; will deploy when complete; will create a new project for additional requirements	Doug Foster	Al Crothers	1/16/2018	7/1/2018	Executing					
9	7	Historical Data Migrations (part of the Mainframe Decommission program)	Migrate historical data and plan for mainframe shut down	Randy Shelley	Renee Snedecor	5/9/2017	1/31/2020	Executing					
10	8	FireEye Enhanced Threat Protection	Upgrade internet security tools for email environments is complete; team is working on user concerns and/issues	Ron Scherba	Rick Lambert	7/1/2017	student email - 10/16/17; Fac/Staff email - 6/2/18	Executing					
11		Network Access Control - Phase 1	Upgrade Network Access Control	Ron Scherba	Rick Lambert	1/11/2018	8/31/2018	Executing					
12		Juniper VPN Decommission	The Juniper SA4500 SSL VPN is "End of Support" as of 12/31/2017 and will be decommissioned	Todd McSwain	Rick Lambert	12/7/2017	TBD	Executing					
13		As-Is TRM (part of TRB)	Technical Reference Module - draft requirements for document complete - working with Michelle Foster on delivery message	Doug Foster	Anthony Ryan		TBD	Executing			Ongoing	N/A	
14		Accessibility - Ally (Bb)		Mike Kelly	Mitchel			Executing					
15		Data Cookbook/Data Dictionary - Current Phase	Working with SD&S to establish integration with the Data Cookbook and establish Data Governance as a service. Setting up the workflows, templates, as well as developing the data dictionary content with the functional areas.	Mike Kelly	Jeremy Knotts		9/28/2018	Executing			Ongoing		
16		Banner 9 Administrative Rollout	In production; working on a few report issues	Scott Verzyl/ Randy Shelley	Sean Sims	10/1/2017	6/27/2018	Complete					
17		Governance build out	Exploring need for additional governance groups like High Performance Computing and Executive Council	Doug Foster	Michelle Foster		12/31/2018	Executing				N/A	
18		Advancement Project	Customer working thru procurement process	Paula Bethea	Stuart Arnold	TBD		Procurement					
19		Network Core Redesign	Architectural design; pending budget (~\$10M)	Ron Scherba	TBD	TBD		Potential					
20		Global Carolina Database - Mobility	Customer working with application provider	Magdalena Grudzinski-Hall	Stuart Arnold	5/1/2018	6/30/2019	Planning					



Strategic Priority 3:

Improve administrative efficiencies

We will work to streamline administrative systems and processes to minimize overhead and duplicated work.

OBJECTIVES:

- A. Improve business processes
- B. Integrate university systems
- C. Improve business intelligence and analytics capabilities
- D. Eliminate redundant technologies



Strategic Priority 4:

Establish a best-in-class service delivery model

The services offered by the Division of Information Technology should be easily accessible, competitively priced, and repeatable.

OBJECTIVES:

- A. Implement a robust Service Management program
- B. Recruit, retain, and develop top talent
- C. Develop sustainable billing/funding model
- D. Identify and eliminate duplicate IT service offerings
- E. Establish a solid governance model



Strategic Priority 5:

Provide a reliable & flexible technology infrastructure

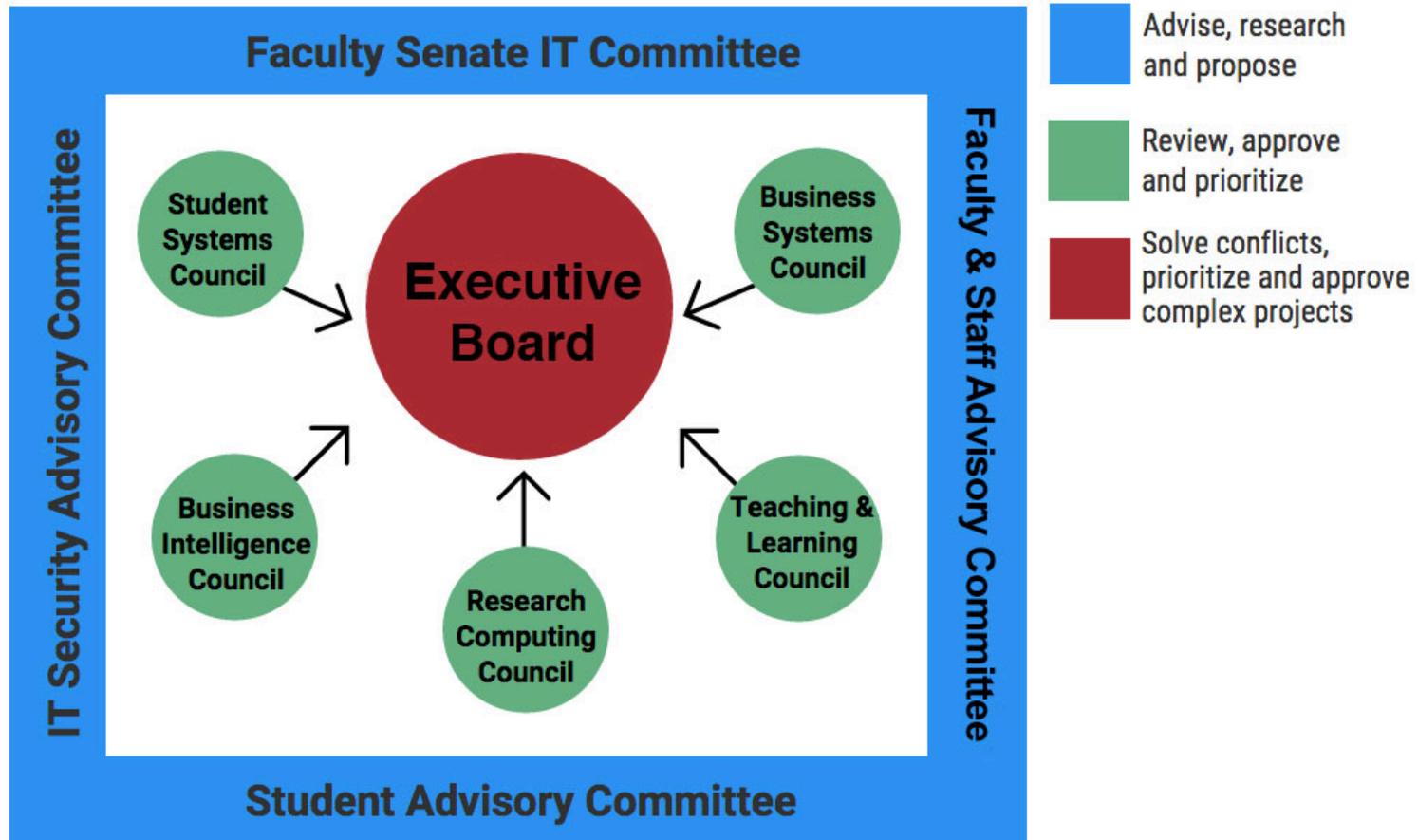
The Division of Information Technology will plan for future growth and innovation by providing a technology infrastructure that can be expanded, upgraded, and replaced to meet growing needs.

OBJECTIVES:

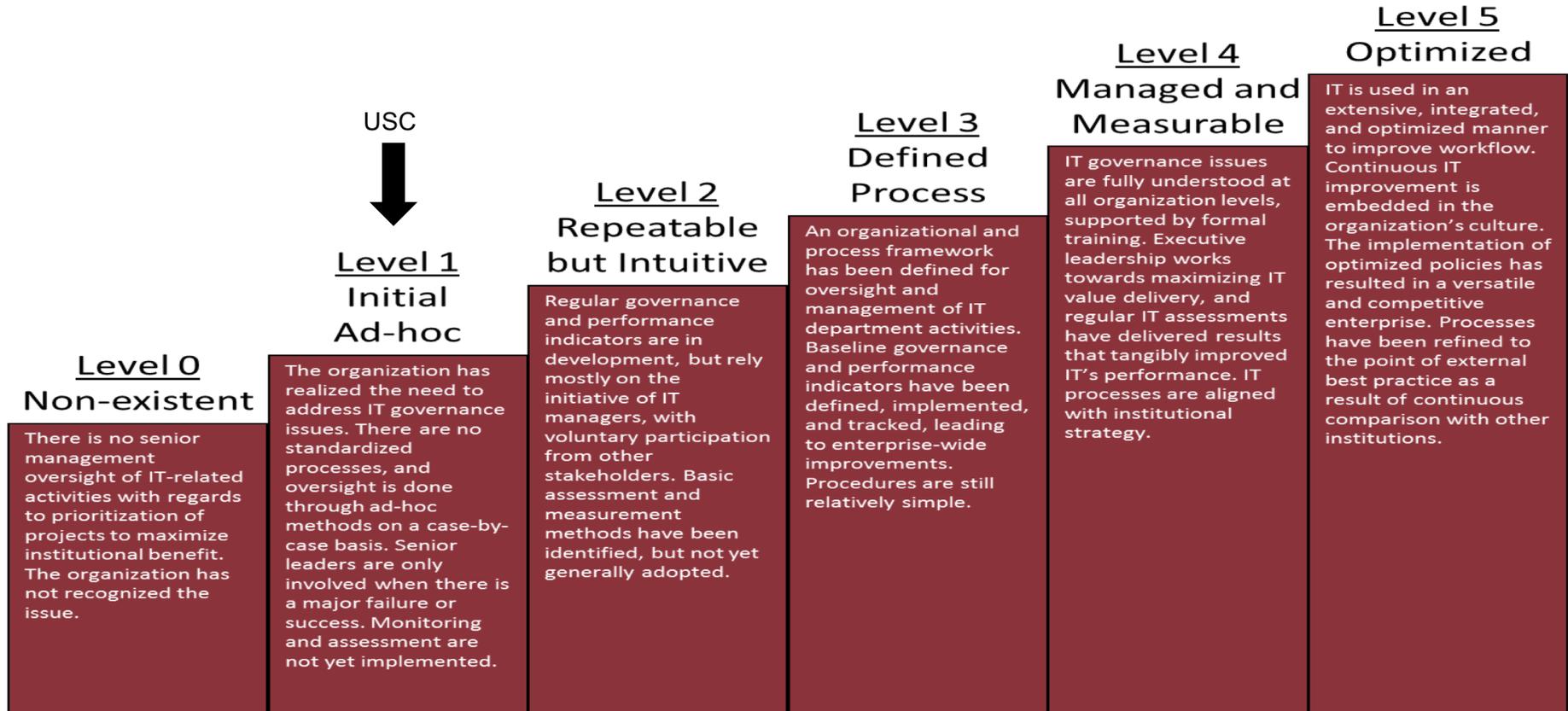
- A. Develop Tier 2 data center capabilities
- B. Develop and publish a cloud strategy (research, storage, applications)
- C. Continually improve network capabilities
- D. Implement massively parallel database environment
- E. Maintain best-in-class information security programs



IT Governance Model



Governance Maturity

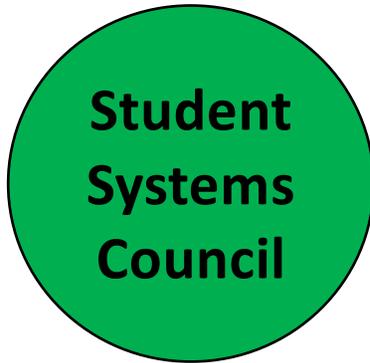
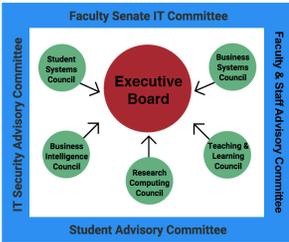


Source: EAB.COM



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Current State – created groups



Scope:
Banner, Degree Works
Attendees:
Registrar, Bursar,
Financial Aid
Current:
Prioritization, Roadmap
Development

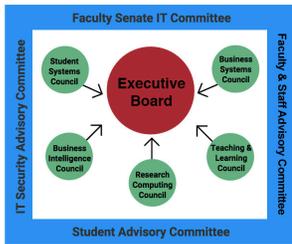
Faculty & Staff Advisory Committee
Scope: All IT issues
Attendees: 27 Faculty, staff, IT members
Current: Ideas, investigation, recommendation

Student Advisory Committee
Scope: Student digital experience
Attendees: 15 student representatives
Current: Ideas, pain points, “A day in the life”

CIO Roundtable
Scope: System IT efficiency
Attendees: Comprehensive CIOs, Palmetto College
Current: Planning, ideas

Technical Review Board
Scope: IT technical standards
Attendees: 10 central IT architects
Current: Current state





Current State – pre-existing groups

Faculty Senate Research Committee

Scope: Initial HPC build, storage
Attendees: Dean Haj-Hariri, research faculty
Current: Needs to be reconstituted

IT Security Advisory Committee

Scope: IT security
Attendees: 19 cross-functional members
Current: Security program input

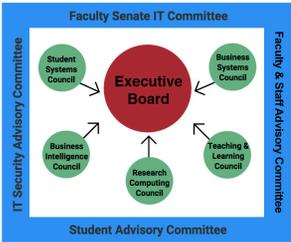
Faculty Senate IT Committee

Scope: All IT issues
Attendees: Simon Tarr, Faculty Senate members
Current: Strategic alignment

Classroom Enhancement & Scheduling

Scope: Classroom technology investment
Attendees: Faculty, Registrar, IT
Current: Investment allocation





Next Steps



Scope:
 Strategy, System-wide,
 Investment
Attendees:
 Provost, COO, Dean,
 Chancellor, VP Student
 Affairs, CIO, faculty,
 student



Scope:
 Data governance
Attendees:
 Executive level,
 system-wide
Current:
 Establish strategy, ratify
 policy, data processes

Faculty Research Advisory Committee

Scope: Research compute,
 network, storage
Attendees: Research faculty -
 HPC
Current: Research
 Infrastructure
 Roadmap



IT Guiding Principles

