

**University of Pittsburgh
Information Technology Assessment Report - Final**

February 14, 2019

Agenda






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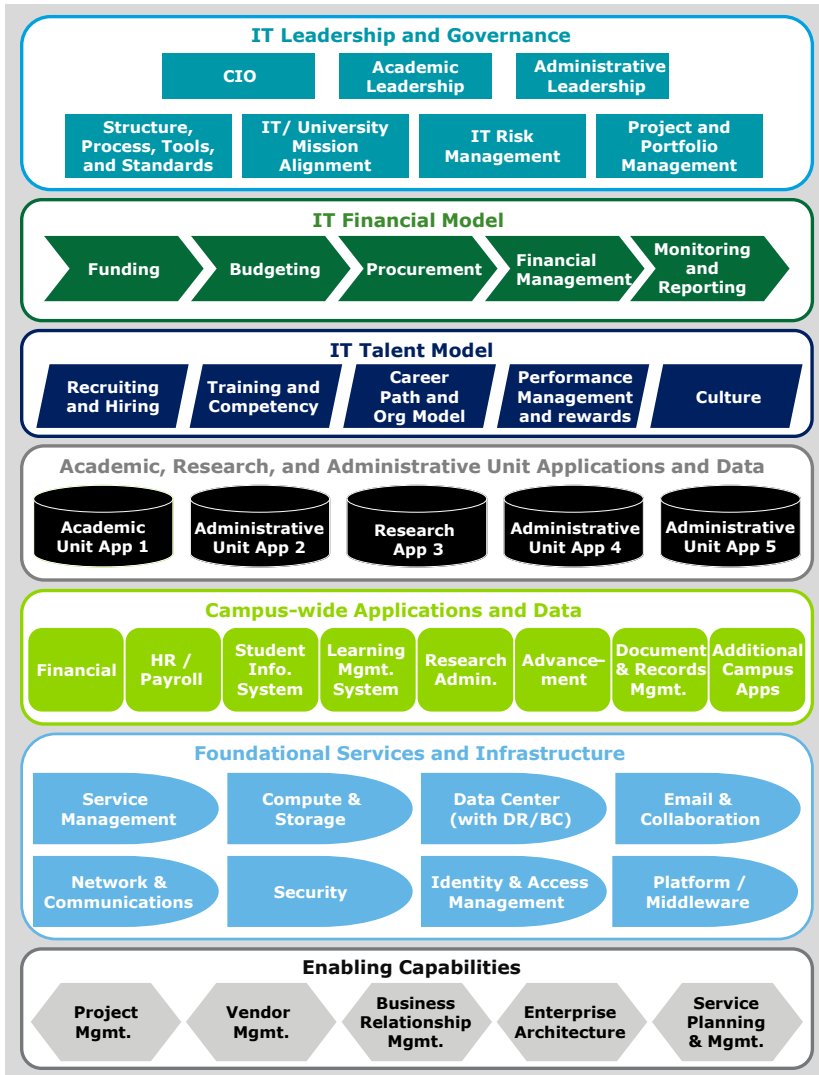


**INTRODUCTION AND
PROCESS**

IT Assessment Objectives

-  Assess the current state of technology
-  Meet with key IT stakeholders across all campuses
-  Benchmark performance against peer institutions in higher education
-  Make recommendations to achieve a future state vision for IT
-  Define a roadmap for prioritizing and implementing recommendations

Application of the IT Transformation Framework



IT Governance



IT Finance



IT Talent



Technology and Services

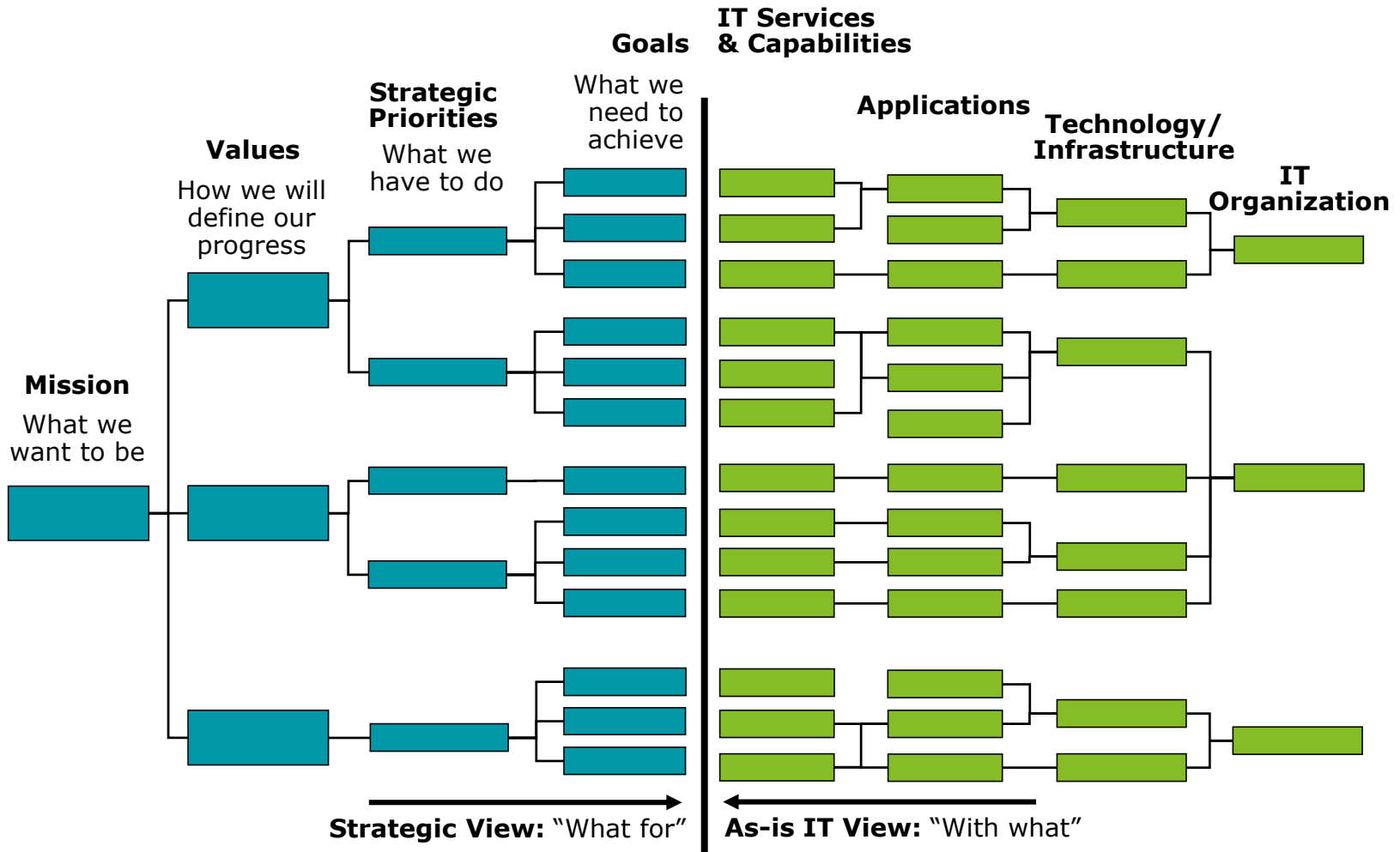
- Infrastructure
- Applications
- Service Management



Cross-Functional

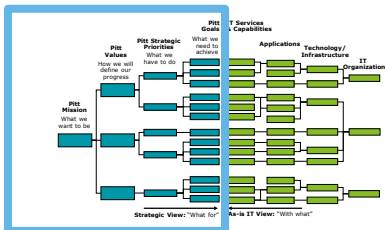
- Data
- Research Computing

IT at the University of Pittsburgh



"IT Strategy Tree" model maps the University's goals against the capabilities of IT

The Plan for Pitt



Pitt Mission

What we want to be

- Offer superior educational programs
- Advance the frontiers of knowledge and creative endeavor
- Share expertise with private, community, and public partners

Pitt Values

How we will define our progress

- Excellence, Impact
- Integrity, Virtue
- Collaboration, Collegiality
- Diversity, Inclusion
- Entrepreneurship, Agility

Pitt Strategic Priorities

What we have to do

- Consistently Deliver Excellence in Education
- Impact Through Pioneering Research
- Build Community Strength
- Extend Our Global Reach
- Provide Top Value
- Secure an Adequate Resource Base

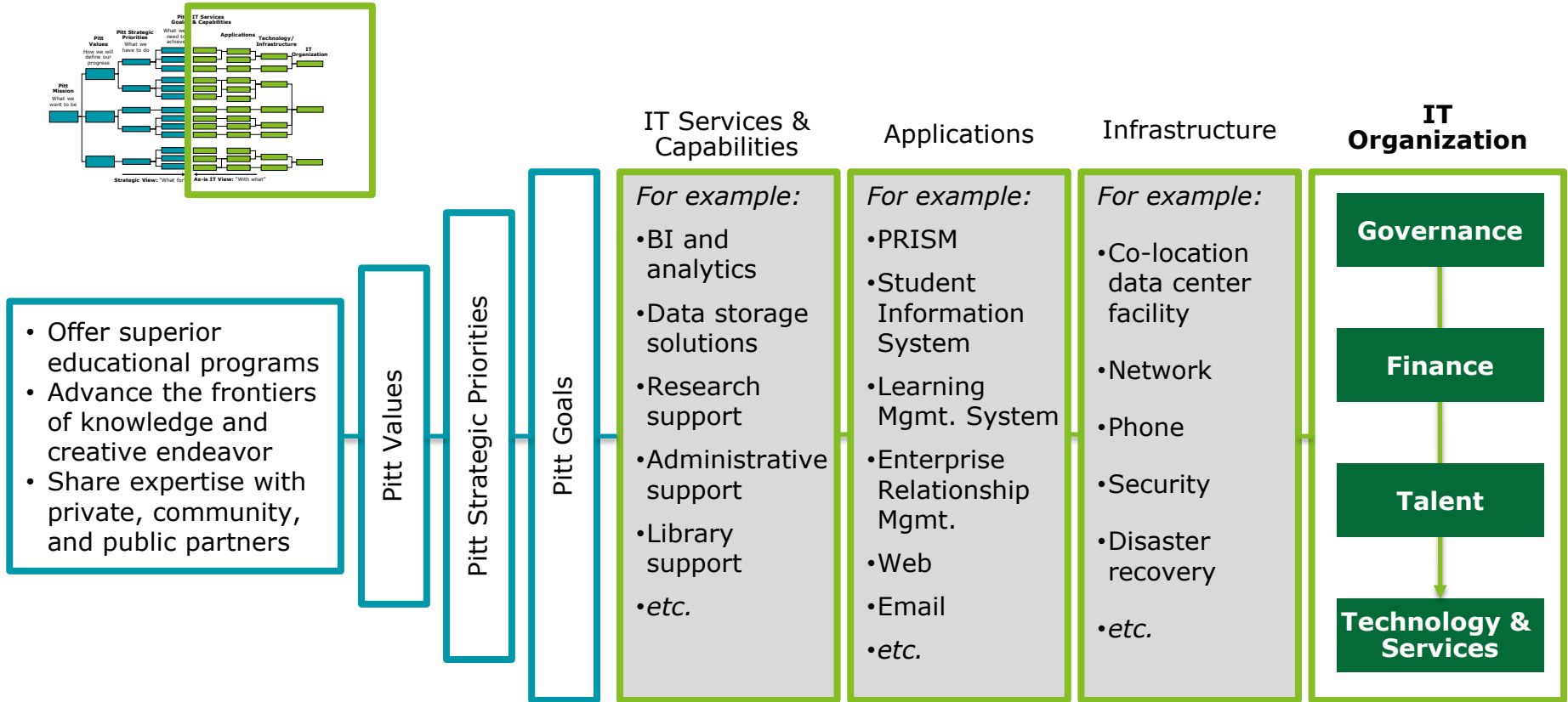
Pitt Goals

What we need to achieve

- Advance Educational Excellence
- Engage in Research of Impact
- Strengthen Communities
- Promote Diversity and Inclusion
- Embrace the World
- Build Foundational Strength

"IT Strategy Tree" model maps the University's goals against the capabilities of IT

IT as an Enabler of the Plan for Pitt

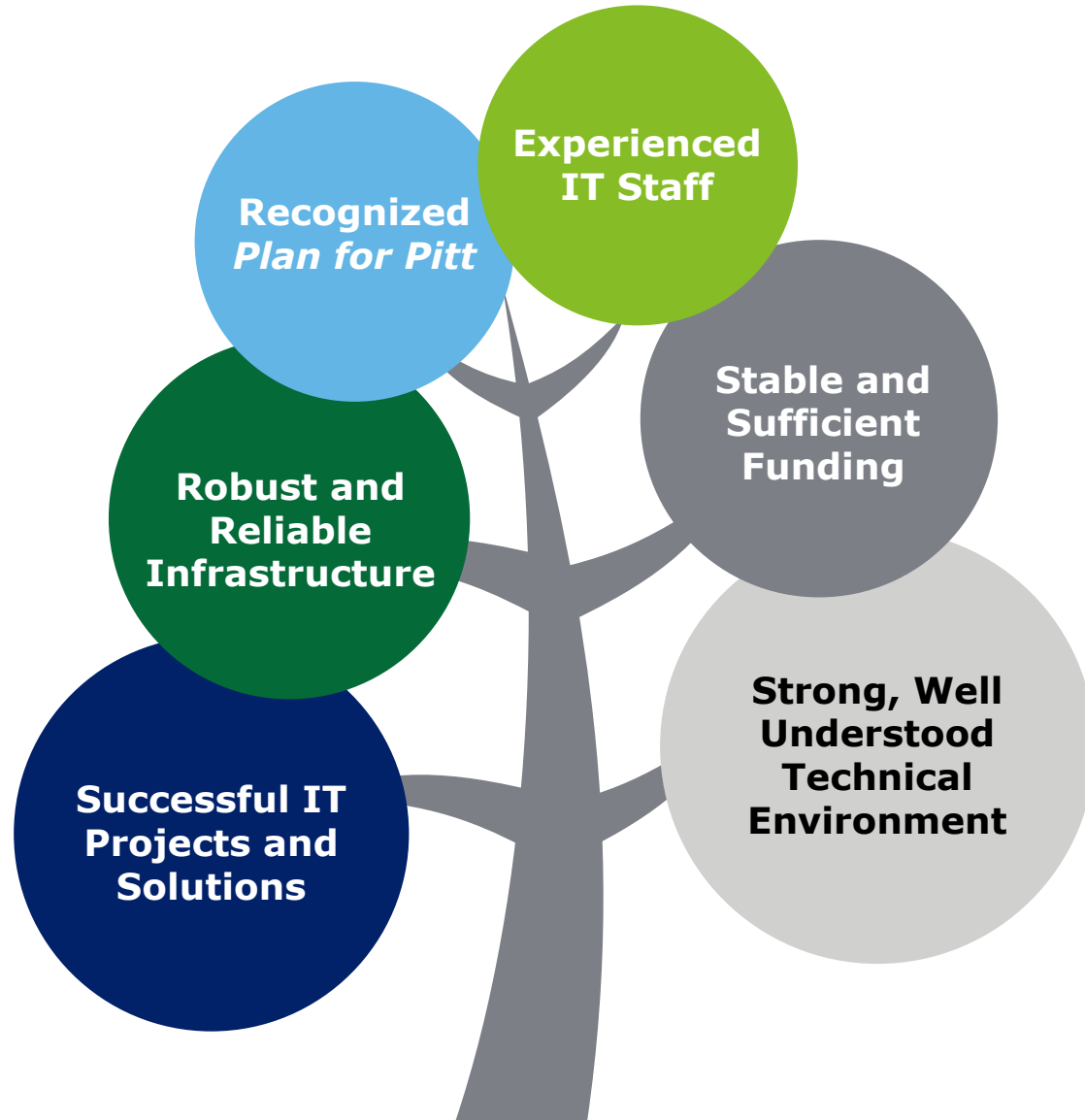


"IT Strategy Tree" model maps the University's goals against the capabilities of IT



**CURRENT STATE
THEMES**

Existing Strengths of IT at Pitt



IT At-a-Glance



Pitt spends over \$132M on IT

- 46% on salaries and benefits
- 54% on goods and services
- 41% of total IT spend charged to CSSD's budget; 59% charged to non-CSSD budgets
- 94% of IT spend is managed as follows:
 - 48% of commonly used IT hardware and software purchases was through university-wide contracted suppliers or other enterprise agreements
 - 46% was special-purpose hardware, software, or consulting services for a specific responsibility center
 - 80% of IT spend was with 3% of IT suppliers



621 IT staff FTEs across Pitt

- 37% in CSSD; 63% across non-CSSD units
- IT staff in 97 schools and departments

IT At-a-Glance



While many core IT services are centralized at CSSD, there are a significant amount of IT services decentralized across campus impacting efficiency, effectiveness, and risk management

Some examples include:

- FIS runs and operates PRISM HR and Financials from hardware to applications, resulting in duplicate services, solution selection, and data sharing capabilities
- Pitt has over 19 help desks on campus using at least 16 different ticketing systems
- About 1/3 of all physical servers reside outside the CSSD data center
- At least 4 other data centers across Pitt campuses

Stakeholder Perceptions of IT at Pitt

IT Effectiveness Assessment Questions

Average Stakeholder Perception

Business IT Alignment

- Level of understanding of Pitt's strategic priorities?
- Quality of relationship with academic/administrative units?

IT Governance

- Clarity of IT governance groups?
- Effectiveness of IT governance at Pitt?
- Ability to successfully deliver projects on time and budget?

IT Optimization

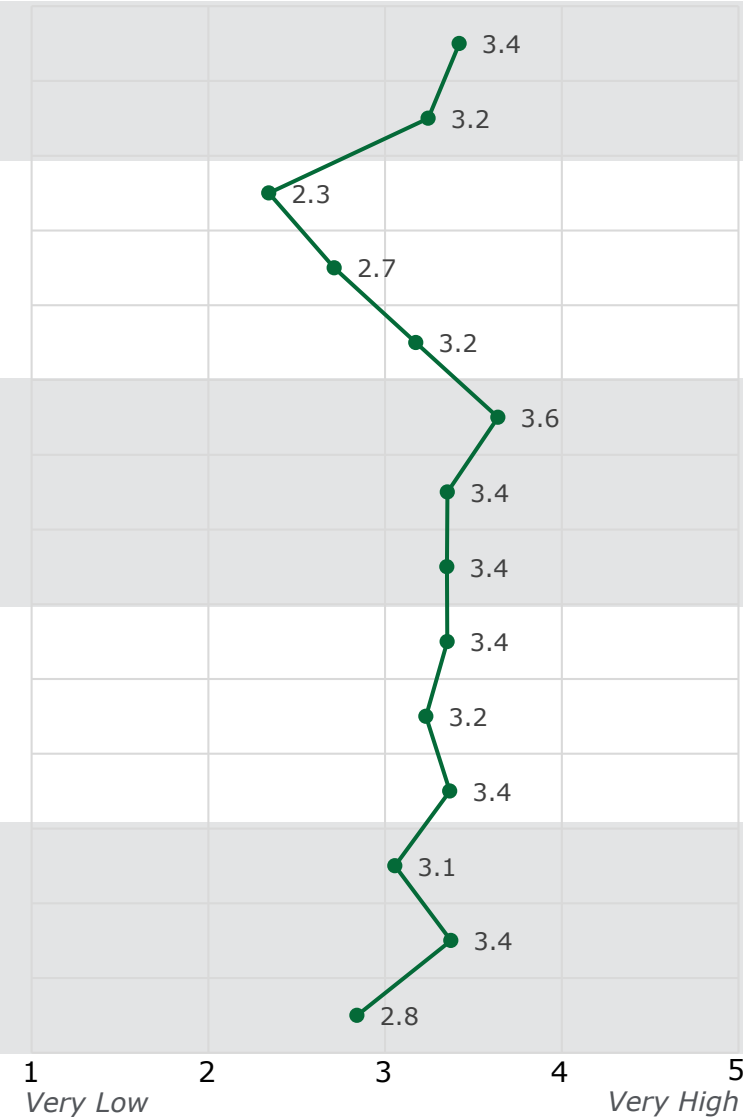
- Quality of infrastructure services?
- Quality of application services?
- Effectiveness of enterprise architecture and standards at Pitt?

IT Service Management

- Level of customer satisfaction with services?
- Clarity of services offered?
- Value of services offered?

IT Organization Model

- Perception of sufficiency of personnel?
- Perception of quality of personnel?
- Effectiveness of organizational structure?



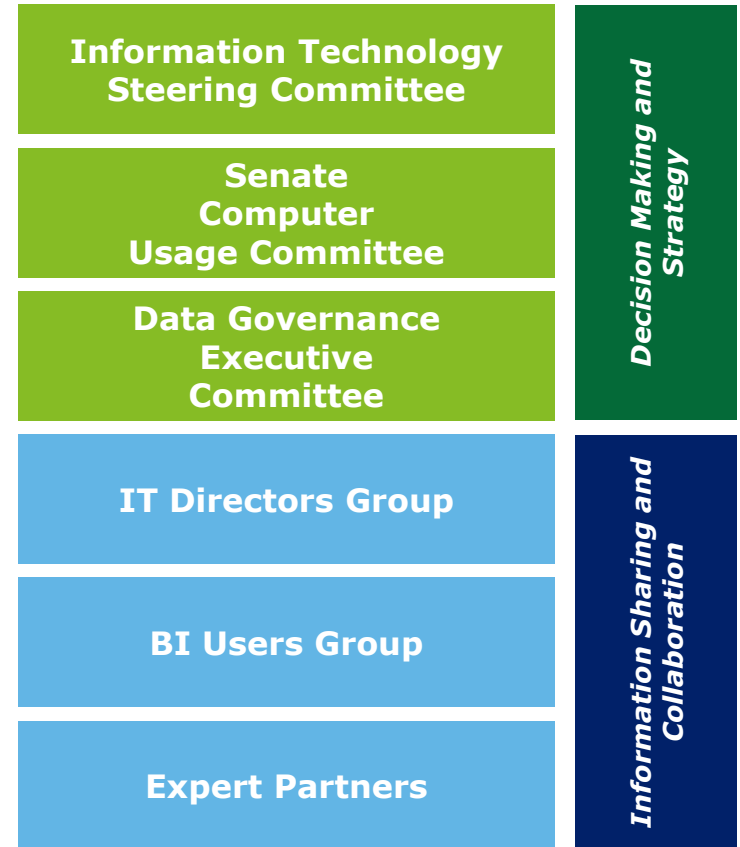
IT Governance Findings



Key Findings

- Lack of effective or transparent way to facilitate/enforce enterprise decision-making
- IT strategic planning not tied to budgeting process
- Duplicate IT infrastructure and security services between CSSD and FIS, and data services between CSSD and Office of the Provost
- Siloed IT divisions mean different people ultimately responsible for risk

Current Governance Groups



IT Finance Findings



Key Findings

- Pitt spends over \$132M on IT: \$61M on IT staff, \$72M on IT purchases*
- 41% of IT spend is charged to CSSD's budget, 59% is charged to non-CSSD budgets
- CSSD is funded primarily through general operating funds (54%), cost recovery (22%), the student computing fee (18%), and network access fee (5%)
- 48% of IT spend through university-wide contracted suppliers; 80% of IT spend is with less than 3% of IT suppliers, compared to the ISM benchmark of 5%
- Enhanced governance processes to manage and monitor IT spend can improve overall efficiency and effectiveness

IT Spend Distribution

Senior Officer	Expenditures
■ Chancellor	52%, \$68.4 M
CSSD	80%, \$54.6 M
CFO	13%, \$9.3 M
All others under Chancellor	7%, \$4.5 M
■ SVC & Provost	21%, \$28.1 M
■ School of Med Division	13%, \$16.8 M
■ SVC Health Sciences	11%, \$14.1 M
■ SVC Business and Operations	3%, \$4.4 M
■ General University	0%, \$0.1 M



IT Talent Findings



Key Findings

- 621 IT FTEs across Pitt: 37% in CSSD, 63% across non-CSSD units
- CSSD has the lowest turnover rate across schools and departments with >10 IT staff
- 95 distinct IT titles in CSSD, 223 outside of CSSD
- Current salary perceived to be significant barrier to hiring/retention
- Lack of standards and requirements around IT training inhibits pace of skills change
- Pitt does not have a strong, shared IT culture resulting in siloed teams

IT Staff Distribution (Top 6 RCs)

RC	Count	Percent of Total
CSSD	229	37%
School of Medicine	82	13%
Graduate School of Public Health	43	7%
Office of CFO	35	6%
School of Medicine Division Administration	31	5%
Office of the Provost	24	4%

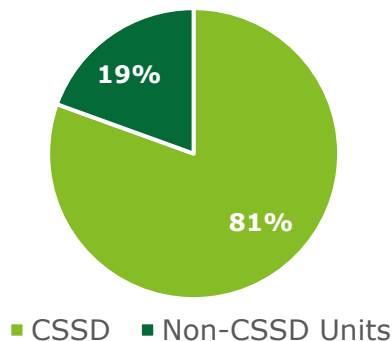
Technology: Infrastructure Findings



Key Findings

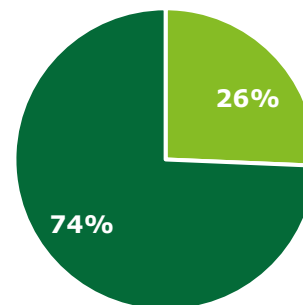
- About 1/3 of reported physical servers reside outside the RIDC data center, posing an increased risk to business and security
- Network uptime of 99%+ is on par with industry leading standards
- Network connectivity at UPMC is limited compared to PittNet resulting in lost staff productivity and a higher risk profile
- No university-wide Configuration Management Database (CMDB) or standard asset management process and tool in place resulting in duplication of assets and security exposures

Server Distribution

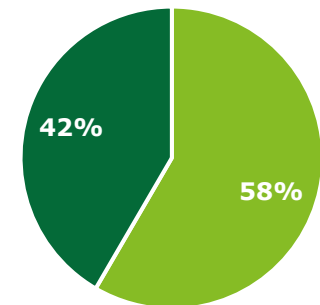


Server Virtualization

CSSD



Non-CSSD Units



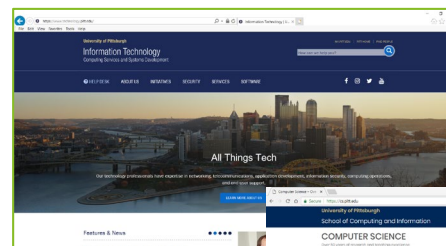
Technology: Applications Findings



Key Findings

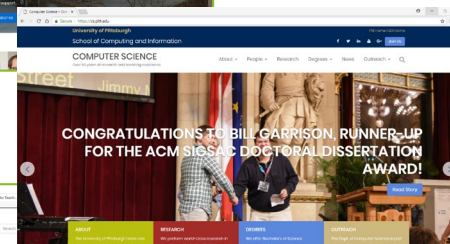
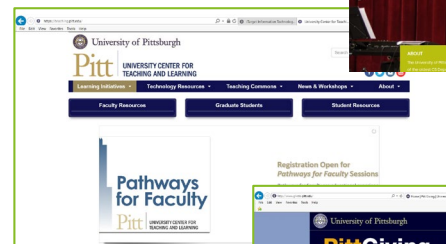
- 680+ application instances; about 2.9M licenses identified across 23 categories* While almost half of these purchases were using university-wide agreements, the majority of interviewees cited opportunities to better coordinate purchases based on improved visibility of under-utilized assets across units
- 95% of reported licensed applications owned by CSSD
- Pitt lacks a common look and feel for its web presence resulting in a fragmented brand being presented to the public

Illustrative Websites



**CSSD
Homepage**

**Department of
Computer Science**



**Center for Teaching
and Learning**

**Office of
Institutional
Advancement**



Technology: Service Management Findings



Key Findings

- At least 19 schools and departments are providing help desk support, using at least 16 different call tracking applications
- Siloed help desks prevent knowledge sharing

Pitt Helpdesk Portals

The image displays three screenshots of help desk portals. The leftmost screenshot shows the FIS Help Desk with a chat interface. The middle screenshot shows the CSSD Help Desk with a 'Submit a Support Ticket' overlay. The rightmost screenshot shows the iTarget Help Desk with a '24/7 Help Desk' overview.

FIS Help Desk

Chat with an FIS Support Analyst.

Submit a Support Ticket

This site is the central clearinghouse for all technical support for a number of web-based applications for the Health Sciences community at the University of Pittsburgh School of Medicine.

[Read More »](#)

CSSD Help Desk

24/7 Help Desk

Overview

The 24/7 Help Desk is the central point of contact for information technology service requests including all systems administered by Computing Services and Systems Development (CSSD). Request support via an online form, email, or a Live Chat feature available on technology.pitt.edu and My Pitt (my.pitt.edu). Alternatively, you may call (412) 624-4337. Requests are processed 24/7 and individual help requests are tracked by a unique case ticket ID number.

Cases (Tickets)

July 26, 2018, CSSD implemented a new enterprise service desk system to track technology help requests, and tracks requests as cases. The previous system tracked requests as tickets. Any follow-up emails sent by the desk system will refer to requests by Case ID# although support staff may still refer to requests as tickets ID number.

help:

If you, 24 hours a day, seven days a week. Use one of the methods below—we're here to answer your unrelated questions.

If a help request online, an email to requests@cssd.edu, or a phone call with an analyst (412) 624-4337 (412) 624-4337.

Secure Remote Network

The Secure Remote Access service provides students, faculty, and staff with the ability to connect to restricted University resources while off campus or using wireless, PiTNet.



Technology: Data and Research Computing Findings



Key Findings: Data

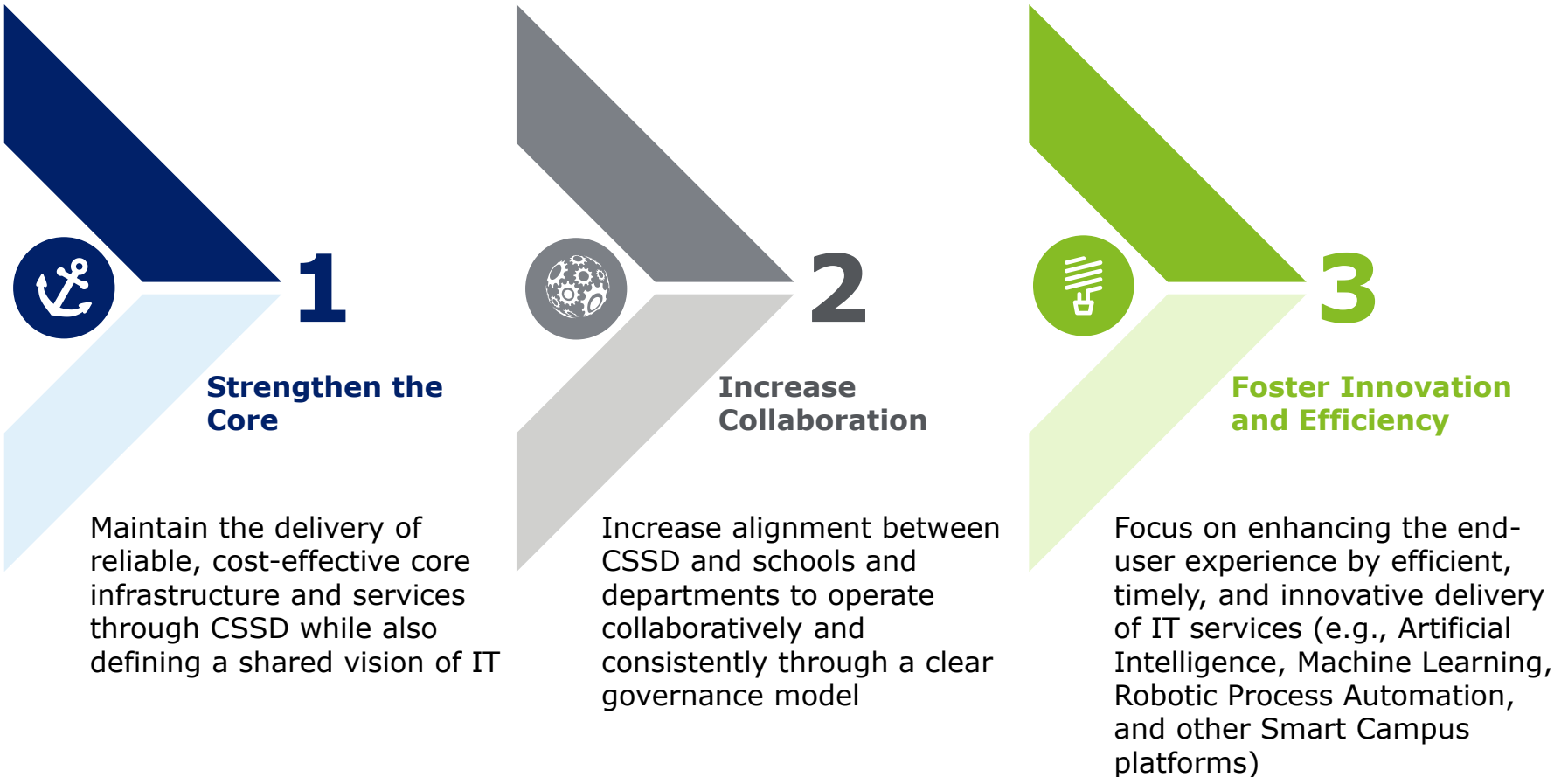
- Limited data policies and standards (e.g., data use or sharing)
- Efforts to establish data governance are underway
- Distributed IT has led to several data warehouse platforms and reporting tools
- Roles and responsibilities for Business Analytics are unclear, resulting in siloed operations and inability for campus to make strategic decisions using data that is dispersed across campus



Key Findings: Research Computing

- VP of Research position has been recently established and has consolidated several siloed research functions
- Coordination between CSSD and CRC cited as improving by numerous stakeholders
- Foundational infrastructure for Research Computing is strong
- A strategic Research Computing roadmap that includes governance, process, technology (e.g., cloud), security, and organizational design needs to be developed to guide any further investments

The Imperative for Change





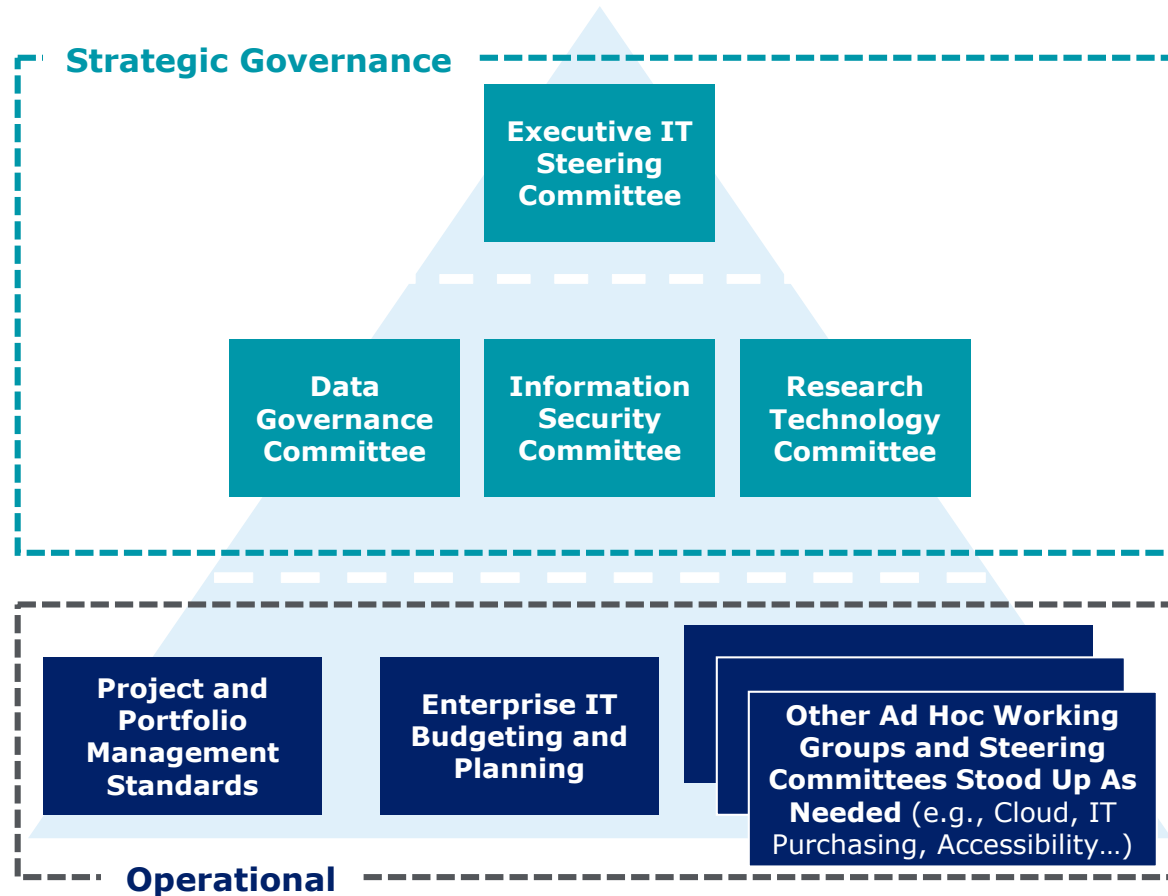
**FUTURE STATE
RECOMMENDATIONS**

1.1 Implement IT Governance



Builds a coordinated model that allows the right people to make business, IT, and financial decisions around IT projects, standards, and priorities.

1.1 Implement IT Governance: Proposed Model



Note: Governance recommendations based on benchmarking of 16 Higher Ed public/private R1 institutions

2.1 Develop an Integrated IT Budget University-wide



Introduces mechanisms to increase collaboration, transparency and efficiency, allowing for resource pooling for shared needs.

2.2 Strengthen IT Purchases Across the University



Strengthens the governance approach towards IT spend to reduce duplicate purchasing within units and increase ability to leverage existing or under-utilized assets across campus units

3.1 Develop Career Paths for IT Staff (in coordination with existing OHR initiative)



Delivers clarity on career progression from new hire to retirement, increasing the ability to retain top talent and share staffing needs.

3.2 Build a Unified IT Training Program



Builds a consistent skill and knowledge base that keeps pace emerging technologies.

3.3 Create a Culture of One IT



Shapes behaviors to improve retention, communication, collaboration, and trust.

Technology

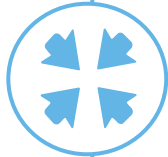
4.1 Establish Long-Term Cloud and Data Center Strategy

Enables best-in-class cloud computing IT services and cloud offerings.



4.2 Implement Enterprise IT Asset Management

Reduces risk of failure, increases accuracy in planned renewal cycles and capacity, and enhances reporting capabilities.



4.3 Collaborate with UPMC to Improve PittNet Access

Improves the experience and data security of dually-appointed faculty.



Technology (continued)

4.4 Consolidate Help Desk Tools



Eliminates redundant help desk products and improves ability to diagnose issues.

4.5 Deploy a Common Brand for all Pitt Websites



A common Pitt web brand increases consistency and improves user experience for customers.

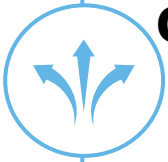
5.1 Enhance Existing Service Catalog to Improve Customer Engagement



Reduces processing time and improves customer satisfaction.

Cross-Functional

6.1 Define Business Analytics Roles and Enhance Capabilities



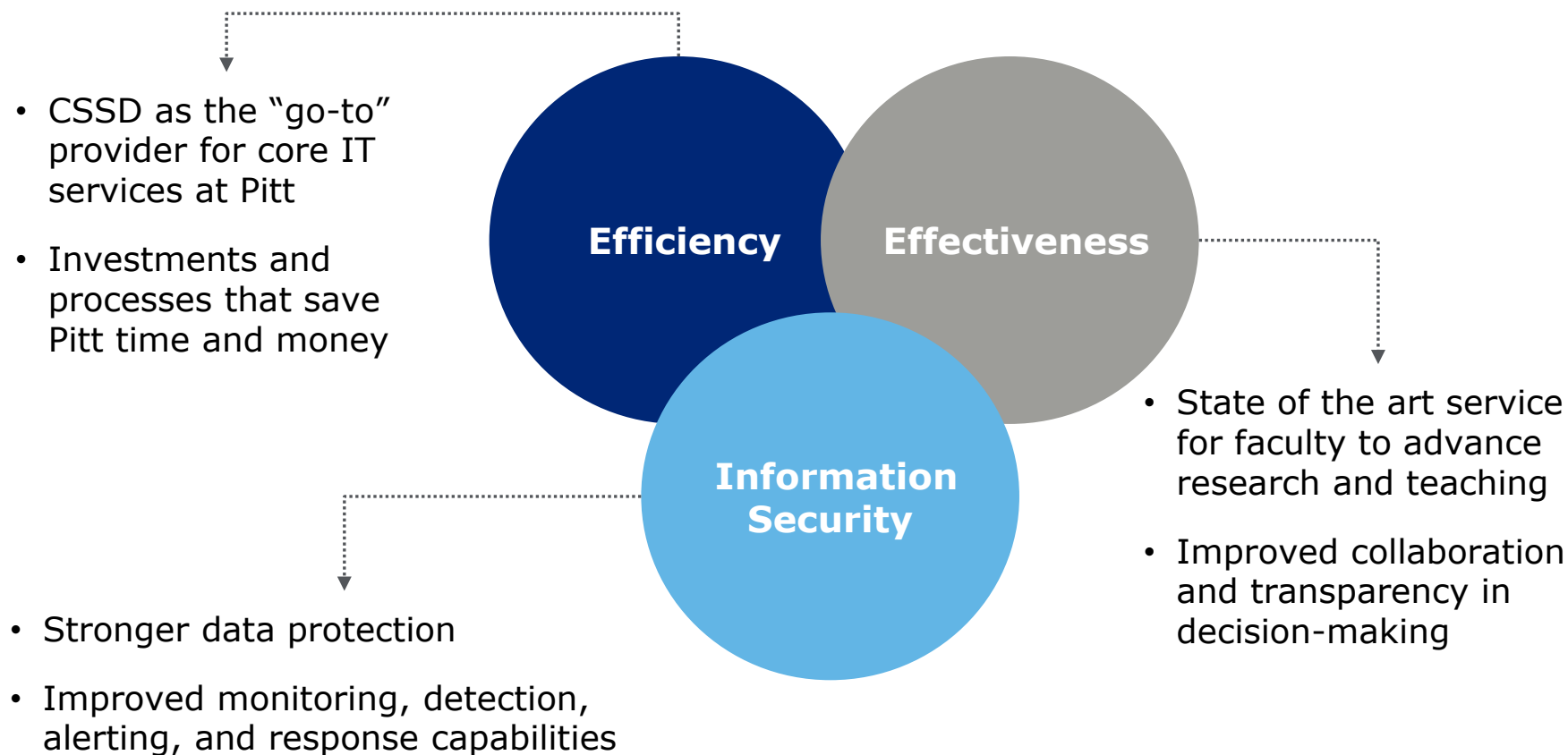
Defines data access and privileges, standards, and capabilities, streamlining decision-making on data issues and fostering improved analytics capabilities.


6.2 Develop Strategic Roadmap to Guide Research Computing Investments



Moves Pitt towards creating a seamless, standardized experience for researchers and facilitates more strategic investments.

IT Transformation Benefits





**PROPOSED
TIMELINE AND
IMPLEMENTATION
CONSIDERATIONS**

High Level Roadmap of Recommendations

Recommendations	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Governance												
1.1 Implement IT Governance												
2. Finance												
2.1 Develop an Integrated IT Budget University-wide												
2.2 Strengthen IT Purchases Across the University												
3. Talent												
3.1 Develop Career Paths for IT Staff												
3.2 Build a Unified IT Training Program												
3.3 Create a Culture of One IT												
4. Technology												
4.1 Establish Long-Term Cloud and Data Center Strategy												
4.2 Implement Enterprise IT Asset Management												
4.3 Collaborate with UPMC to Improve PittNet Access												
4.4 Consolidate Help Desk Tools												
4.5 Deploy a Common Brand for all Pitt Websites												
5. Service Management												
5.2 Enhance Existing Service Catalog to Improve Customer Engagement												
6. Cross-Functional												
6.1 Define Business Analytics Roles and Enhance Capabilities												
6.2 Develop Strategic Roadmap to Guide Research Computing Investments												



Implementation Considerations

Short Term

- Regroup on areas requiring further discussion
- Review opportunities and prioritize
- Identify high-level budget

Program Initiation

- Define:
 - Program and project management
 - Change management where necessary
 - Owners and resources for selected projects
- Initiate detailed design and implementation planning