

# Operationalizing IT @ TTU

*October 16, 2023*

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**SAM SEGRAN**

*CHIEF INFORMATION OFFICER  
AND VICE PRESIDENT FOR IT*





# Strategic --- Planning

# TTU Strategic Priorities

|  |   |
|--|---|
| <b>1. Educate and empower a diverse student body</b>   | <i>Student success will reflect the University's commitment to fostering an environment that promotes inclusive access while attracting committed and high-achieving students.</i>  |
| <b>2. Enable innovative research and creative activities</b>                                 | <i>We will continue to expand research, scholarship and creative activity to discover and advance knowledge, to improve quality and sustainability of life for the citizens of our state, nation and world, and to support technology transfer and other activities that enhance economies.</i> |
| <b>3. Transform lives and communities through strategic outreach and engaged scholarship</b> | <i>We will partner with our local, regional, national, and global communities to stimulate creativity, innovation, and social and economic development ... working together to solve the complex problems facing people and communities.</i>  |

## TTU Strategic Priorities:

1. Educate and empower a diverse student body
2. Enable innovative research and creative activities

## Supporting IT Goals:

- Create a technology-enriched environment that supports teaching, research, and learning, and prepares students for the workplace.
- Deliver information and services in an integrated and secure environment that fosters an open, collaborative, and unifying culture and provides ubiquitous access to needed information.
- Maintain a secure, reliable, and sophisticated information technology infrastructure.
- Manage IT as a strategic resource.



**Strategic-Goals**

## TTU Strategic Priorities:

**3. Transform lives and communities through strategic outreach and engaged scholarship**

## Supporting IT Goals:

- Facilitate outreach to campus and external communities through relationships, processes, and IT support and tools.



**Strategic-Goals**



# Groups That Impact IT Operations

**Students,  
Faculty,  
Staff,  
Administration**

**CIO Council**

**Network Site  
Coordinators**

***Groups That  
Impact IT  
Operations -  
Texas Tech***

**IT Advisory  
Committee**

**Web Advisory  
Committee**

**IT Security  
Committee**

# CIO Council

- Shared Services
  - TOSM
  - IS
  - Communication Services
- Federation
- Joint Training
- State Legislative Topics
- ITCHE
- Emergency Web Hosting
- Strategic Sourcing
- LEARN
- Gartner



Keith Halman, TTUS



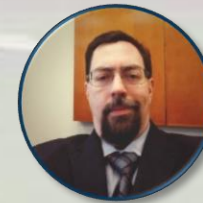
Doug Fox, ASU



Vince Fell, TTUHSC



Jerry Rodriguez,  
TTUHSC – El Paso



Paul Chappell,  
Midwestern State



Sam Segran, TTU



**Legislature**

**Cybersecurity  
Council**

**Groups That Impact IT Operations - Texas**

**THECB**

**TASSCC**

**DIR**

**ITCHE**

**LBB**

**State Auditor's Office**

# Groups That Impact IT Operations - Texas

- ❖ Laws and regulations:
  - ❖ Texas Administrative Code
  - ❖ Texas Education Code
  - ❖ Texas Business & Commerce Code
  - ❖ Texas Government Code
- ❖ Reporting
- ❖ Initiatives

# Groups That Impact IT Operations

EDUCAUSE

Strategic  
Vendors/  
Partners



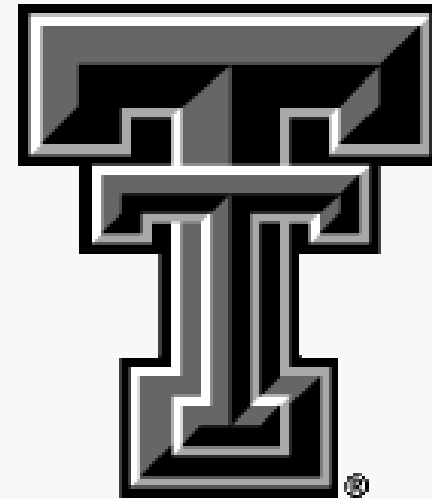
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INTERNET®



LEARN  
LONESTAR EDUCATION AND RESEARCH NETWORK

SACS COC™



Others

# 2023 Top 10 IT Issues: Foundation Models

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The EDUCAUSE 2023 Top 10 IT Issues help describe the foundation models that colleges and universities will develop next year and beyond, acting on what was learned in the pandemic and framed by the three building blocks of leadership, data, and work and learning.

# Leading with Wisdom

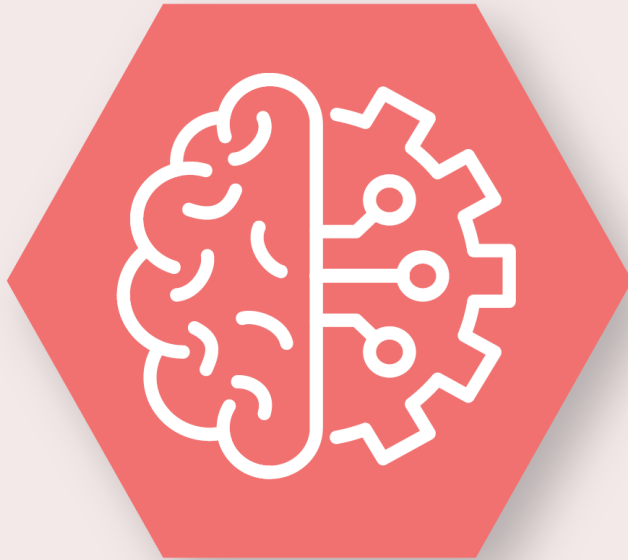
Technology leaders need wisdom in order to inspire, lead, and manage their institution, IT organization, and workforce.



- 1 A Seat at the Table**  
Ensuring IT leadership is a full partner in institutional strategic planning
- 3 Evolve, Adapt, or Lose Talent**  
Creating a workplace that allows for and supports movement up, down, and sideways to accommodate shifts in personal and professional goals and to foster healthier work/life balance
- 5 Enriching the Leadership Playbook**  
Leading with humility and candor to engage, empower, and retain the IT workforce

# The Ultra-Intelligent Institution

Data and analytics can provide institutions with intelligence offered through ongoing, useful, and increasingly sophisticated insights.



## 2 Privacy and Cybersecurity 101

Embedding privacy and cybersecurity education and awareness in the curriculum and in the workplace

## 4 Smooth Sailing for the Student Experience

Using technology, data, insight, and agility to create a frictionless student experience

## 6 Expanding Enrollments and the Bottom Line

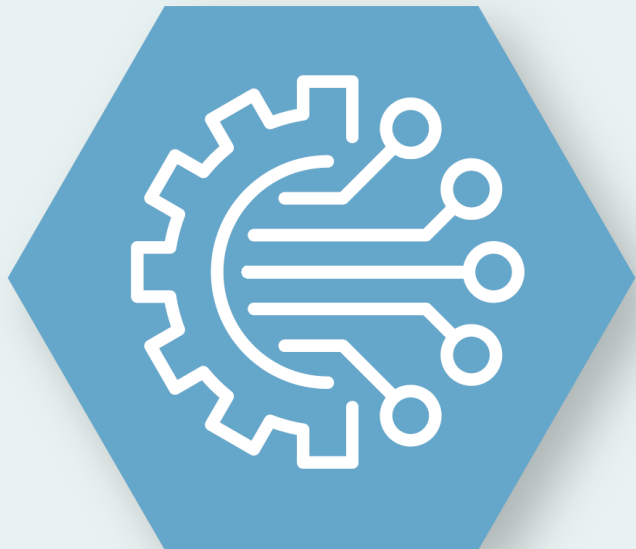
Focusing data and analytics initiatives on identifying academic programs with high potential for recruitment ROI

## 7 Moving from Data Insight to Data Action

Converting data analytics into action plans to power institutional performance, enhance operational efficiency, and improve student success

# Everything Is Anywhere

With the institution no longer confined to the physical campus, leaders must find new strategies for supporting technology everywhere and anywhere.



## 8 A New Era of IT Support

Updating IT services to support remote and hybrid work

## 9 Online, In Person, or Hybrid? Yes.

Developing a learning-first, technology-enabled learning strategy

## 10 SaaS, ERP, and CRM: An Alphabet Soup of Opportunity

Managing cost, risk, and value of investments in new ERP solutions

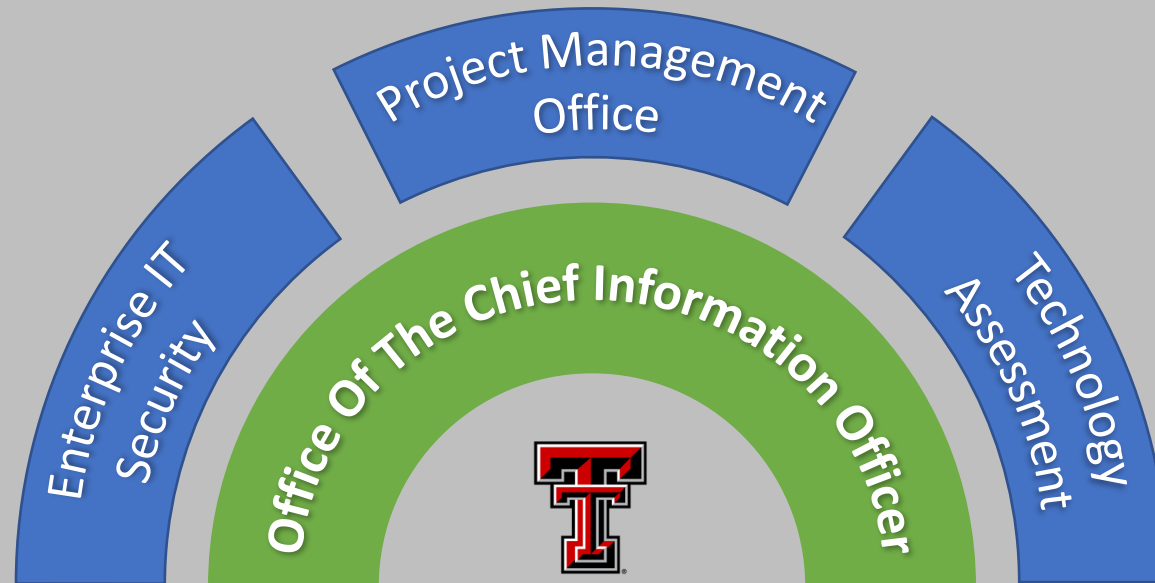


# IT @ TTU

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# Major IT Operational Areas And Skills



Information Technology Division™

- ❖ Application Development & Support
- ❖ High Performance Computing
- ❖ Technology Support:
  - ❖ Services
  - ❖ Enterprise System Administration
- ❖ IT Help Central
- ❖ Telecommunications:
  - ❖ Enterprise Communication Services
  - ❖ Enterprise Network Services



## 4 General Modes For Delivering IT Services:

- **IT Division-Provided Services** – eRaider, TTUnet, Computer Labs, Help Desk, HPC, Shortcourses, Educational Events, etc.
- **IT Division/Partner-Procured/Brokered Services** – O365, Blackboard, OmniUpdate, Adobe, Skillsoft, Confluence Wiki, WEPA, etc.
- **IT Division/Partner Collaborations** – Elsevier Pure and SciVal, RDMS, RRRR, Executive Dashboards, Marching Order, Salesforce, etc.
- **IT-Supported Partner Services** – Teamworks, Vehicle Identification System, Digital Measures, Ad Astra, TracDat, etc.

# A Selection Of IT Services & Support

| Services  | Instructional Support | Research Support | General Support | Infrastructure |
|---|-----------------------|------------------|-----------------|----------------|
| 3D Printing   | X                     | X                |                 |                |
| Adobe Creative Suite  | X                     | X                | X               |                |
| askIT (ITHC Self-Help Portal)   |                       |                  | X               |                |
| AutoCAD/AutoDesk  | X                     | X                | X               |                |
| Blackboard – LMS (TTU Higher Education, TTU K-12, and Continuing Education) | X                     |                  |                 |                |
| Campus Network Infrastructure (wired and wireless)                          | X                     | X                | X               | X              |
| ChemDraw  | X                     |                  |                 |                |
| Classroom Engagement Platform (Top Hat)                                     | X                     |                  |                 |                |
| Classroom Technology Support  | X                     |                  |                 | X              |
| Cybersecurity Awareness Training  | X                     | X                | X               |                |

# A Selection Of IT Services & Support

| Services                                     | Instructional Support | Research Support | General Support | Infrastructure |
|--|-----------------------|------------------|-----------------|----------------|
| Data Encryption                              |                       | X                | X               | X              |
| Diversity Analytics and Dashboard            |                       |                  | X               |                |
| Electronic Voting System (ScytI)             |                       |                  | X               |                |
| Emergency Notification System (Blackboard)   |                       |                  | X               |                |
| eRaider Account Management System (eRAMS)    | X                     | X                | X               | X              |
| Esri GIS                                     | X                     | X                |                 |                |
| Faculty Dashboard (including research & DEI) | X                     | X                | X               | X              |
| Free & Discounted SW/HW                      | X                     |                  | X               |                |
| Generator, UPS, etc.                         |                       | X                |                 | X              |
| High Performance Computing Clusters          | X                     | X                |                 | X              |

# A Selection Of IT Services & Support

| Services  | Instructional Support | Research Support | General Support | Infrastructure |
|---|-----------------------|------------------|-----------------|----------------|
| HIPAA Enclave (secure storage for patient/health information) |                       | X                | X               | X              |
| HPC Storage   | X                     | X                |                 | X              |
| Loaner Devices For International Travel                       | X                     | X                | X               |                |
| Microsoft Azure Services                                      |                       | X                | X               | X              |
| Microsoft Defender Endpoint Protection                        |                       |                  | X               |                |
| O365 Services   | X                     | X                | X               | X              |
| OmniUpdate - CMS  |                       |                  | X               |                |
| Public Computing Facilities - Student                         | X                     |                  | X               | X              |
| Red Raider Research Registry                                  |                       | X                |                 |                |
| REDCap - PHI Data   |                       | X                |                 |                |

# A Selection Of IT Services & Support

| Services   | Instructional Support | Research Support | General Support | Infrastructure |
|--|-----------------------|------------------|-----------------|----------------|
| REDCap - PHI Data  |                       | X                |                 |                |
| Rent College Pads  |                       |                  | X               |                |
| Research Metrics & Analytics (Dashboards)                                      |                       | X                | X               |                |
| Research Projects Requiring Special Security Controls - DoD, DoE, DFARS, ITAR  |                       | X                |                 | X              |
| Skype for Business/Teams   | X                     | X                | X               | X              |
| SPSS/SAS   | X                     | X                |                 |                |
| Salesforce Engagement Hub  | X                     |                  | X               | X              |
| Consult for IRB (data security at collection, transfer, analysis, and storage) |                       | X                |                 |                |
| SurveyMonkey   | X                     | X                |                 |                |
| Technology Assessment  | X                     | X                | X               |                |

# A Selection Of IT Services & Support

| Services                                       | Instructional Support | Research Support | General Support | Infrastructure |
|--|-----------------------|------------------|-----------------|----------------|
| Technology Assessment                          | X                     | X                | X               |                |
| TIEHH Coronavirus Lab                          |                       | X                | X               |                |
| Training - Online & In-Person                  | X                     | X                | X               |                |
| Videoconferencing (Microsoft Teams, Zoom, SfB) | X                     | X                | X               | X              |
| Walk Up & Residence Hall Support for Students  |                       |                  | X               |                |
| Web Accessibility Compliance (Silktide)        |                       |                  | X               | X              |
| WEPA (Cloud Printing) - Touchless              | X                     |                  | X               | X              |

| FY 2023 - 2024 Major IT Projects<br>(sampling)                       | Partner   | Beneficiary          | TTU Strategic<br>Priorities Alignment |   |   |
|--|---|----------------------|---------------------------------------|---|---|
|  |   |                      | 1                                     | 2 | 3 |
| Accessibility Scanning for TTU Applications & Authenticated Websites | Colleges, Divisions, TOSM   | TTU website visitors | X                                     |   | X |
| Computer Lab Management Software Evaluation                          | External to TTU   | TTU IT, Students     | X                                     |   |   |
| Cybersecurity Awareness Training – IT Staff                          | HR  | TTU                  | X                                     | X | X |
| Digital Identity Assessment  | TTUSIS, HR, EM, ID Office, Grad School, OI, Library (other depts who create eRaider IDs or resolve/verify identities) | TTU                  | X                                     | X | X |
| Hispanic Serving Institution (HSI) Dashboard                         | Diversity, Equity, and Inclusion, Student Service Units Across Campus, HR, TLPDC, EM                                  | TTU                  | X                                     |   | X |
| Raider Data Exchange   | Leadership in all areas   | TTU Community        | X                                     | X | X |





# Partnerships & Collaborations

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# Collaboration With Other Areas

- **Computing Lab Support (IT Division-funded operations)**
  - Graduate Center
  - Kinesiology & Sport Management (KSM)
  - SUB
  - MVP
  - MCOM
  - Division of Diversity, Equity, & Inclusion
  - Residence Halls

# Collaboration With Other Areas

- **Dedicated Desktop & Other Support (funding provided by areas below)**
  - Psychological Sciences
  - KSM
  - Worldwide eLearning & TTU K-12
  - OIA
  - Executive Support: TTUSA
  - Executive Support: TTU Advancement
  - Environmental Health & Safety

# Efficiencies

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# STRATEGIES FOR EFFICIENCIES (ACROSS TTU)

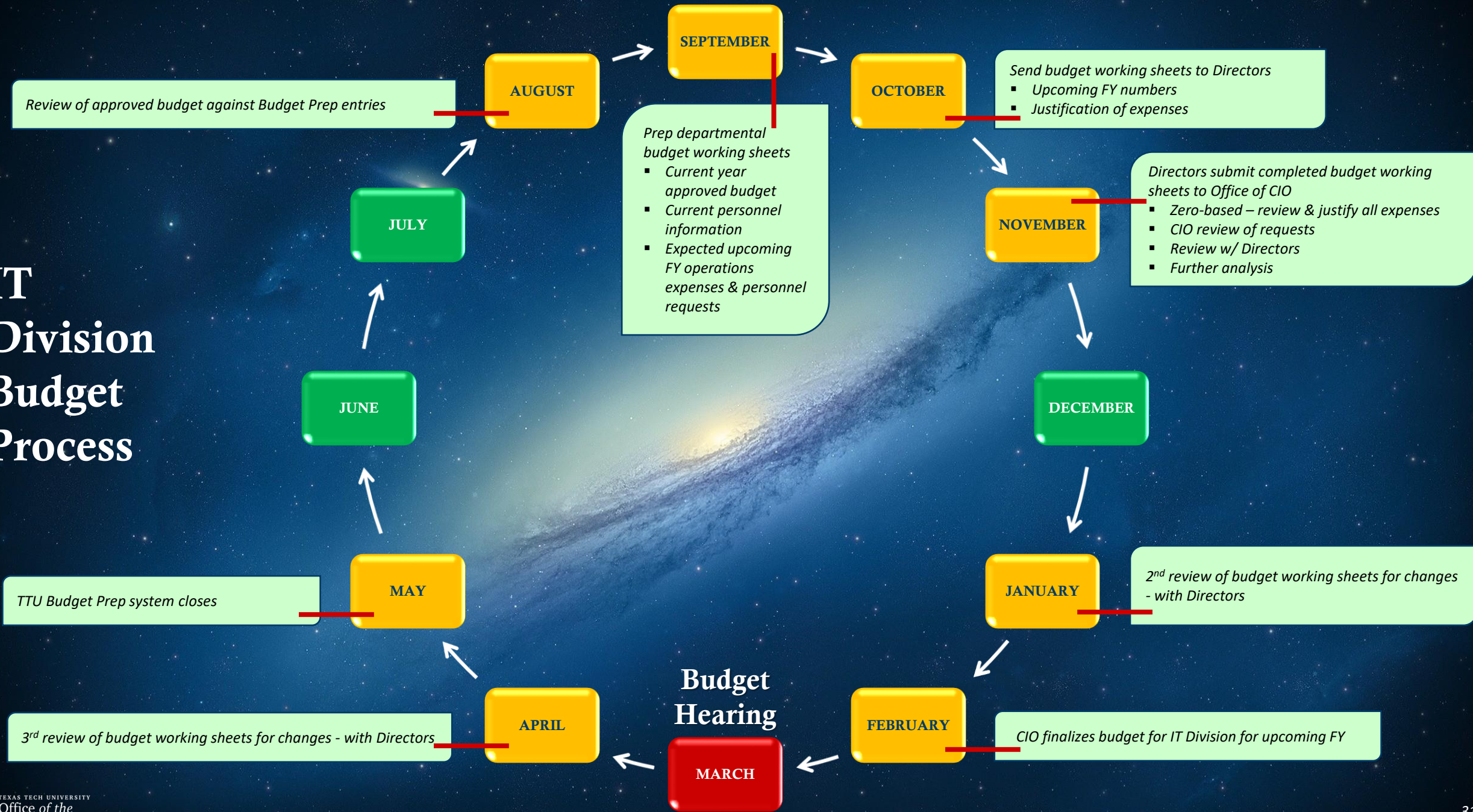
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- Vendor Sourcing
- Standardizations
- Consolidations (Site Licenses, ...)
- HPC Community Cluster
- Cloud Strategy
- Innovative Methods (e.g., LEARN)
- IT Procurement Review
- IT Contract/Agreement Review
- In addition to efficiencies, these strategies also contribute to:
  - Lowering our risk
  - Meeting compliance for regulated data
  - Integration with existing infrastructure & systems
  - Optimal solution
  - Etc.

# Budget Management

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# IT Division Budget Process



- **Goal: Efficient & Effective**
- **Eliminate “Use It or Lose It” mindset**
- **Budget @ Departmental Level**
  - Salary
  - M&O
  - Zero-base
- **Budget @ Divisional Level**
  - Large purchases
  - Some major recurring expenses
  - Capital & life cycle



## ■ **Staff Training & Skills**

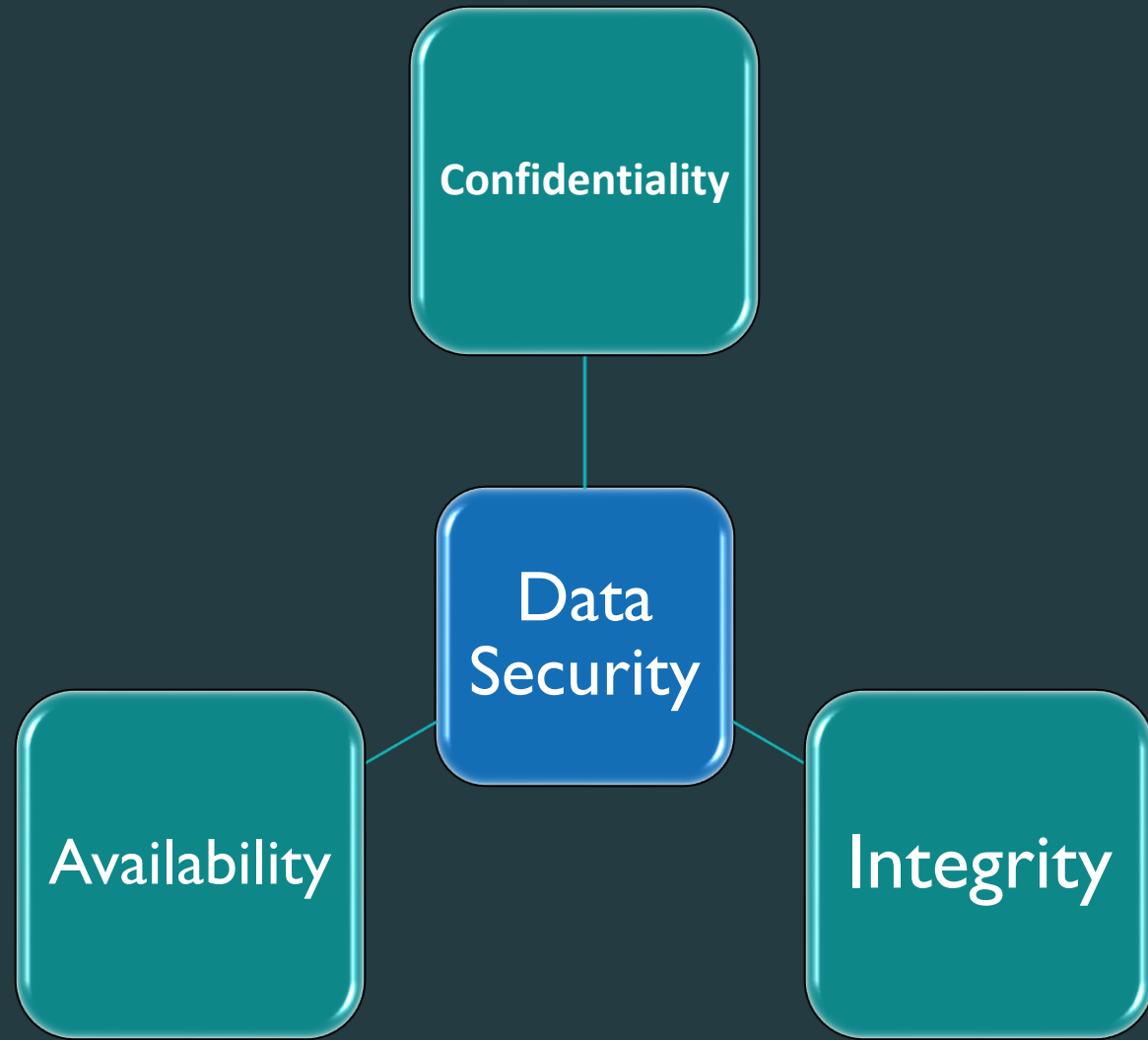
- On-Site Training
- Online Training
- Off-Site Training & Conferences
  - Trip reports submitted to CIO Office upon return

## ■ **Vacant Positions**

- Reviewed across IT Division as each position is vacated

A digital graphic with a dark blue background. On the left, a globe is depicted with a network of glowing blue lines and dots, representing global connectivity. To the right, there are glowing blue circuit board traces and nodes, symbolizing technology and data flow. The word "Cybersecurity" is written in a large, white, serif font across the center.

# Cybersecurity



**CIA Triad**

# Continuous Improvement Strategy and Looking Ahead

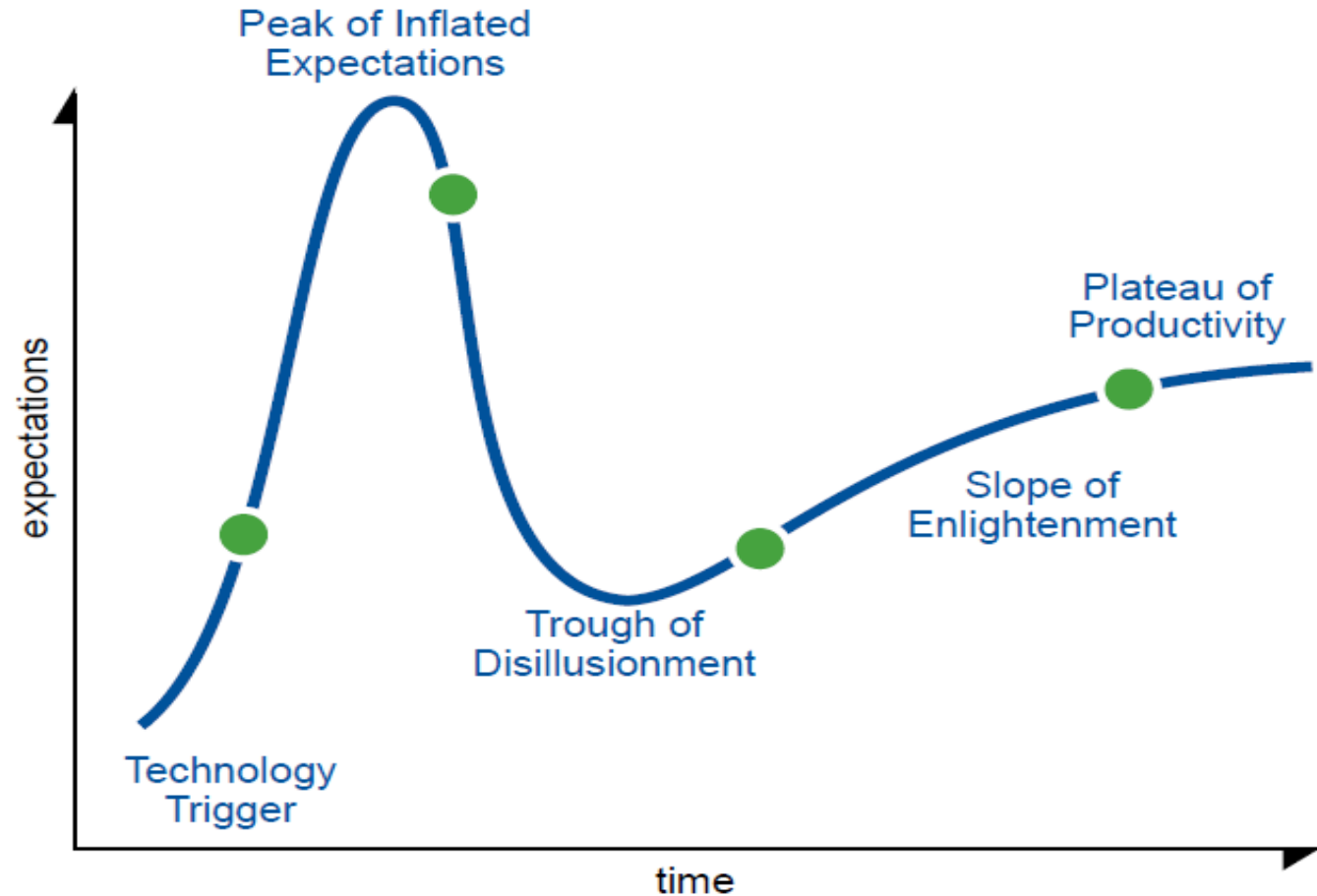


## LET'S TALK ABOUT

## HYPE CYCLES.

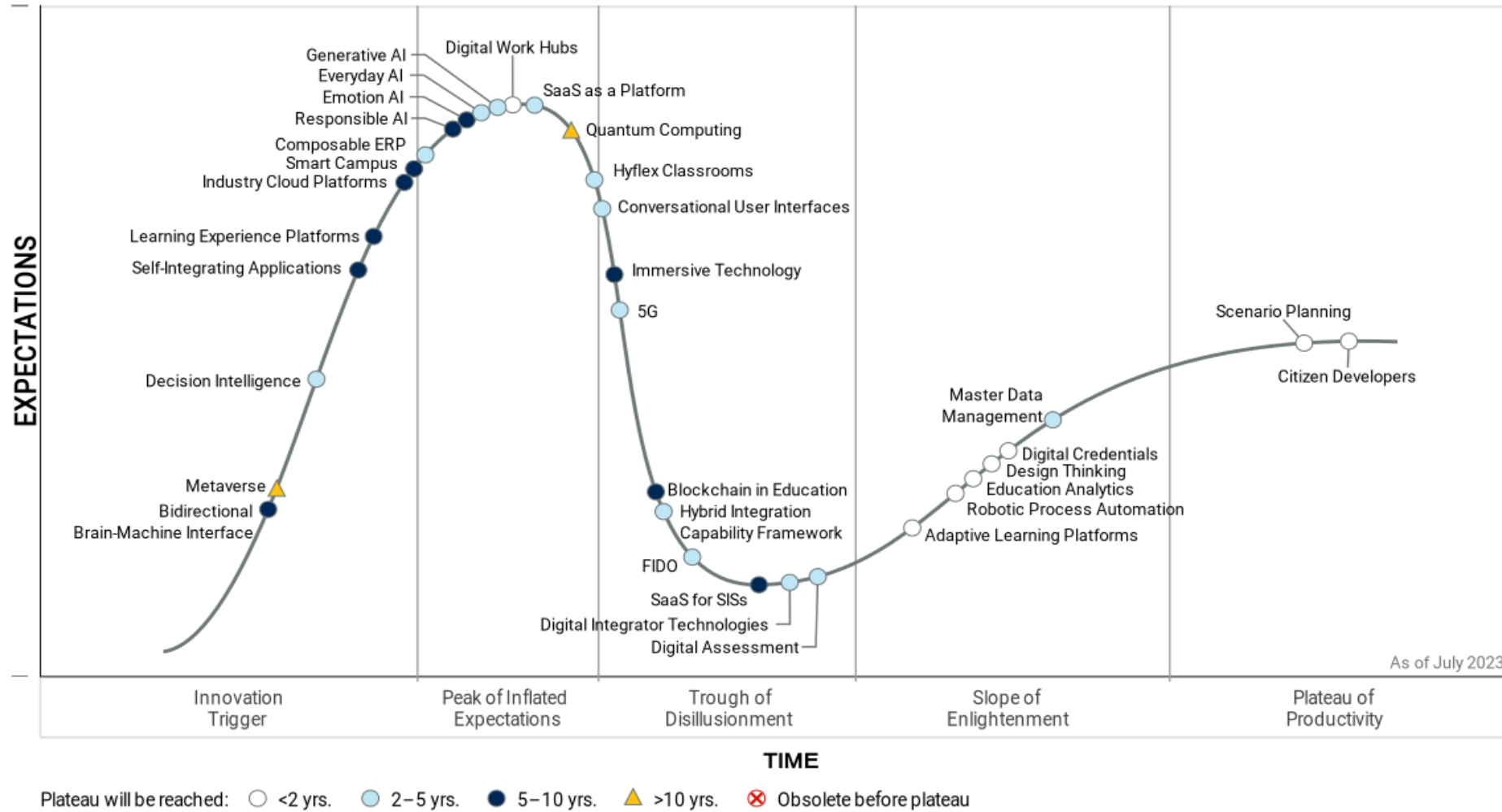
Add and/or change the position of your dots according to your institution's perception of hype and maturity, in the top 10 deck.

Be sure to make a case for the position to the group.



# An Example Of A Fully Developed Hype Cycle – HIGHER EDUCATION

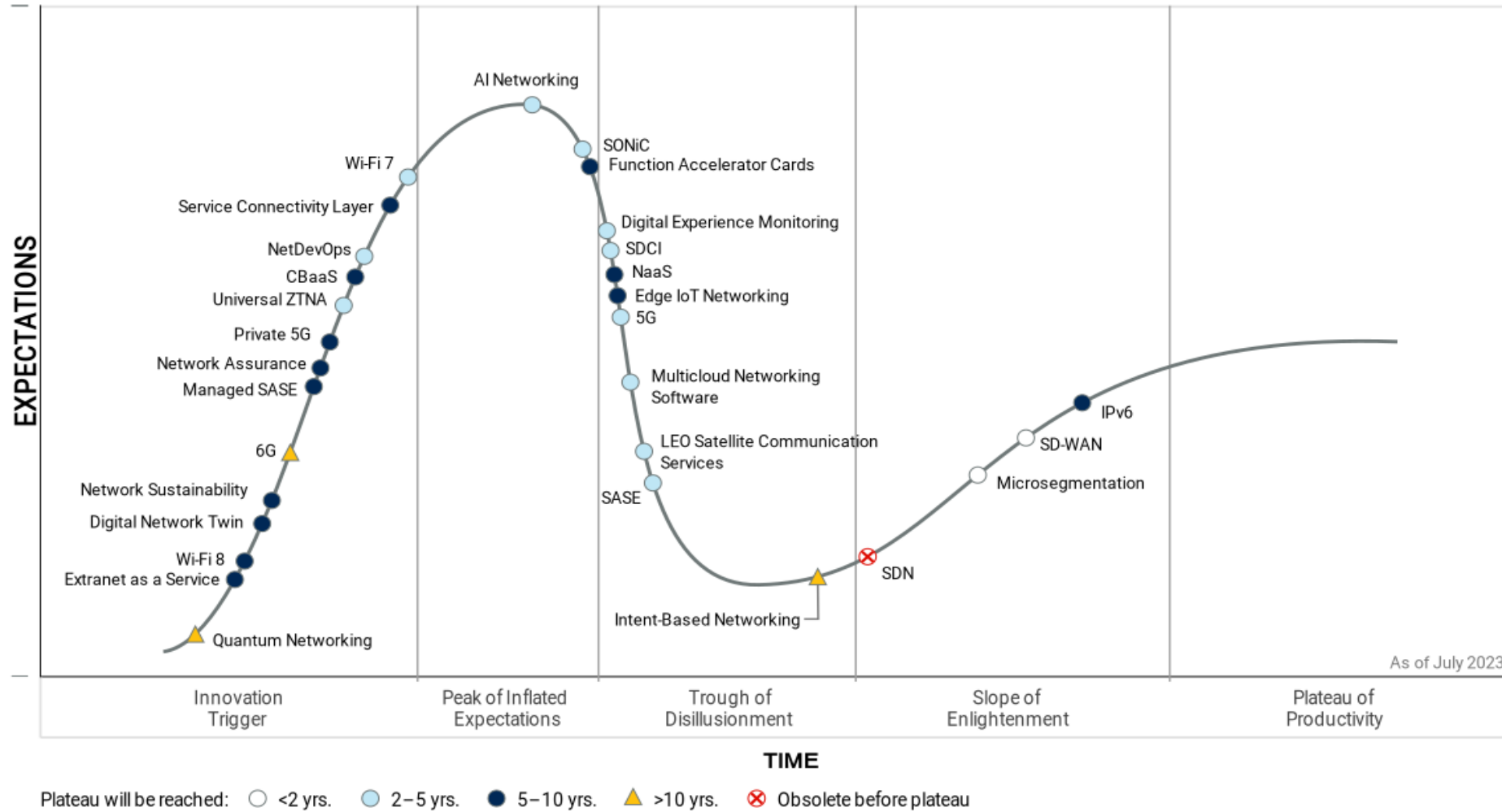
## Hype Cycle for Higher Education, 2023



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# An Example Of A Fully Developed Hype Cycle – ENTERPRISE NETWORKING

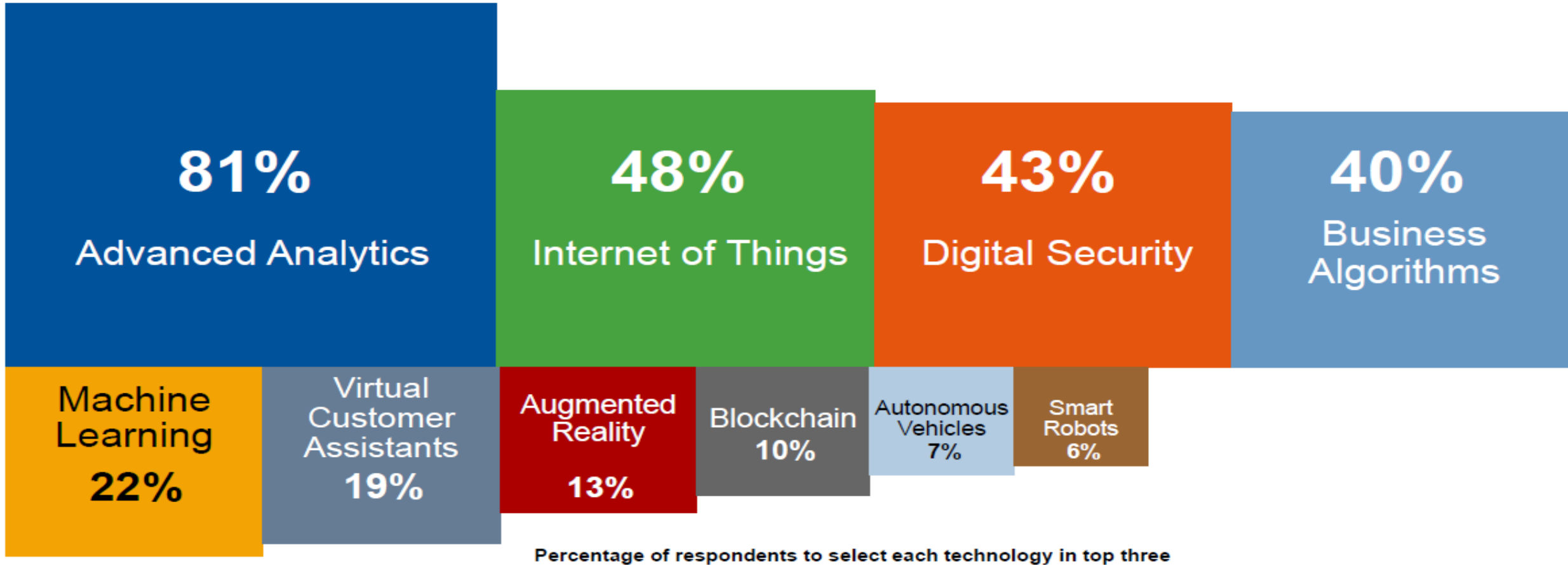
## Hype Cycle for Enterprise Networking, 2023



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## Key Technologies Will Deliver Change

Q. In your opinion, which three of these technologies have the most potential to change your organization over the next five years?





# Gartner's Top Strategic Technology Trends for 2023

## Optimize

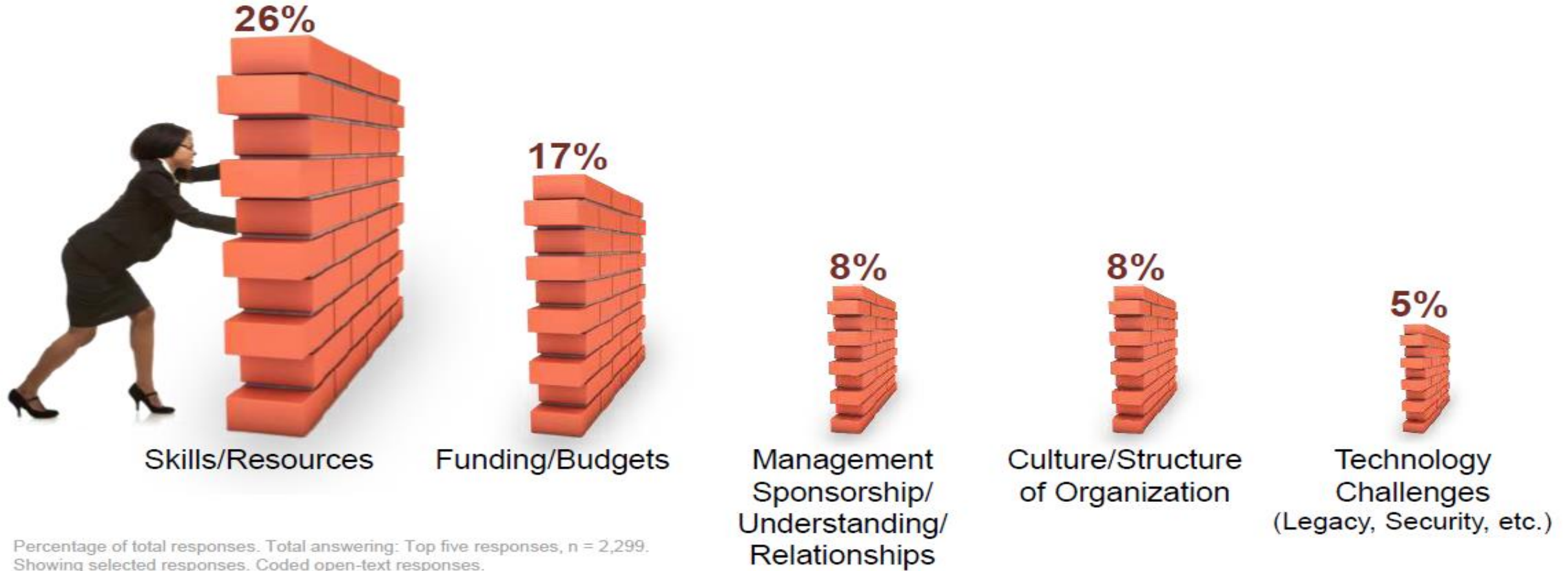
## Scale

## Pioneer

|  |   |   |
|--|---|---|
|  Digital Immune System    |  Industry Cloud Platforms   |  Superapps   |
|  Applied Observability    |  Platform Engineering       |  Adaptive AI |
|  AI TRiSM                 |  Wireless-Value Realization |  Metaverse   |
|  Sustainable Technology |   |   |

## The Biggest Barrier to Success Is Skills

Q: What is your biggest barrier to achieving your objectives in your role?

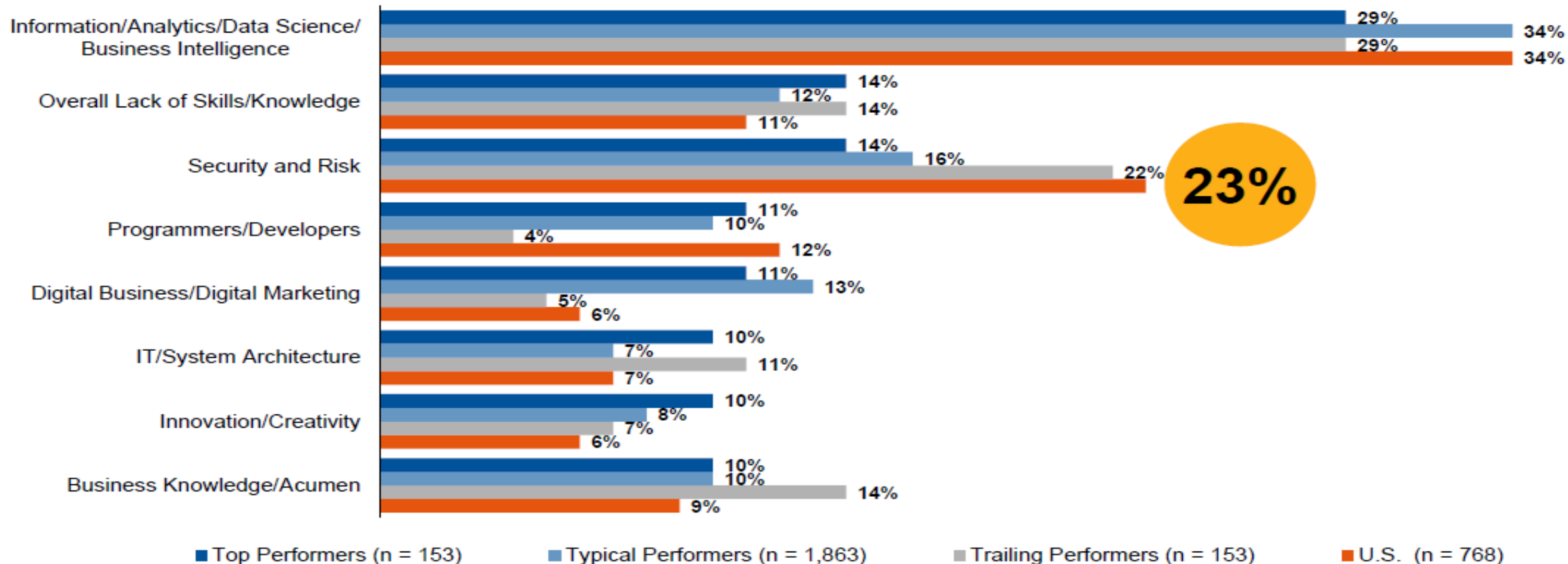


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## Analytics Skills Are Universally in Short Supply

Q. What would you say is the biggest talent gap (i.e., lack of skills) related to information, technology or digital business your government or public entity/business unit/company is trying to fill at the moment?



Percentage of respondents. Showing selected responses. Up to three responses allowed.

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# Questions?

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*Thank You!*

