



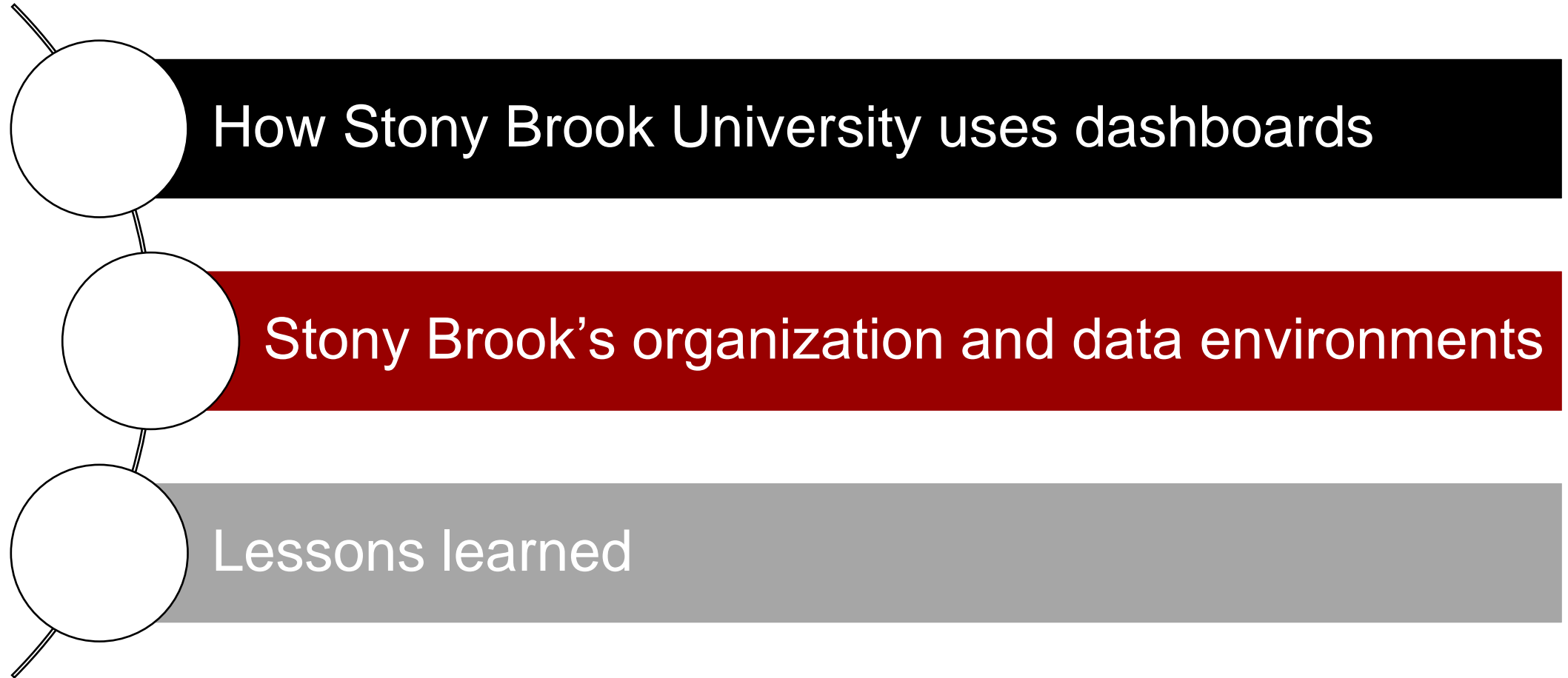
Stony Brook University

LEVERAGING DATA ANALYTICS TO IMPROVE UNIVERSITY OPERATIONS

LEADERSHIP DASHBOARD PROJECT KICKOFF EVENT
CARNEGIE MELLON UNIVERSITY
JULY 26, 2022

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Assoc. Vice President for Institutional Research, Planning & Effectiveness
Stony Brook University

Overview



How Stony Brook uses dashboards to improve university operations

Stony Brook University Profile

26,608

Fall 2021 headcount enrollment

1340

Avg SAT 2021 Incoming Freshmen (test optional)

94

Avg HS GPA 2021 Incoming Freshmen

68% **32%**

Undergrad Graduate

1/3

Receive Pell Grants

33% **20%**

White URM

15,365

Fall 2021 employees including hospital

2,866

Fall 2021 Faculty full-time & part-time

#93

U.S. News & World Report Rank 2022

3.8 Billion

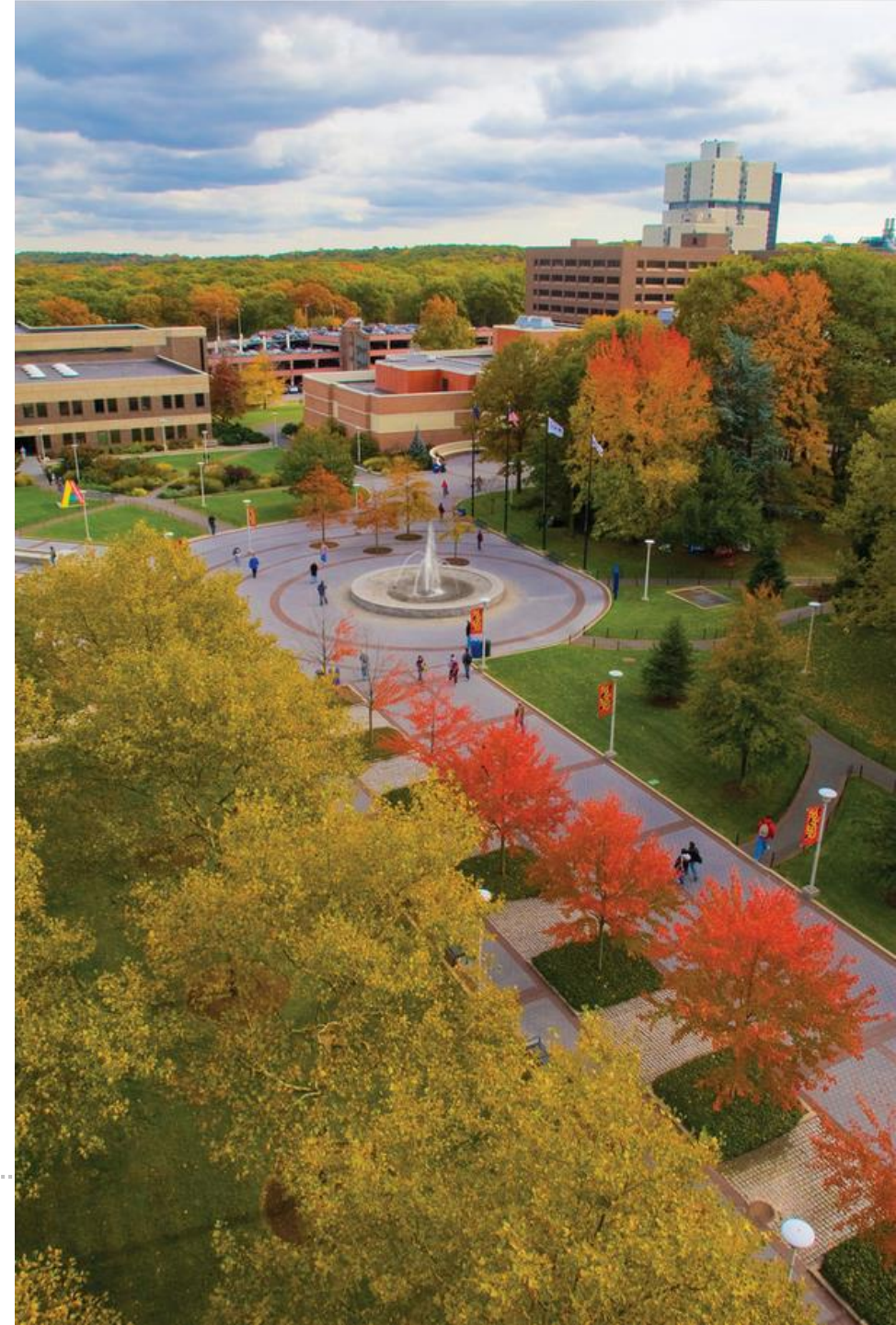
USD Annual Budget

1957

Founded

2001

Joined AAU



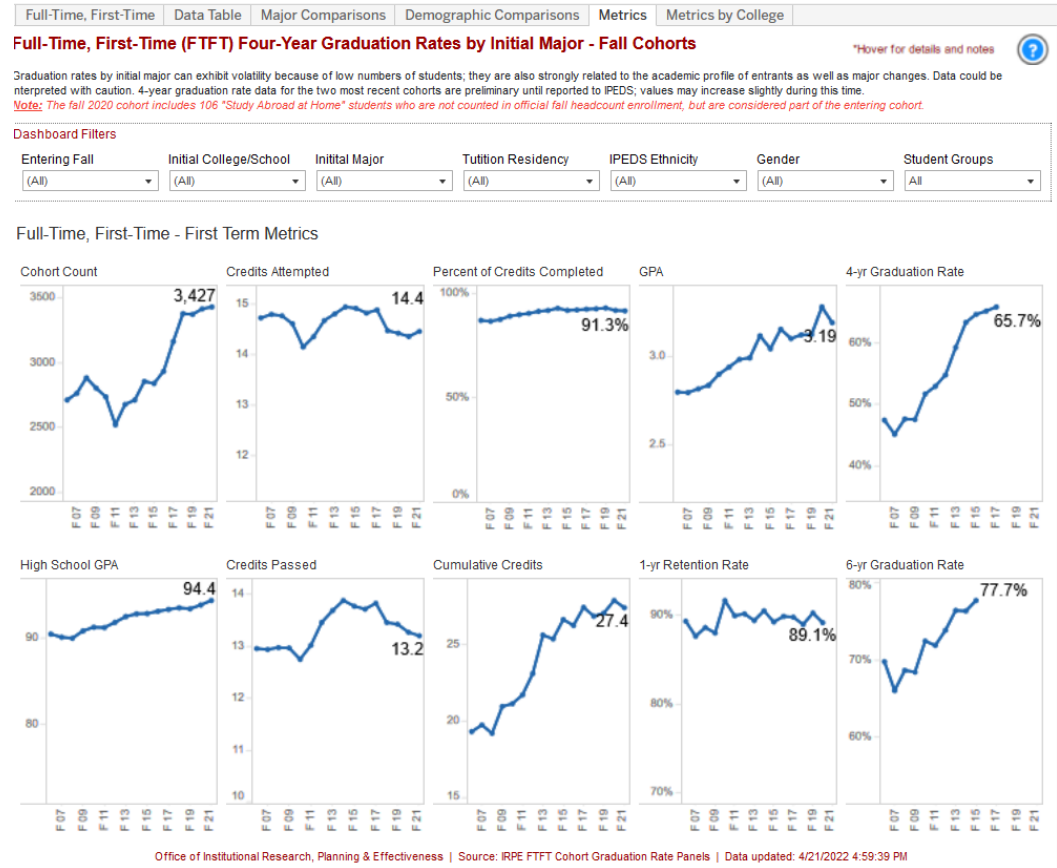
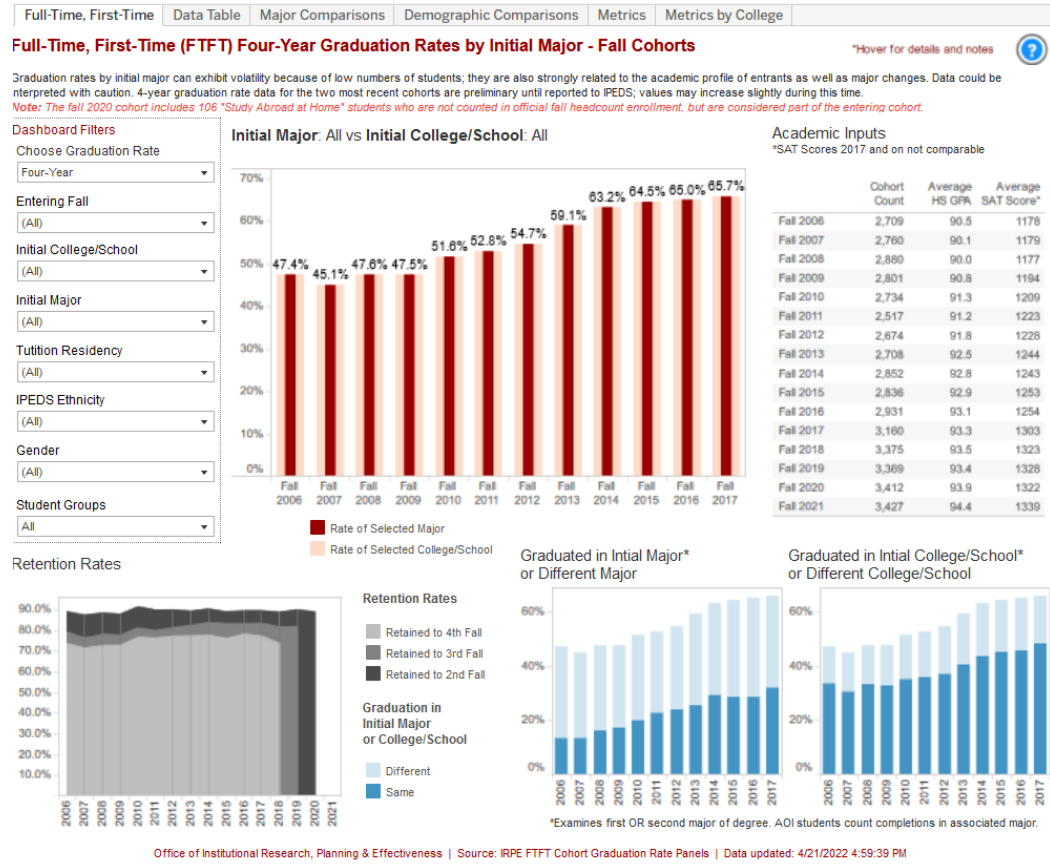
Disclaimer ...

THE FOLLOWING DASHBOARDS **ARE ASSOCIATED** WITH OPERATIONAL IMPROVEMENTS.
THE DASHBOARDS DID NOT CAUSE THE IMPROVEMENTS
BUT RATHER PEOPLE MADE THE IMPROVEMENTS.

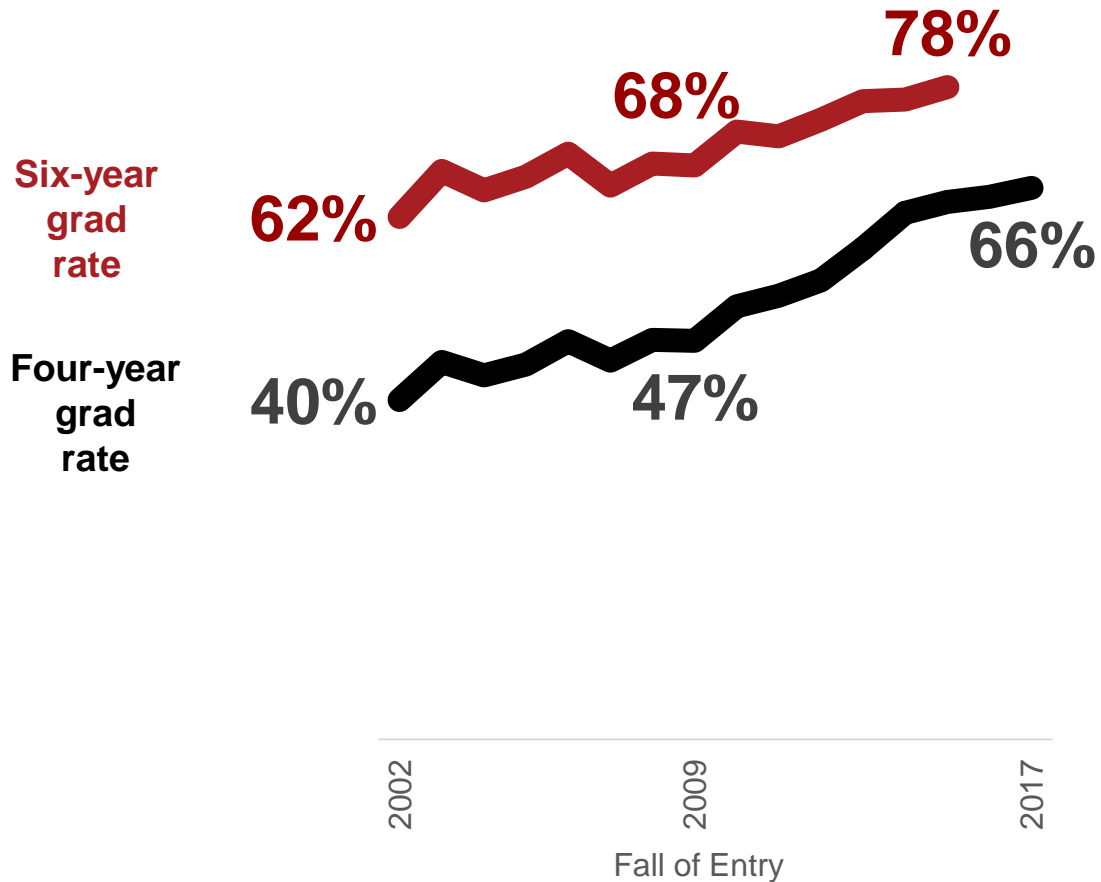
INFORMATION FROM AN ANALYTICS SYSTEM
ENABLES CHANGE BUT REQUIRES ACTION

Enables change	Informative depictions of data. Some facts may have been altered
E	
Not appropriate for all audiences	

Selected Undergraduate Success Dashboards



First-time, full-time 4-year graduation rates have increased 18 percentage points in the last seven years

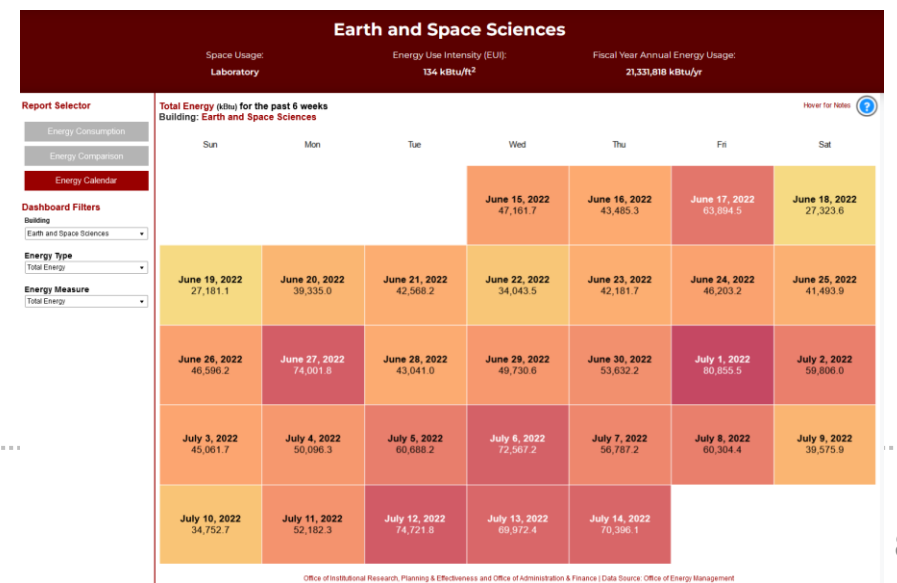
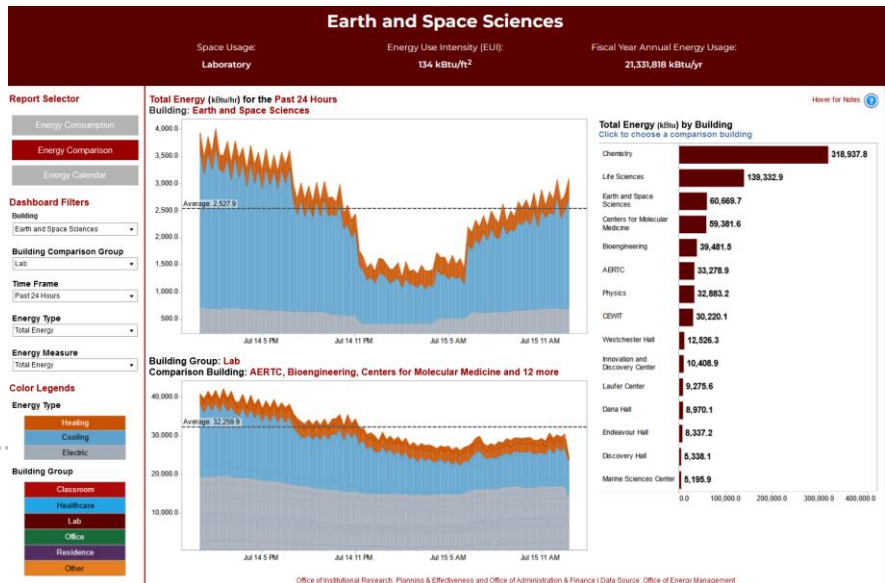
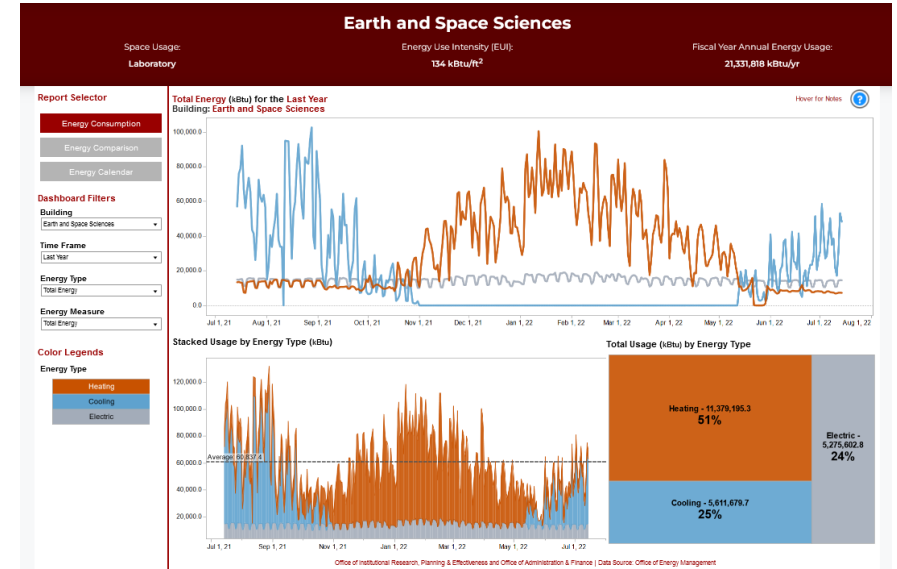


Over 8 years

18 ↑
percentage point increase
in 4-yr grad rate

10 ↑
percentage point increase
in 6-yr grad rate

Publicly Available Campus Energy Consumption Dashboards



Energy consumption and carbon emissions have decreased; new energy savings identified

20.84%
reduction in energy use
intensity

Target = 23% by 2030

36.81%
reduction in Scope 1 and
Scope 2 greenhouse gas
emissions.

Target = 40% by 2030

HVAC optimization across 35 buildings over 2021-22 Thanksgiving, and late Dec./Jan. holiday weekends resulted in a savings of 158,000 kWh in electrical energy and 2,938 MMBtu in thermal energy

Holiday Savings

The energy savings achieved by SBU are equivalent to:

CO₂ emissions from

18.9

 homes' electricity use for one year

CO₂ emissions from

14,246,920

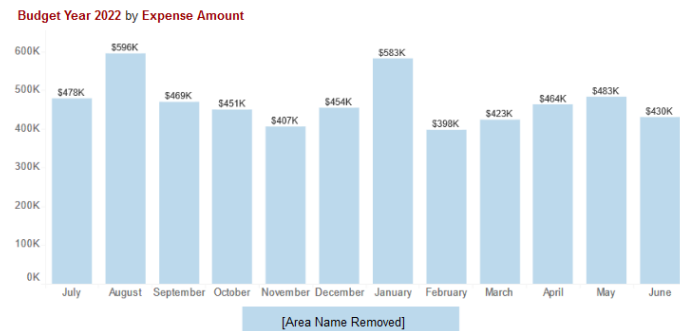
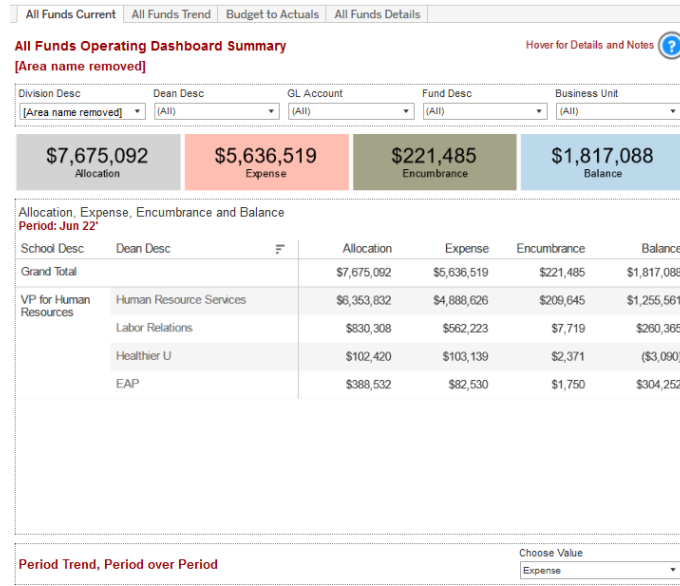
 number of smartphones charged

Greenhouse Gas emissions from

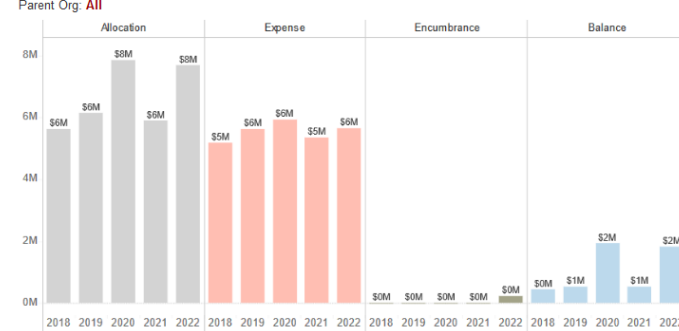
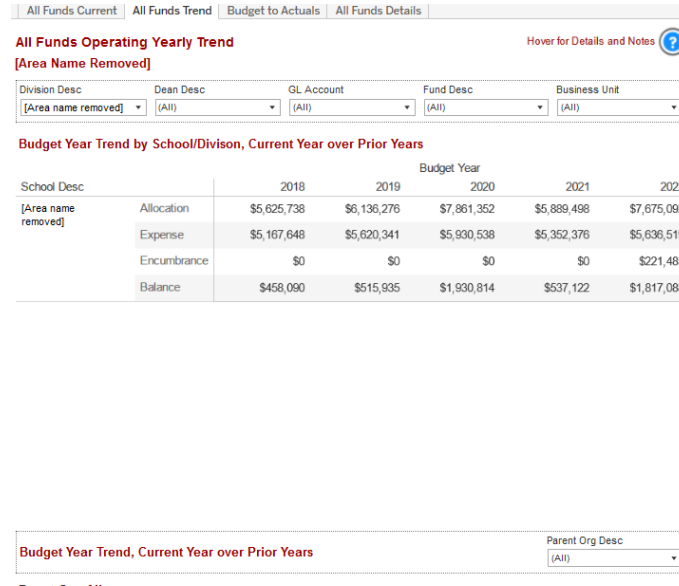
271,202

 Miles driven by an average passenger vehicle

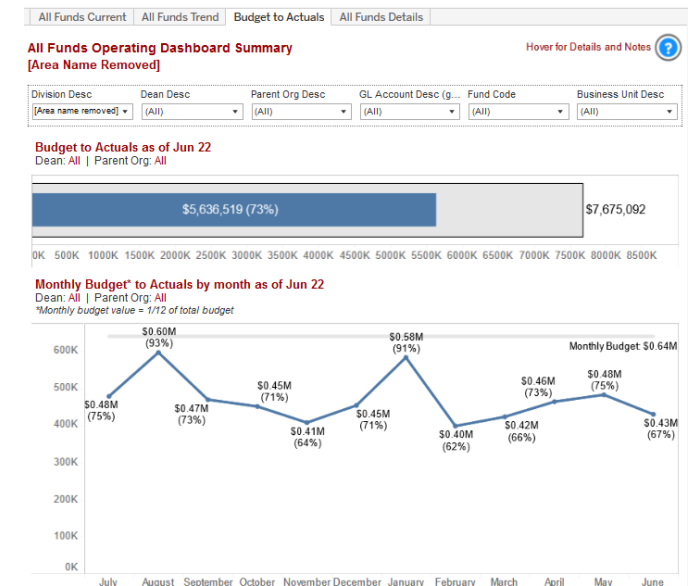
Financial dashboards allow unit and institutional leaders to see current data, trends, and budget to actuals



Office of Institutional Research and Office of Administration and Finance | Data Source: Stony Brook Data Warehouse
Data Last Refreshed: 7/15/2022 8:48:09 AM



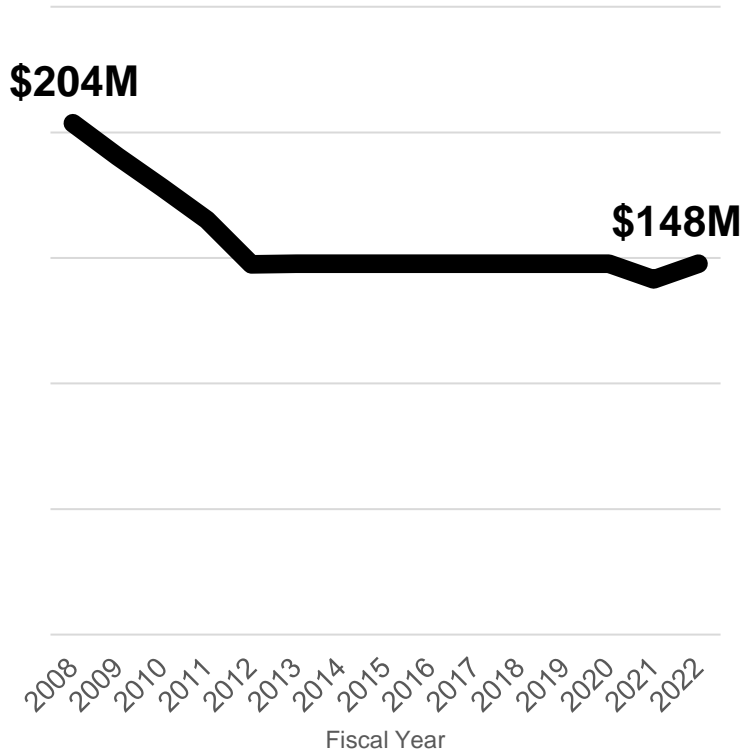
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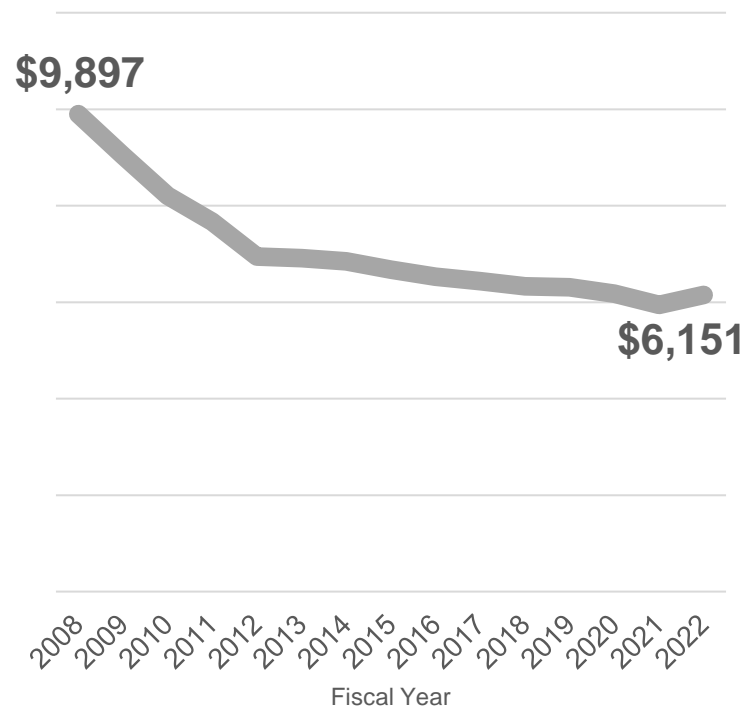
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Better unit-level budget management has helped the University deal with decreases in state funding and frozen tuition

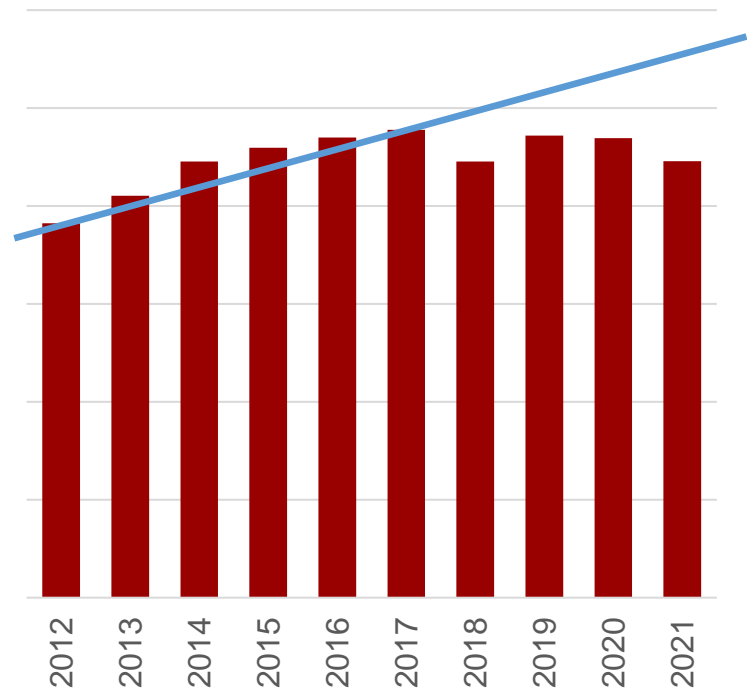
State tax support



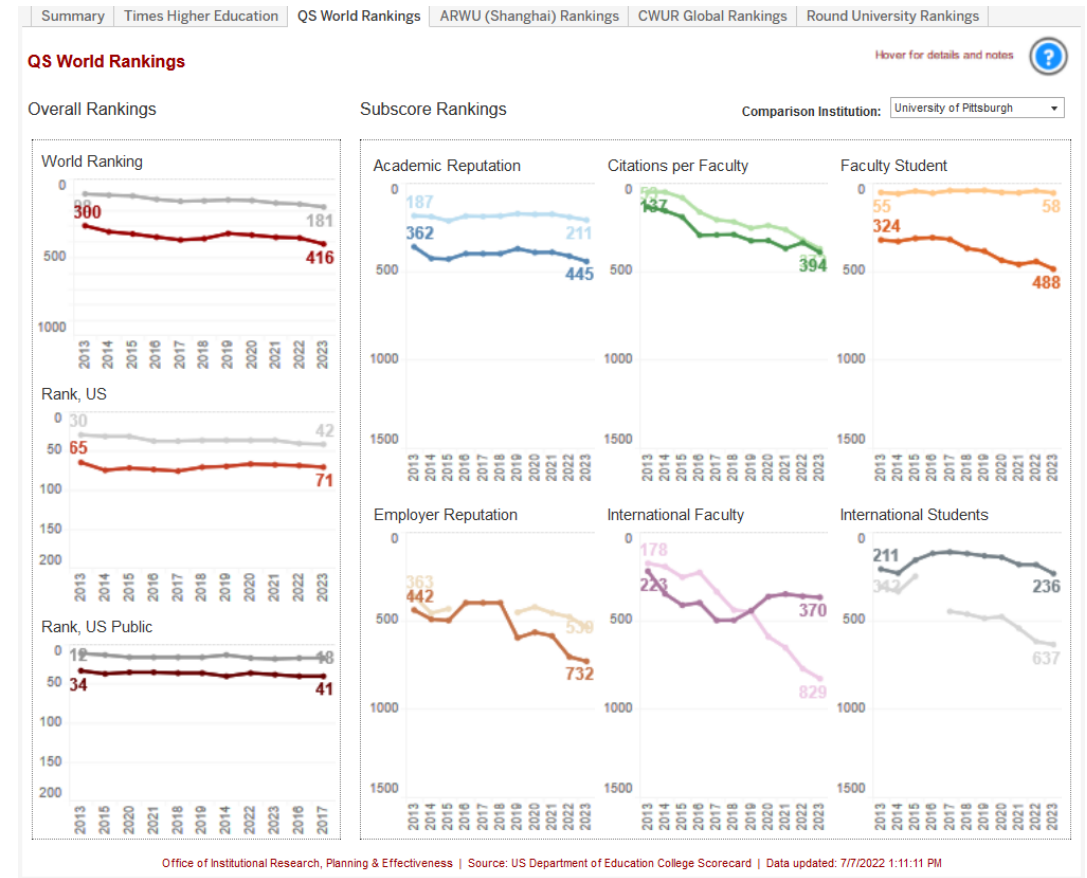
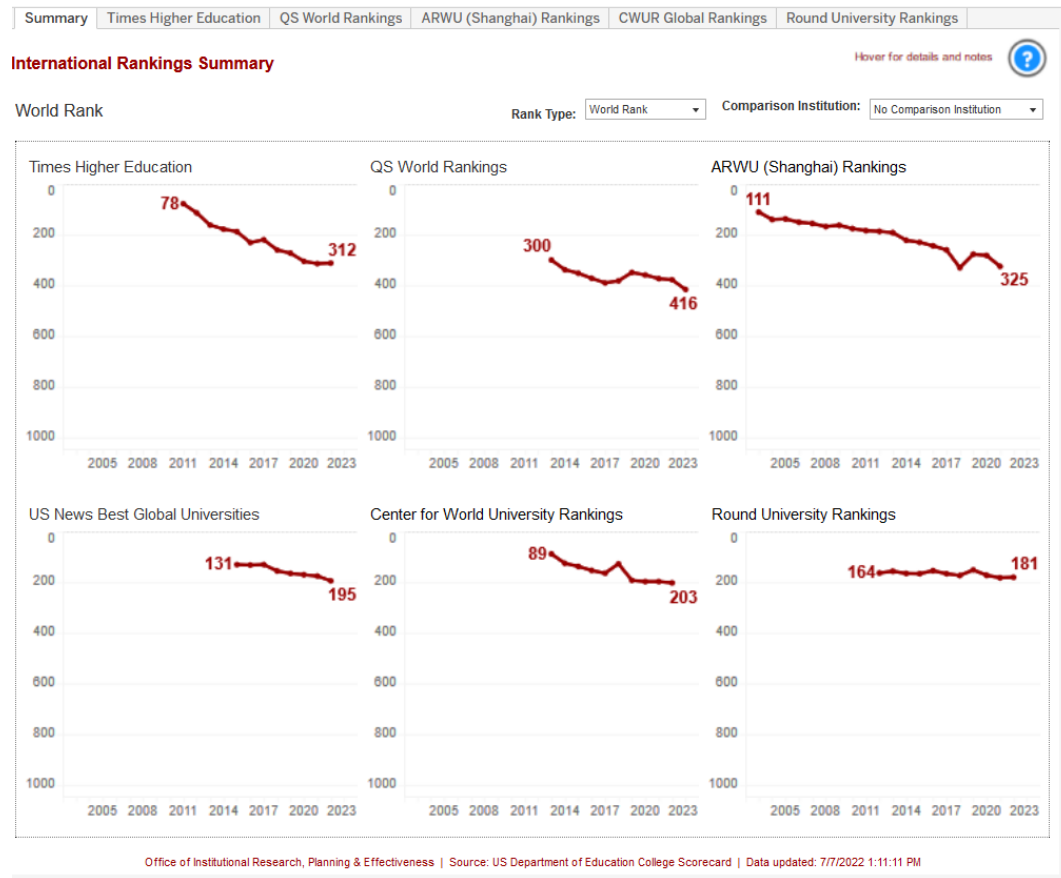
State tax support per FTE Enrollment



Education & Support Costs per FTE Enrollment

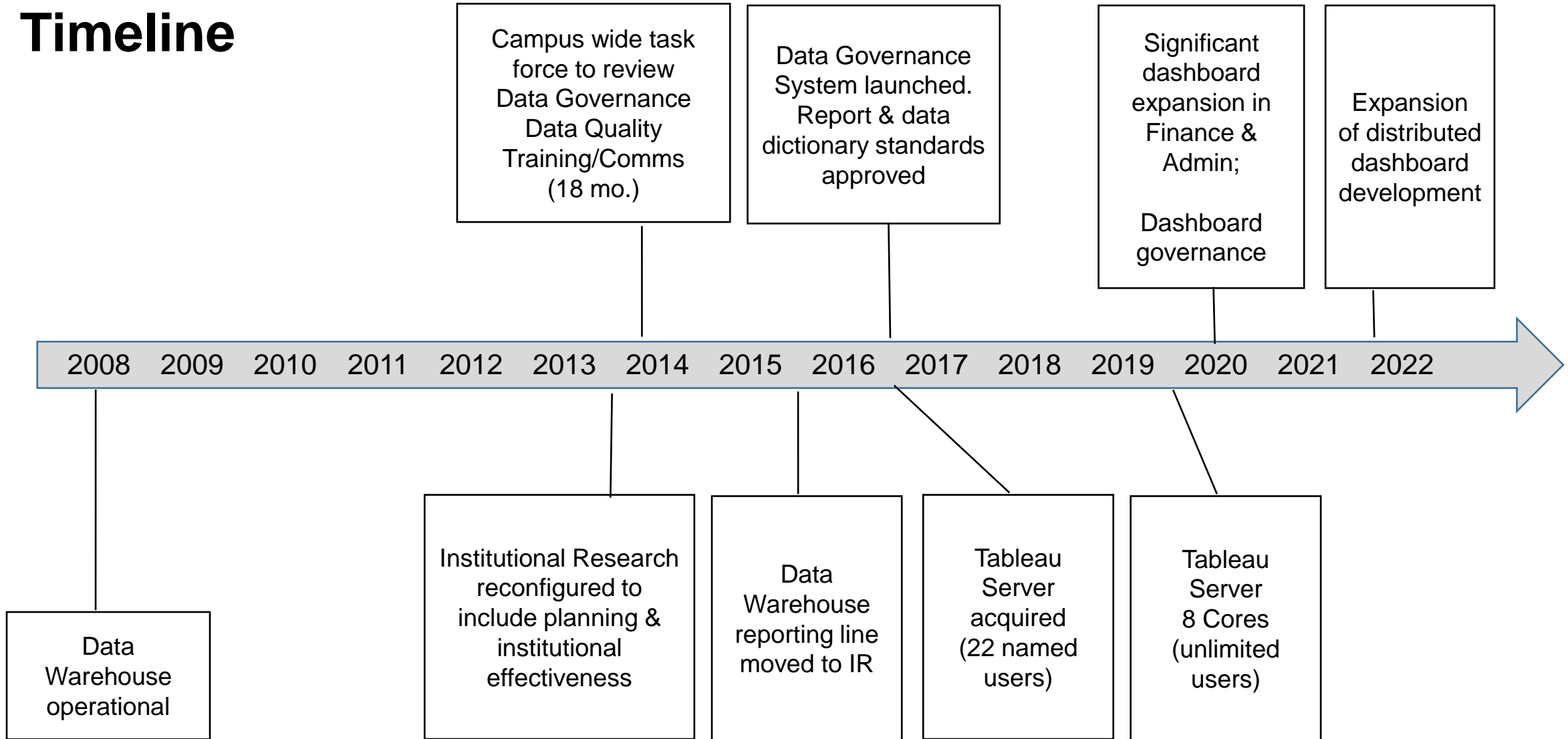


Results don't always improve just because you make a dashboard

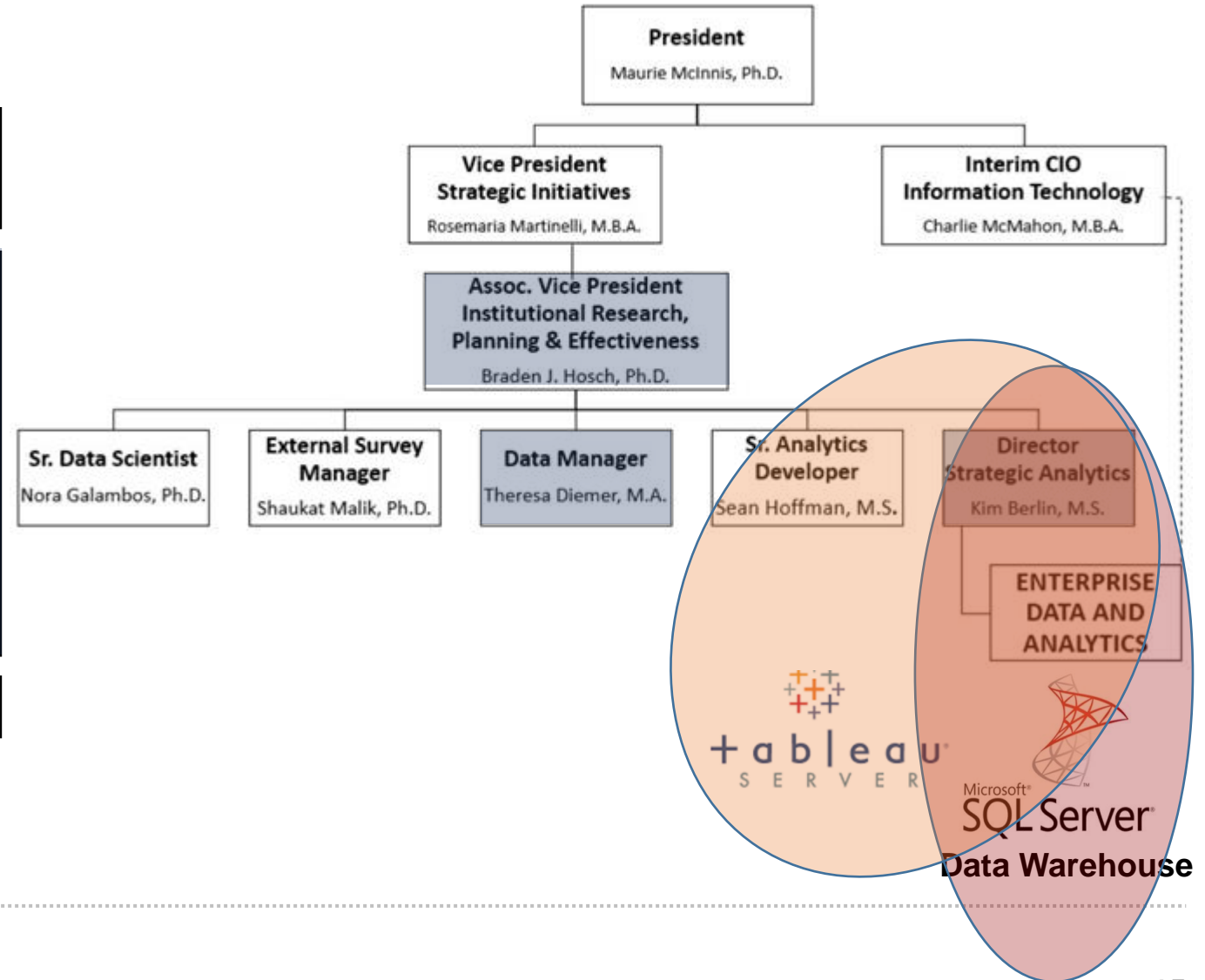
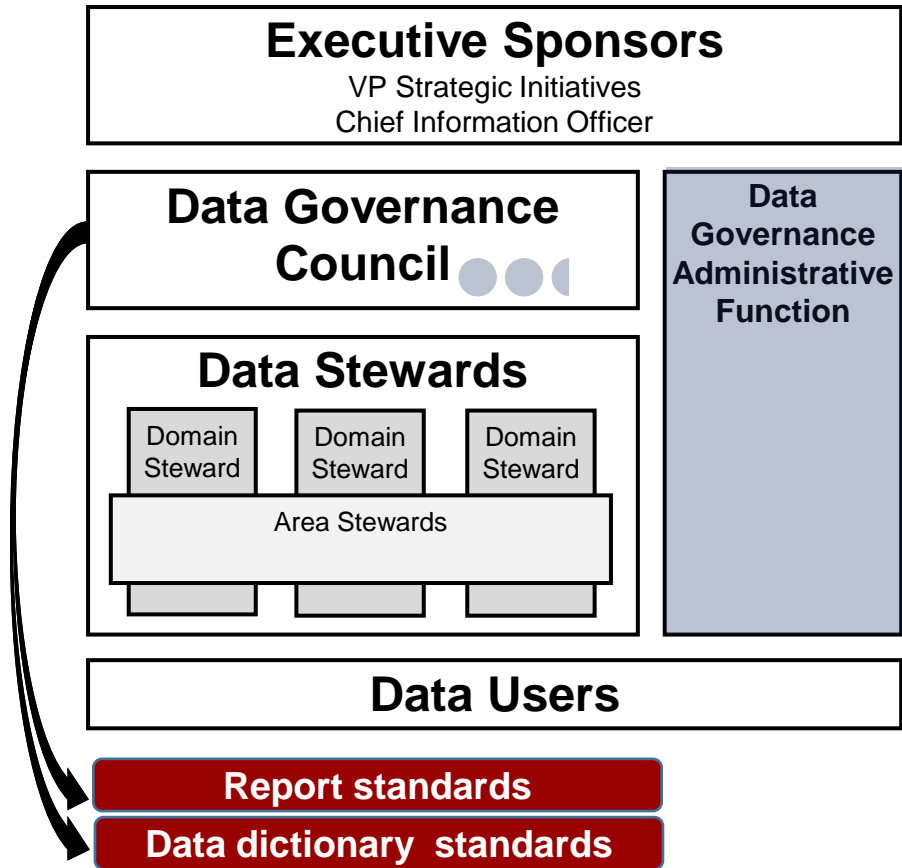


Stony Brook's organization and data environment

Timeline



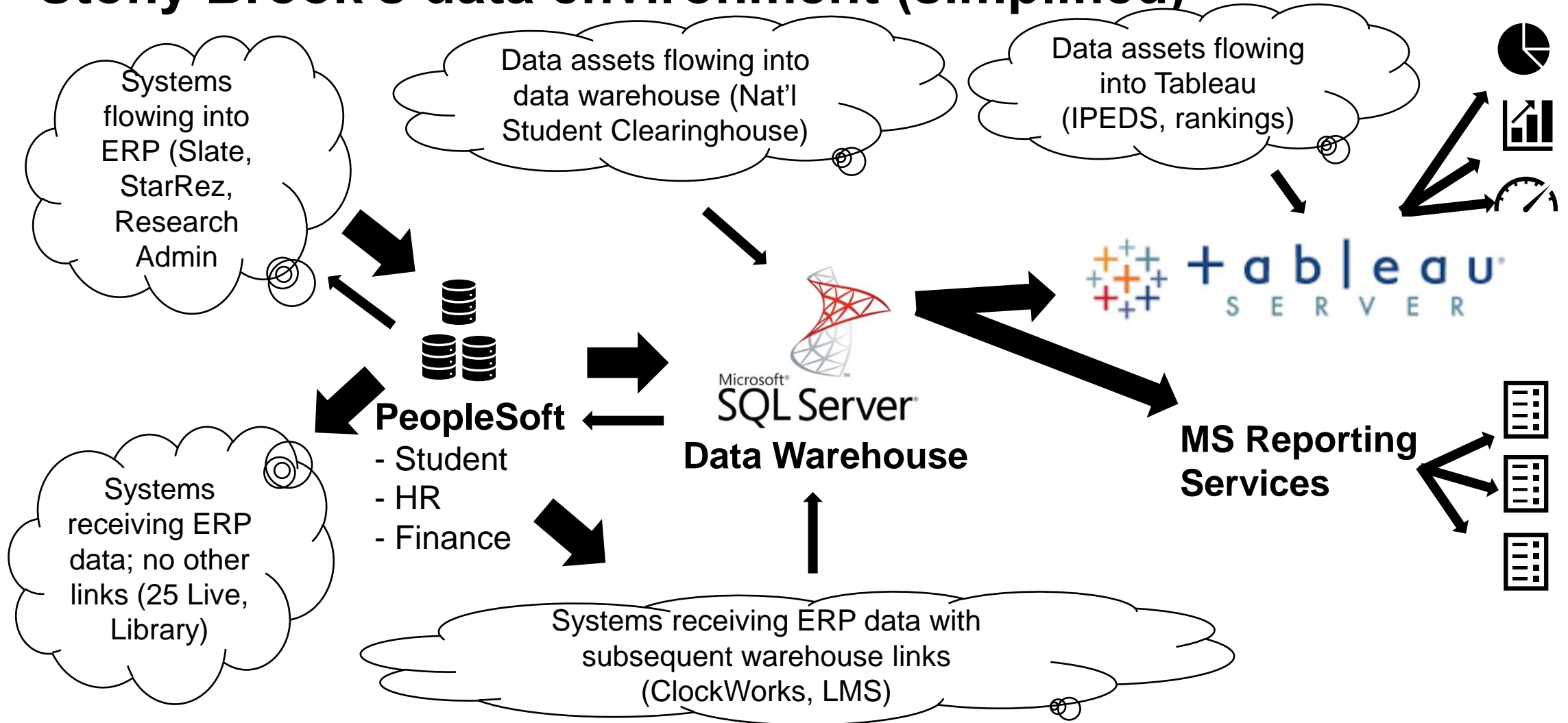
Stony Brook's Organizational Environment



The university data environment

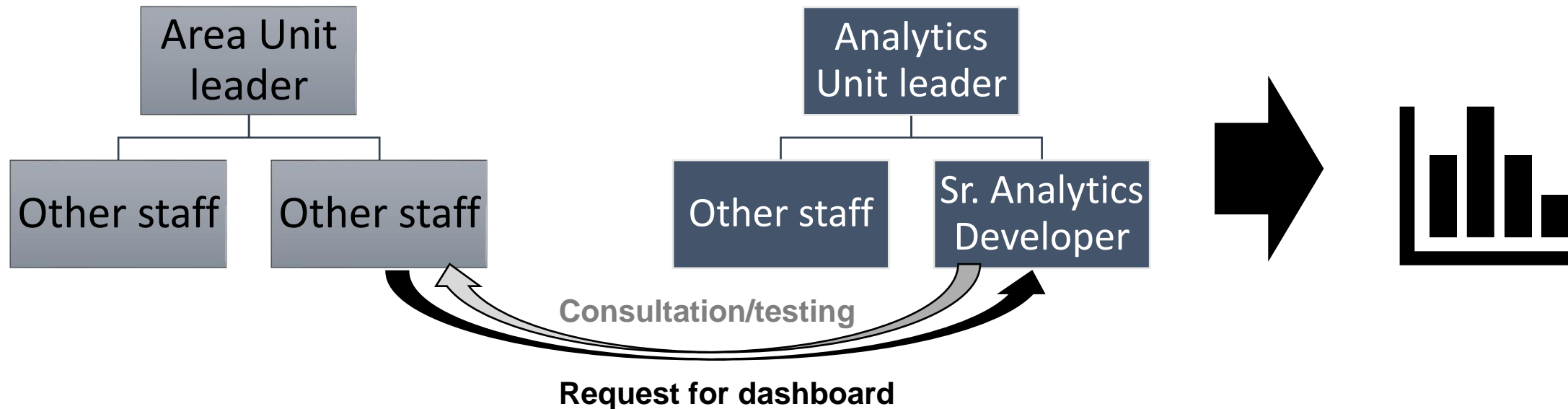


Stony Brook's data environment (simplified)



Three models for dashboard development at Stony Brook

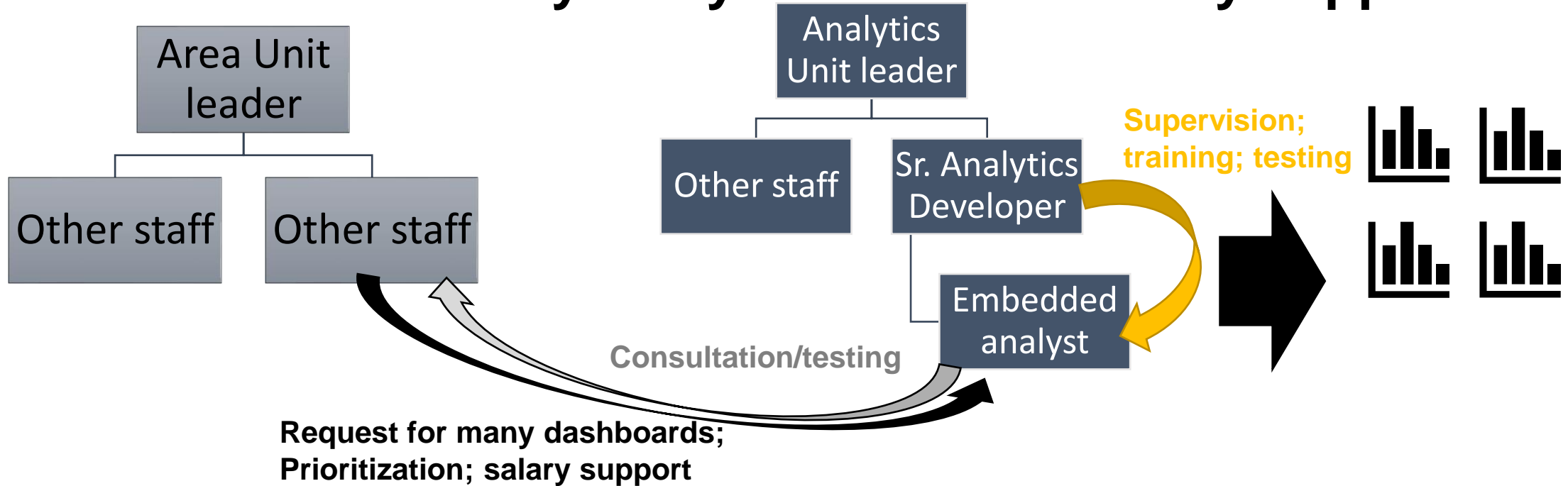
Model 1: Dashboards developed by dedicated university analytics unit



Pros: strong dashboard design and functionality; consistent design; can work with no additional resources

Cons: less expertise with underlying data; additional time for QA and consultation, volume and speed limitations

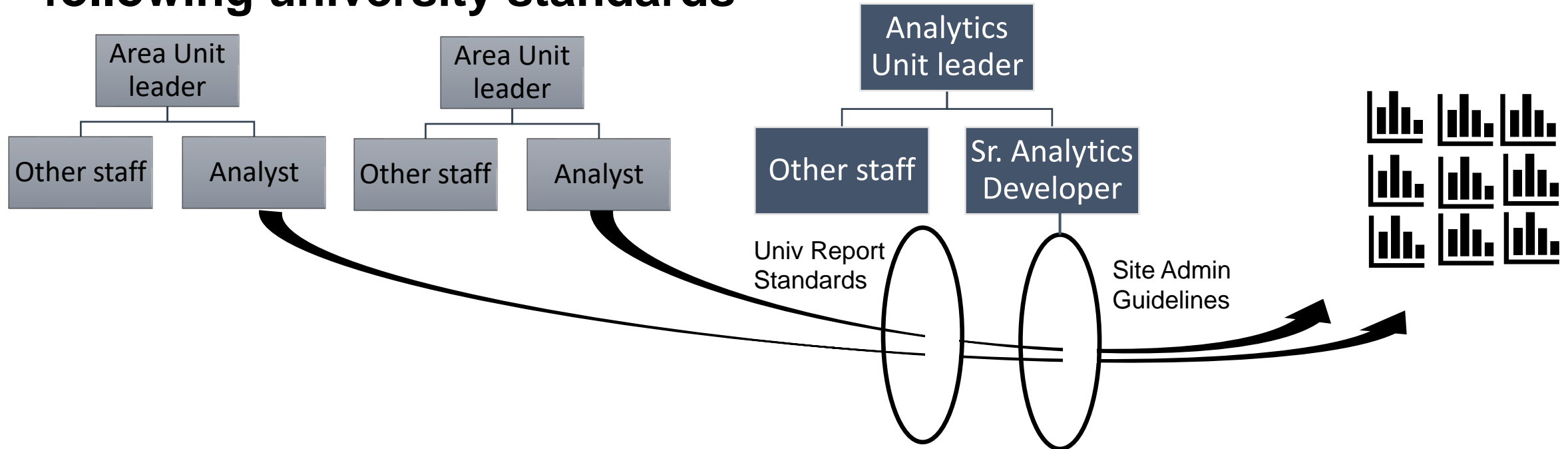
Model 2: Dashboards developed by analyst embedded in dedicated university analytics unit with salary support



Pros: strong dashboard design and functionality; consistent design; faster dashboard development

Cons: less expertise with underlying data; additional time for QA and consultation, supervision & training take development time from supervisor; “two bosses”; additional resources

Model 3: Analysts in various units develop dashboards following university standards

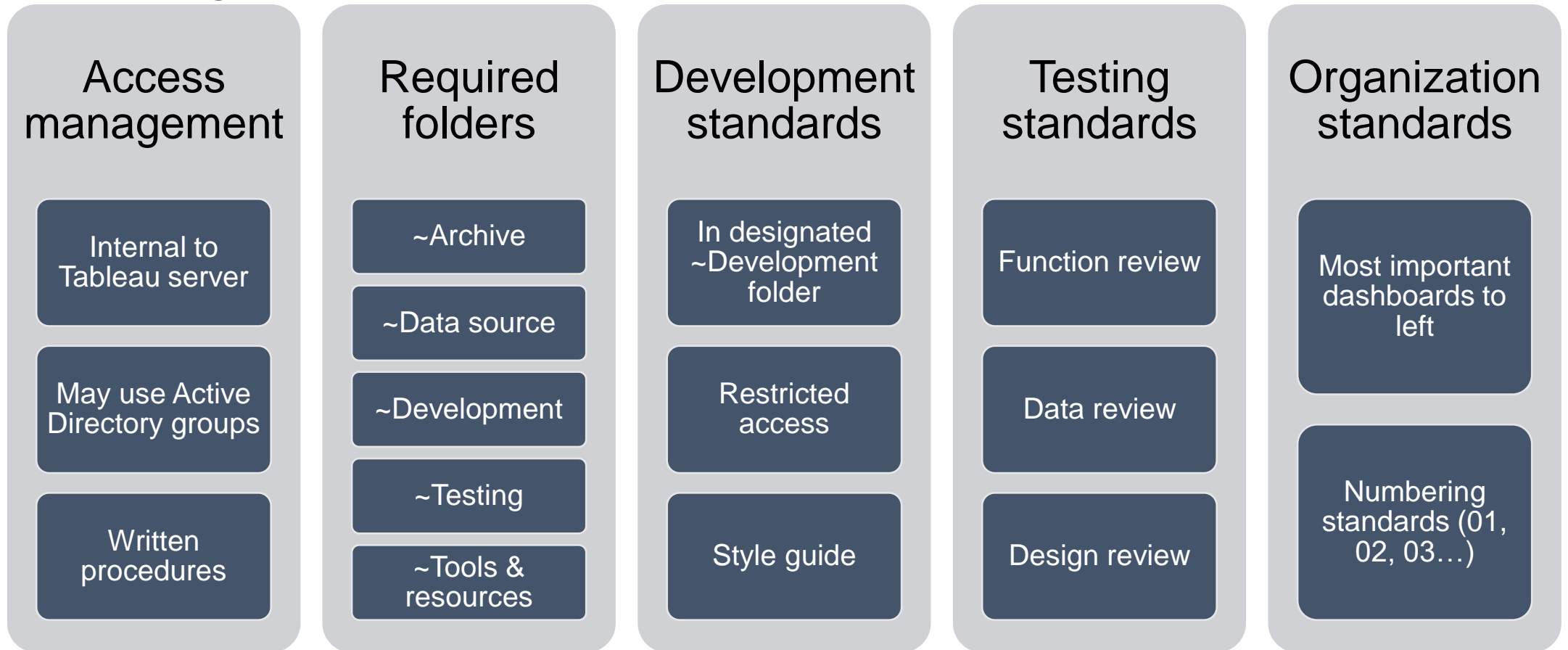


Pros: rules for consistent design; responsibility clearly assigned; capacity to scale

Cons: QA relies upon strong processes in all development units; reliability issues in one area reflect poorly on all other areas; enforcement of rules requires resources; despite an inventory, no one knows exactly what we have.

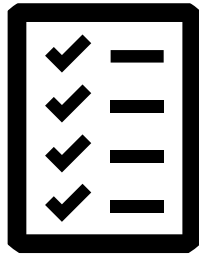
Stony Brook dashboard governance – Rules of the Road

Site managers responsible to ensure and maintain

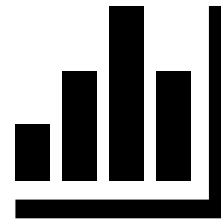


Lessons learned and final thoughts

Design is as important as content



Develop,
disseminate, and
follow a style guide



Visualization principles
Charts, not tables
Tell a story
BANs (“Big-Ass Numbers”)
Left-to-right design
Limit visual elements



Build accessible
dashboards at
the outset

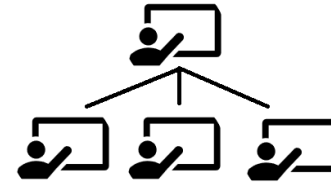
Invest in professional development



Formal,
instructor
led



Tableau
Conference

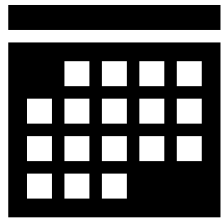


Train-the-
trainer



Communities
of practice

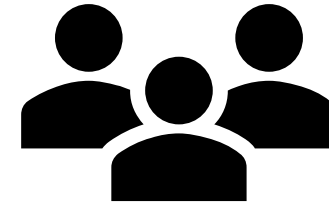
Develop and execute a communication plan



Annual calendar
of emails about
data availability

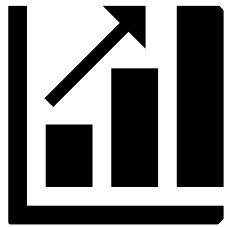


Deliberate broadcast
about new/retired
features, updates,
maintenance

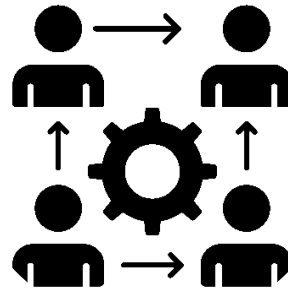


User categories,
lists, email
addresses

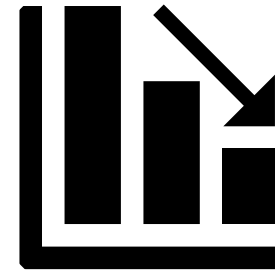
Monitor analytics views and users; anticipate decrease in other areas



Dashboard views, users, power users should increase



Exclude development staff from metrics



Web site, fact book usage, other data requests should decrease

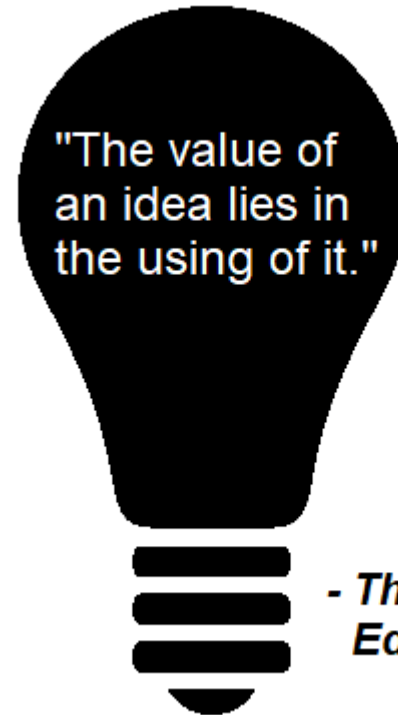
Final thoughts about analytics implementation

“Confusion and clutter are failures of design, not attributes of information.”



“Design cannot rescue failed content”

-Edward Tufte



- Thomas Edison



-Vidal Sassoon