VHA & the National Academy of Sciences
May 2019

Facilities Performance Metrics in Higher Ed

Better Serving Institutions Through Impactful Dashboards

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Facilities Forum

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Winning on a Shoestring Budget

Oakland A's Use "Moneyball" Metrics to Make Playoffs, Despite Low Budget

Oakland Athletics Recruit Undervalued Players Based on Key Metrics

Wikipedia.

Following 2001 season, Oakland Athletics **lose three talented free agents** to larger market teams

Rather than traditional **scout observations**, A's recruit inexpensive players based on **data analyses** of key metrics

A's General Manager Billy Beane identifies on-base percentage and total bases earned as **key indicators of player performance**

Oakland A's execute **20-game winning streak** and make 2002 playoffs with one of **lowest budgets in the league**

Source: Mark Adams, "The Man Behind Moneyball," https://www.domo.com/blog/the-man-behind-moneyball-the-billy-beane-story; Ryan Wright, "Moneyball," http://bleacherreport.com/articles/858470-moneyball-a-look-inside-major-league-baseball-and-the-oakland-as; EAB interviews and analysis.

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Data Overload

Facilities Struggles to Translate Reams of Data into Actionable Insights

Facilities Tasked With Tracking More Data…

- Utilities
- Sustainability
- Building Condition
- Facilities Workforce
- Operating and Capital Costs
- Campus Cleanliness
- Work Orders and Maintenance
- Space Management
- Capital Projects
- Safety and Compliance

…and Has More Data Sources to Manage

- Computerized Maintenance Management Systems (CMMS)
- Geographic Information Systems (GIS)
- Space Information Management Systems (SIMS)
- Building Meters
- Project Management Databases
- Customer Satisfaction Surveys
- Post-Work Order Surveys
- Fiscal Management Systems

1) Computerized Maintenance Management System.

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Source: EAB interviews and analysis.

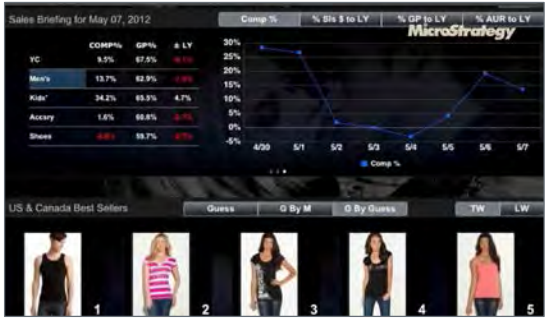
A Proven Solution

Private Companies Across All Sectors Use Dashboards to Inflect Performance

McDonald's

The Container Store

GUESS



e-Harmony

Source: Mazzotta J, "Web Design"; MicroStrategy, "Customer Case Study: Retail"; MicroStrategy, "MicroStrategy and eHarmony"; MicroStrategy, "MicroStrategy and GUESS"; EAB interviews and analysis.

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The Power of Data

Work Order Dashboard Facilitates Targeted Interventions at OSU

THE OHIO STATE UNIVERSITY

Slow Work Orders Frustrate Customers

Multiple Facilities shops not meeting **service call lead time** expectations

Shops not following standard procedures for planned work

Delayed work orders fuel customer dissatisfaction

SFO Implements New Dashboard and Processes

Facilities develops real-time work order aging dashboard

Dashboard helps SFO pinpoint new processes and procedures to accelerate work orders

Begins sending automated monthly aging work order report to maintenance zone leaders to facilitate continuous improvement

Changes Save Time and Money at The Ohio State University (OSU)

374 **Fewer annual trips** to stockroom

422 **Labor hours recouped** annually

20% Reduction in **service call lead time** (from 49 to 39 days)

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Source: The Ohio State University, Columbus, Ohio; EAB interviews and analysis.

Differentiating Dashboards from Scorecards

	 **Dashboard**	 **Scorecard**
Capsule Description	Overview of performance on core operational measures	Overview of progress toward strategic objectives
Audience	SFO, Facilities leadership, and CBO; in some cases, campus-wide audience	President, Provost, CBO, and other institutional leaders
Principal Aim	Uncover meaningful trends in core metric performance that merit responsive action	Demonstrate the alignment between unit activities and institution's strategic goals
Contents	Data on metric performance relative to targets, historical performance, and related metrics	Strategic objectives, initiatives, and performance on associated progress measures
Limitation	Does not measure strategic initiative impact on advancement of key priorities	Does not allow for analysis of pace of progress or of non-strategic indicators

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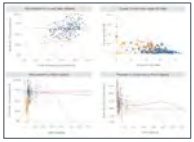
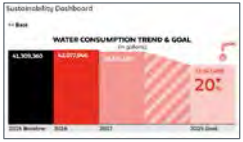
Source: EAB interviews and analysis.

Three Major Types of Facilities Dashboards

	Facilities Management	Function / Department	Sustainability
			
Description	Tracks most critical Facilities metrics; SFOs use to gauge and improve operational performance	Tracks function-specific operational metrics; department leaders use to assess performance	Tracks institution- and unit-level energy/utility metrics; shared with broad campus audience to track sustainability efforts
Number of Metrics	15-20	8-12	6-30
Industry Prevalence			
Examples	• Northwestern University • California State University-East Bay	• Western Michigan University • University of Minnesota	• The New School • Arizona State University • Columbia University

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Source: EAB interviews and analysis.

Building an Effective Facilities Dashboard

Strategies to Overcome Common Dashboard Challenges

Three Main Challenges	*Today's Areas of Focus*
1 Deciding which metrics to elevate	**Select Key Performance Indicators (KPIs)**
2 Displaying metrics in compelling format	**Employ User-Friendly Layout and Format**
3 Choosing appropriate targets and triggers	**Set Principled Targets and Action Triggers**

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Source: EAB interviews and analysis.

1. **Select Key Performance Indicators (KPIs)**
2. Gauge Performance Through Customer Service Metrics
3. Employ User-Friendly Layout and Format
4. Set Principled Targets and Action Triggers

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Bringing Metric Selection to Life

Screening Process Helps Narrow Core Metrics from Long Starting List

Five-Step Metric Selection Filtering Process

	Consideration	Description
1	**Apply a Reality Check**	Set aside metrics not readily accessible, regularly tracked, supported by reliable data, or easily communicated to others
2	**Map to Strategic Objectives**	Identify metrics that most directly measure progress on Facilities' strategic objectives
3	**Swap Lagging for Leading Metrics**	Where feasible, identify leading indicators in lieu of measures providing information "after the fact"
4	**Account for High-Priority Imperatives**	Add "hot-seat" metrics that shed light on pressing yet temporary areas of concern
5	**Ensure Balance of Metric Categories**	Force trade-offs in overrepresented areas by sorting metrics by function or strategic perspective

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Source: EAB interviews and analysis.

Apply a Reality Check

Four Pragmatic Screens to Determine Metric Viability

Suggested Screens

Metric Screen	Description	Rationale
Accessibility of Data	Information system must possess the capability to generate data on metrics.	Time-consuming to manually pull and analyze data for each metric.
Frequency of Tracking	Metrics elevated to unit dashboard should be monitored at regular intervals (e.g., monthly or quarterly).	Infrequent (e.g., annual) data updates hamper ability to assess performance at regular intervals.
Reliability of Data	Data available from information system should be accurate, consistently defined, and measured across the institution.	Absence of trustworthy data results in stakeholder suspicion toward performance, often resulting in inaction.
Communicability of Data	Definition and rationale for metrics should be easy to communicate and understand.	Lack of understanding about metric drivers and relevance hinders ability to inflect performance.

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Source: EAB interviews and analysis.

Tool: Reality Check Screening for Metrics

Ideal Metrics Prompt "Yes" for Every Question in List

Accessibility of Data

1. Is the data for this metric collected via an automated system?
2. If not, can someone collect and report the data within a few hours?
3. Is the system capable of calculating and reporting the results for this metric?

Frequency of Tracking

4. Can this metric be tracked more than once a year?
5. Can this metric be tracked frequently enough to inform action?

Reliability of Data

6. Do all departments use the same definition for this metric?
7. Is the metric calculated by an automated system?
8. Can you ensure the accuracy of the reported data?
9. Do managers trust the data for decision making?

Communicability of Data

10. Is this metric easily explained to and understood by leaders outside your unit?
11. Do managers typically agree on the definition of this metric?
12. Are managers aware of the importance of tracking the metric?
13. Do managers understand how performance on this metric impacts institutional goals?

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Source: EAB interviews and analysis.

Map to Strategic Objectives

Confirm Metrics Directly Measure Strategic Objectives Rather than Initiatives

Framework to Map Metrics to Institutional Strategic Priorities

	Strategic Priorities	Strategic Objectives	KPIs	Targets	Strategic Initiatives
Description	• Backbone for strategy; roughly four to eight • Usually derived from mission statement	• Stem from strategic priorities; typically 40 to 60 • Adapted annually to every few years	Indicators that track progress toward objectives	• Indicator goals that motivate performance • Frequently reset to ensure continuous improvement	Set of actions to raise metrics above target levels
Example	Operational Efficiency	Prioritize preventive maintenance (PM) work to decrease resources spent on reactive work	PM/RM Ratio (Ratio of preventive maintenance to reactive maintenance tasks completed)	70%/30%	Develop prioritized PM schedule that reflects condition and strategic important of assets

Metrics should flow directly from strategic objectives

Many institutions mistakenly track metrics that assess strategic initiative progress

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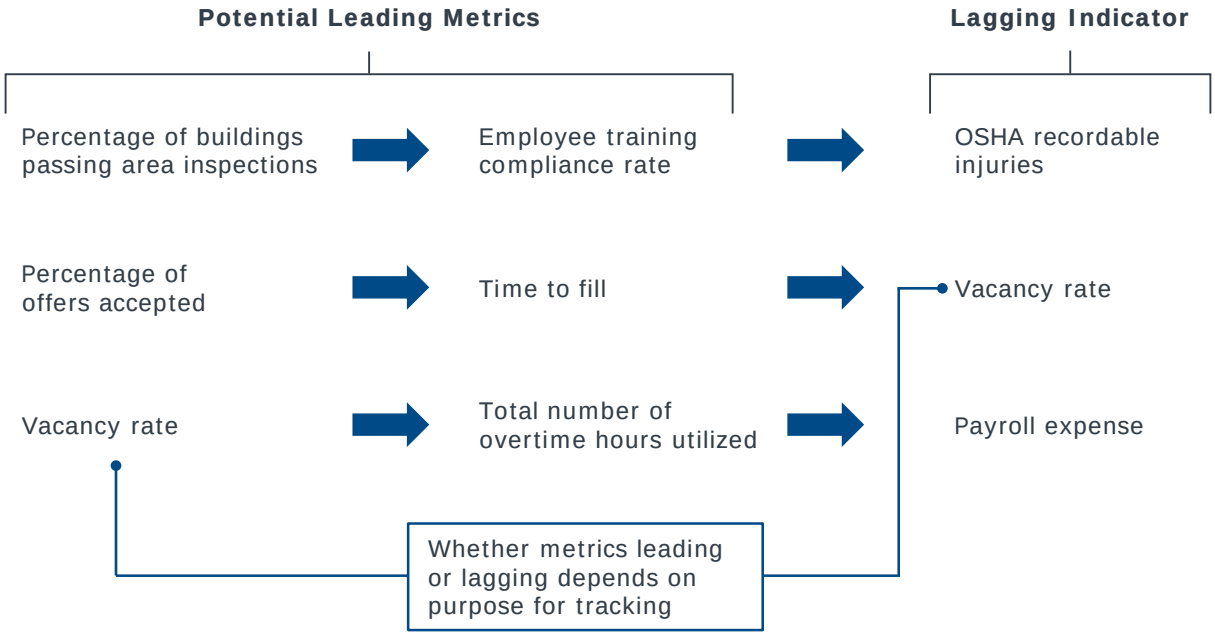
Source: EAB interviews and analysis.

Swap Lagging for Leading Metrics

Comparing Leading and Lagging Indicators in Facilities



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Source: EAB interviews and analysis.

Identifying Leading Metrics

Questions to Consider

For each core metric, brainstorm potential leading metrics, considering the questions below.

- What are the key drivers of the core metric?
- Which metrics make up the formula for the core metric?
- Which metrics have a defensible link to the challenge the original metric was intended to monitor?
- What processes drive success or failure in the core metric?
- Is there a leading metric for the leading metric—a metric even further upstream?

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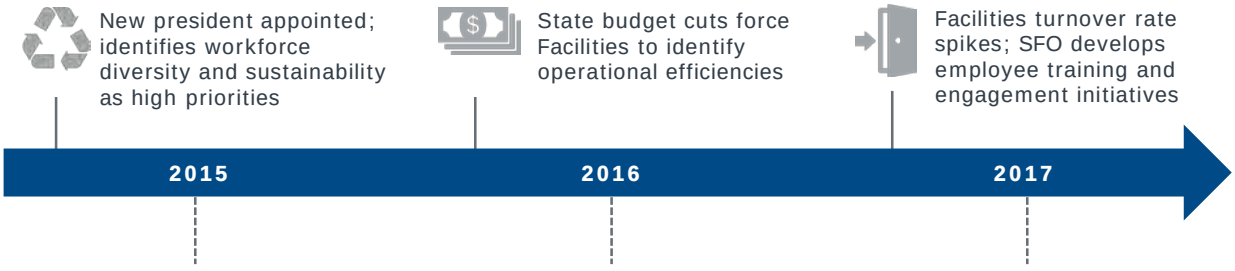
Source: EAB interviews and analysis.

Account for High-Priority Imperatives

Elevate “Hot-Seat” Metrics in Response to External and Internal Pressures

Example Pressures that Drive New Metrics to Dashboard



2015 Dashboard

Metric	Status
Work order cycle time	
Campus safety rating	
Acre per grounds FTE	
MBTU/square foot	
Waste diversion rate	
Leadership roles filled by underrepresented minorities	

2016 Dashboard

Metric	Status
Work order cycle time	
Campus safety rating	
Acre per grounds FTE	
MBTU/square foot	
Operating budget execution	
Capital project spending per gross square foot	

2017 Dashboard

Metric	Status
Work order cycle time	
Campus safety rating	
Acre per grounds FTE	
MBTU/square foot	
Internal promotion rate	
Percentage of managers completing training hours	

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Source: EAB interviews and analysis.

Ensure Balance of Metric Categories

Equitably Distribute Metrics Across Facilities Functions or Strategic Pillars

Option 1:
Function or Capability

The most straightforward categorization scheme is to group metrics based on Facilities functions or capabilities, ensuring a balance of metrics across all responsibilities.

Sample Facilities Functions

- Campus Operations
- Fiscal Management
- Service Delivery
- Safety and Compliance

Option 2:
Strategic or Institutional Perspective

A second categorization scheme sorts metrics by institutional strategic pillars, which helps illustrate the link between Facilities initiatives and overall institution success.

Sample Strategic Pillars

- Student Success
- Enrollment
- Research and Scholarly Excellence
- Financial Strength and Stewardship

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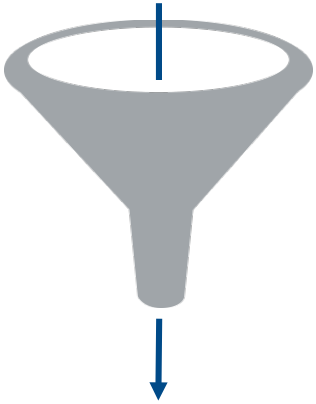
Source: EAB interviews and analysis.

Getting from Metrics to KPIs

Metrics that Measure Progress Toward Strategic Objectives Become KPIs

100's of Potential Metrics



15-20 KPIs

Metrics are quantifiable measurements collected to track organizational activities and processes

Key performance indicators (KPIs) are metrics that indicate progress toward strategic and operational objectives. KPIs should break down to be:

20% **Volume indicators**: raw numbers that provide information on volume or scale (e.g., number of work orders completed annually)

80% **Relative indicators:** calculations of multiple metrics that provide relative information (e.g., percentage of work orders categorized as emergency)

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Source: EAB interviews and analysis.

1 Select Key Performance Indicators (KPIs)

2 **Gauge Performance Through Customer Service Metrics**

3 Employ User-Friendly Layout and Format

4 Set Principled Targets and Action Triggers

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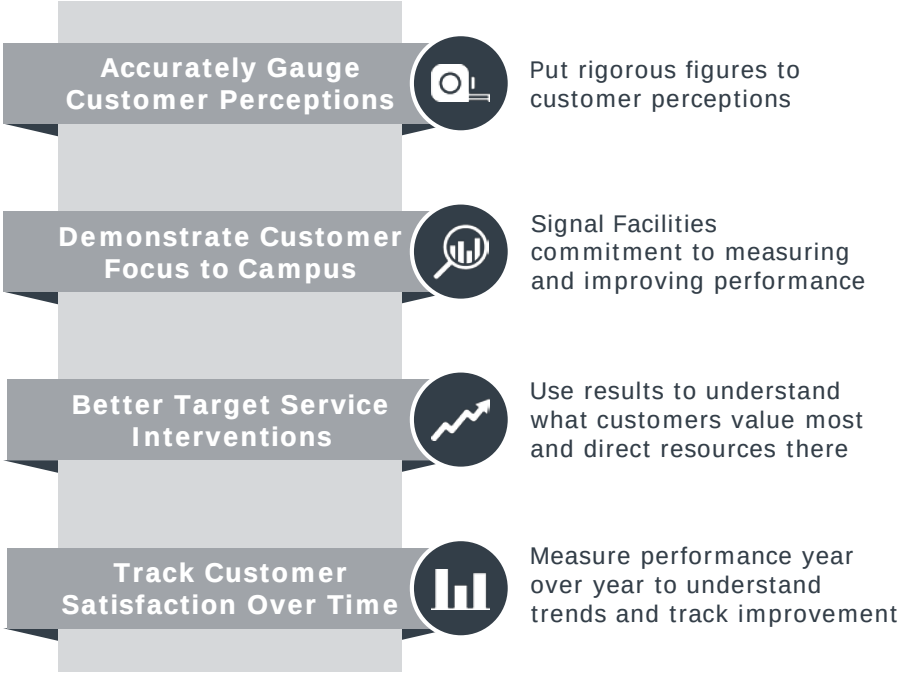
Quantify Current Customer Perceptions Through Facilities-Focused Satisfaction Survey

Customer Satisfaction Surveys Efficiently Gauge Facilities Service Perceptions

Four Benefits to Measuring Customer Satisfaction



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Source: EAB interviews and analysis.

Post-Work Order Surveys Only a Partial View

PWOSs Offer Immediate Feedback, But Not a Holistic Evaluation

Benefits and Drawbacks of a Post–Work Order Survey (PWOS)

Benefits	*Drawbacks*
Evaluates Individual Staff Members Feedback on specific staff members allows managers to commend high performers and target training for poor performers	**Focuses on Specific Events** Work order surveys only provide information from those who request a service; they do not collect information on overall satisfaction with Facilities
Tracks Performance on Work Order Responses Surveys ensure Facilities is adequately responding to customer requests before closing work orders	**Relies on a Skewed Sample** Only customers who request work orders will fill out a survey; PWOSs do not reach the broader campus audience affected by Facilities in other ways
Aids Short-Term Planning Analysis of survey results can surface trends that help Facilities see how to better meet immediate customer needs	**Elicits Extreme Feedback** Customers are most likely to respond when extremely satisfied or dissatisfied with Facilities performance or staff member providing service

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Source: EAB interviews and analysis.

Bringing Customer Expectations into Focus

Barriers to Effective Customer Satisfaction Surveys	Elements of Effective Surveys
Institutions fail to set clear goals for their survey, and as a result, do not get good information	**Survey Design: Ask Targeted Questions to Get the Right Data**
Surveys struggle to reach important constituents and achieve reasonable response rates	**Survey Deployment: Create an Outreach Plan to Maximize Response Rates**
Even when institutions have well-designed surveys, they don't know how to analyze the data to inform operational decision making	**Survey Analysis: Use Feedback to Make Customer-Centric Decisions**

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Source: EAB interviews and analysis.

The Power of Demography

Demographic Prompts Enable Leaders to Sort Results by Constituency

Sample Demographic Questions

Role	Level	Department Affiliation
Faculty	Undergraduate	Advancement Office
Staff	Graduate	Biology
Student	Adjunct Professor	Chemistry
	Associate Professor	Engineering
	Full Professor	Financial Aid
	Dean	Finance and Administration
	Manager	History

Demographic questions should have dropdown response options rather than free space to simplify response sorting

ST. JOHN'S UNIVERSITY

Understanding Faculty vs. Student Needs at St. John's University

St. John's University in Queens, New York released a customer satisfaction survey in 2014. The majority of faculty responses focused building temperature issues; however, when Facilities staff broke out student results separately, they discovered students were most concerned with Wi-Fi access and availability of electrical outlets for charging their mobile devices.

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Source: St. John's University, Queens, NY; EAB interviews and analysis.

Don't Reinvent the Wheel

Use Variety of Questions from Proven Survey Categories

Snapshot of EAB's Customer Satisfaction Question Bank

Demographic Questions

To assist institutions in building or improving their customer satisfaction survey, the Facilities Forum has compiled a question bank. Most institutions will not ask every question listed here and will add questions beyond the ones listed. However, this question bank is a good starting point for creating an effective customer satisfaction survey for Facilities departments.

Demographic Questions

The following questions provide the demographic information needed for most basic analyses.

Note: the survey should be designed so that respondents can only select one option for each prompt. The options should be pre-populated in a drop-down or multiple choice format so that responses use consistent language to reference roles, departments, and buildings.

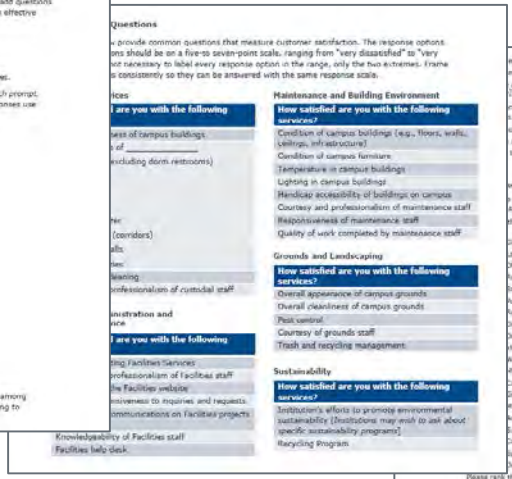
What is your role at the institution?

- ☐ Student
  - ☐ Undergraduate
  - ☐ Graduate
    - ☐ Master's
    - ☐ Doctoral
- ☐ Faculty
  - ☐ Full-time
  - ☐ Adjunct
  - ☐ Visiting
- ☐ Staff
  - ☐ VP/AVP
  - ☐ Dean
  - ☐ Department Chair
  - ☐ Department Manager
  - ☐ Administrative Staff

In which department do you work?

In which campus building do you spend most of your time? (If you split your time among multiple buildings, please choose one building to primarily consider while responding to the survey.)

Likert-Scale Questions



Questions

provide common questions that measure customer satisfaction. The response options ons should be on a five-to seven-point scale, ranging from "very dissatisfied" to "very ot necessary to label every response option in the range, only the two extremes. Frame s consistently so they can be answered with the same response scale.

ices

I are you with the following

west of campus buildings

of

excluding dorm restrooms)

(corridors)

alls

ties

leaning

onfessionalism of custodial staff

inistration and ice

I are you with the following

ting Facilities Services

rofessionalism of Facilities staff

the Facilities website

sponsiveness to inquiries and requests

mmunications on Facilities projects

Knowledgeability of Facilities staff

Facilities help desk

Maintenance and Building Environment

How satisfied are you with the following services?

- Condition of campus buildings (e.g., floors, walls, ceilings, infrastructure)
- Condition of campus furniture
- Temperature in campus buildings
- Lighting in campus buildings
- Handicap accessibility of buildings on campus
- Courtesy and professionalism of maintenance staff
- Responsiveness of maintenance staff
- Quality of work completed by maintenance staff

Grounds and Landscaping

How satisfied are you with the following services?

- Overall appearance of campus grounds
- Overall cleanliness of campus grounds
- Pest control
- Courtesy of grounds staff
- Trash and recycling management

Sustainability

How satisfied are you with the following services?

- Institution's efforts to promote environmental sustainability [*Institutions may wish to ask about specific sustainability programs*]
- Recycling Program

Open-Ended Questions

ments

nest box at the end of each section of the survey:

any additional comments, concerns, or explanations for your responses about

nt boxes at the end of each section, some institutions choose to include optional s at the end of the survey. Examples include:

ilities do to improve your campus experience?

any further comments or concerns with Facilities services that you wish to share?

to be contacted about any of your responses? If so, please provide your email

s

e prioritize specific functions or space types can ask respondents to rank items in An example is below:

the following spaces in order of how important their cleanliness and upkeep

Classrooms

Labs

Offices

Restrooms

Student Center

Public space (corridors)

Residence Halls

Dining Facilities

Outdoor areas

the following services in order of their importance to you:

Wi-Fi connectivity

HVAC (room temperature)

Campus cleanliness

Grounds cleanliness

Maintenance and building upkeep

Accessibility

Sustainability

Campus Safety

Space Management

Design and Construction

Please rank the following potential renovation projects in order of their importance to you:

- [*List three to five potential renovation projects currently under serious consideration*]

Source: EAB interviews and analysis.

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Achieve Your Desired Response Rate

Three Strategies to Optimize Deployment and Maximize Participation

SURVEY LENGTH

Limit Survey Length to No More Than Eight Minutes

- Maximum survey duration before drop-off rate increases (according to SurveyMonkey)
- Shorter surveys (30 to 40 questions max) are likely to generate higher response rate
- Facilities should ask a few people to test the survey for completion time

INTERNAL VETTING

Leverage Institutional Research Expertise

- Institutional Research (IR) department staff have expertise in designing questions, sending surveys, and analyzing results
- IR may assist in coordinating survey deployment across units (particularly if customer satisfaction survey is embedded in broader administrative survey)

TIMING AND INCENTIVES

Maximize Response Rate Through Timing and Incentives

- Surveys deployed in particularly busy times are likely to get lost and have fewer responses
- February and April are typically less busy months that avoid holiday breaks, midterms, and finals
- Incentives (e.g., raffle for one of several large prizes) can increase participation rates

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Source: EAB interviews and analysis.

Use Comments to Solicit Actionable Feedback

New Mexico State University (NMSU) Triages Comments to Unit Leaders

NMSU's Process for Addressing Customer Comments

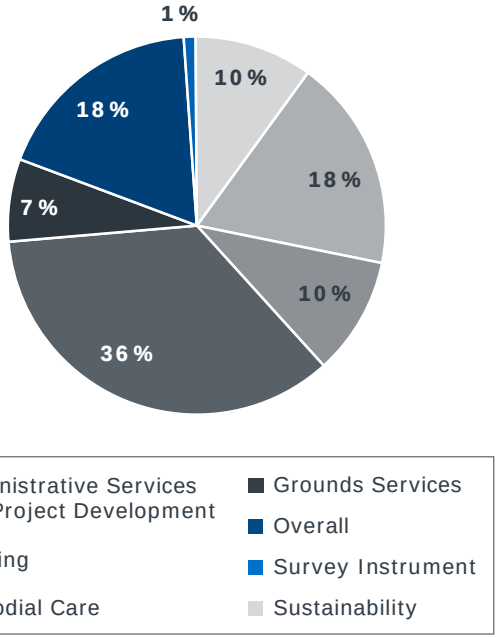
1. Facilities sorts comments by unit. By seeing which unit receives the most comments, Facilities can identify the services most important to customers.

2. Comments are distributed to the relevant unit head, who is tasked with generating a plan to address the comments.

3. Unit heads submit their plans for addressing the comments to the Facilities leader, who approves plans for execution.

NMSU's Comment Themes

Fall 2015



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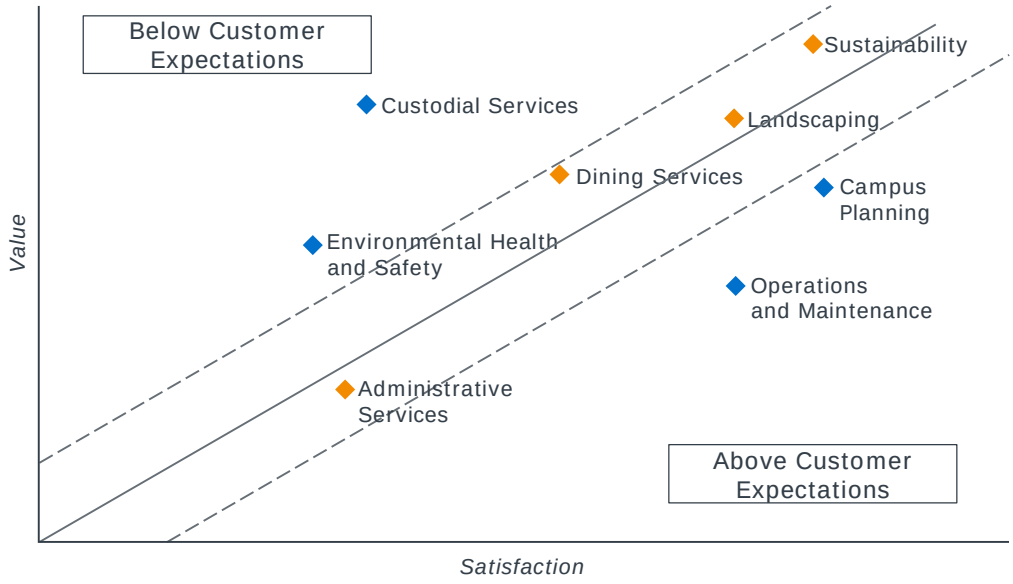
Source: New Mexico State University, Las Cruces, NM; EAB interviews and analysis.

Pinpoint Most Urgent Improvement Opportunities

Proposed Satisfaction and Value Analysis



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Source: EAB interviews and analysis.

1. Select Key Performance Indicators (KPIs)
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More Questions Than Answers

Effective Dashboard Design Critical to Convey Information and Drive Action

Three Major Dashboard Design Mistakes Lead to Stakeholder Confusion

Insufficient Context

Too Much Information

Overly Complex Visualizations

Representative Stakeholder Questions

- *Is the metric above or below the target?*
- *Should the metric increase or decrease?*
- *How does this compare to historical data?*

- *Where should I focus my attention?*
- *What are the most important metrics?*
- *Can you summarize this for me?*

- *What do the different colors mean?*
- *How do I interpret this graph?*
- *What's the difference between the trend lines?*

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Source: EAB interviews and analysis.

Maximizing Dashboard Impact

Characteristics of Effective Dashboard Layouts

Characteristic	Description	Sample Dashboard
Concise	Static dashboards limited to three pages or less; interactive dashboards include drop-down menus or variable inputs to allow audience to display desired amount of information	• Arizona State University • Columbia University • Western Michigan University
Accessible Data Visualizations	Uses visualizations to simplify complex metrics and trends; most effective elements are bar charts, pie graphs, and trend line graphs	• Columbia University • The New School • University of Washington
Metrics in Context	Includes trends over time, performance targets, action triggers, clearly labeled graphic titles, and brief metric definitions when necessary	• Northwestern University • The New School • University of Washington
Directionality	Uses arrows or icons to convey metric trend and/or goal directionality	• Northwestern University • University of Washington
Color-Coded	Deploys color-coding to indicate progress and enhance visualizations; binary color scheme (e.g., red and green) the simplest way to track progress, but multi-chromatic scheme can enable more complex data visualizations	• The New School • Northwestern University • CSU-East Bay
Consistent Time Frame	Clearly indicates time interval for metric collection and assessment; timeframes may differ based on metric type and goal (e.g., monthly work order completion rates, annual customer satisfaction scores)	• Northwestern University • University of Washington • University of Minnesota
Mapped to Strategic Goals	Where possible, maps metrics to broader Facilities themes or goals; some dashboards signal metric owner (i.e., Facilities staff member accountable for metric)	• University of Washington • Northwestern University

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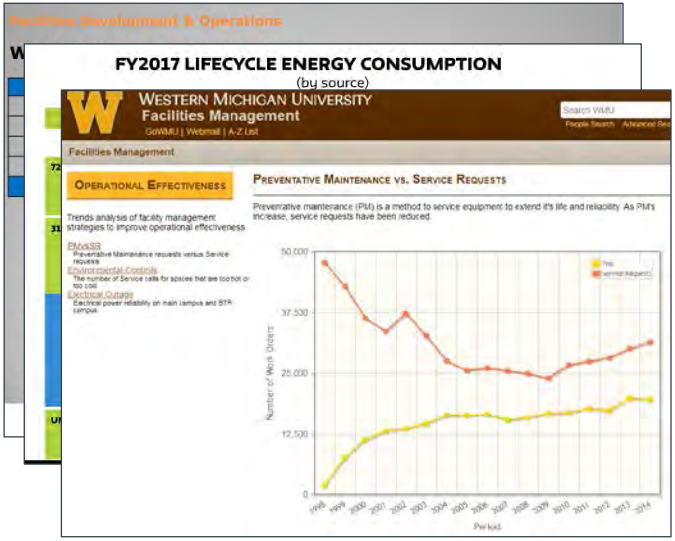
Source: EAB interviews and analysis.

Resources Available Now

Institutional Dashboard Examples to Support Implementation Efforts

Screenshots of Institutional Dashboards



Example Institutional Dashboards Available

Western Michigan University
The New School
Columbia University
California State University East Bay
University of Minnesota
Arizona State University
Northwestern
University of Washington

Access examples of institutional dashboards by clicking on the logos above.

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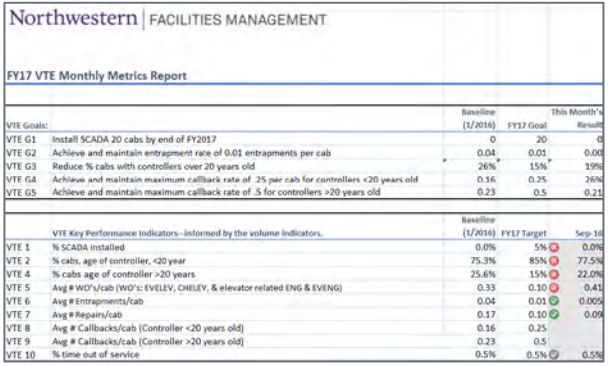
Source: EAB interviews and analysis.

Northwestern University (NU)

NU Relies on Microsoft Suite for Simple Yet Effective Dashboards

Northwestern

Screenshot of Vertical Transportation Equipment (VTE) Dashboard in Excel



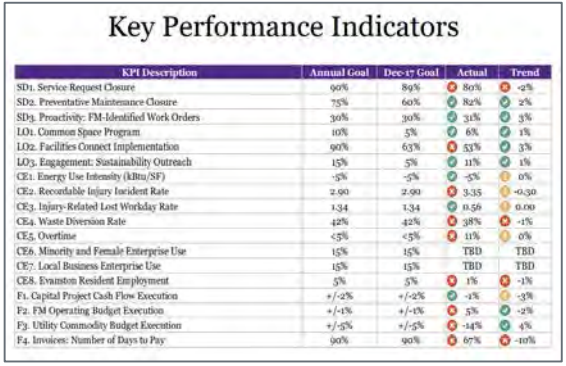
Northwestern | FACILITIES MANAGEMENT

FY17 VTE Monthly Metrics Report

VTE Goals:		Baseline (1/2016)	FY17 Goal	This Month's Result
VTE G1	Install SCADA 20 cabs by end of FY2017	0	20	0
VTE G2	Achieve and maintain entrapment rate of 0.01 entrapments per cab	0.04	0.01	0.00
VTE G3	Reduce % cabs with controllers over 20 years old	26%	15%	19%
VTE G4	Achieve and maintain maximum callback rate of .25 per cab for controllers <20 years old	0.16	0.25	26%
VTE G5	Achieve and maintain maximum callback rate of .5 for controllers >20 years old	0.23	0.5	0.21

	VTE Key Performance Indicators--informed by the volume indicators.	Baseline (1/2016)	FY17 Target	Sep-16
VTE 1	% SCADA installed	0.0%	5%	0.0%
VTE 2	% cabs, age of controller, <20 year	75.3%	85%	77.5%
VTE 4	% cabs age of controller >20 years	25.6%	15%	22.0%
VTE 5	Avg # WO's/cab (WO's: EVELEV, CHELEV, & elevator related ENG & EVENG)	0.33	0.10	0.41
VTE 6	Avg # Entrapments/cab	0.04	0.01	0.005
VTE 7	Avg # Repairs/cab	0.17	0.10	0.09
VTE 8	Avg # Callbacks/cab (Controller <20 years old)	0.16	0.25	
VTE 9	Avg # Callbacks/cab (Controller >20 years old)	0.23	0.5	
VTE 10	% time out of service	0.5%	0.5%	0.5%

Screenshot of Facilities Management Dashboard in PowerPoint



Key Performance Indicators

KPI Description	Annual Goal	Dec-17 Goal	Actual	Trend
SD1. Service Request Closure	90%	89%	80%	-2%
SD2. Preventative Maintenance Closure	75%	60%	82%	2%
SD3. Proactivity: FM-Identified Work Orders	30%	30%	31%	3%
LO1. Common Space Program	10%	5%	6%	1%
LO2. Facilities Connect Implementation	90%	63%	53%	3%
LO3. Engagement: Sustainability Outreach	15%	5%	11%	1%
CE1. Energy Use Intensity (kBtu/SF)	-5%	-5%	-5%	0%
CE2. Recordable Injury Incident Rate	2.90	2.90	3.35	-0.30
CE3. Injury-Related Lost Workday Rate	1.34	1.34	0.56	0.00
CE4. Waste Diversion Rate	42%	42%	38%	-1%
CE5. Overtime	<5%	<5%	11%	0%
CE6. Minority and Female Enterprise Use	15%	15%	TBD	TBD
CE7. Local Business Enterprise Use	15%	15%	TBD	TBD
CE8. Evanston Resident Employment	5%	5%	1%	-1%
F1. Capital Project Cash Flow Execution	+/-2%	+/-2%	-1%	-3%
F2. FM Operating Budget Execution	+/-1%	+/-1%	5%	-2%
F3. Utility Commodity Budget Execution	+/-5%	+/-5%	-14%	4%
F4. Invoices: Number of Days to Pay	90%	90%	67%	-10%

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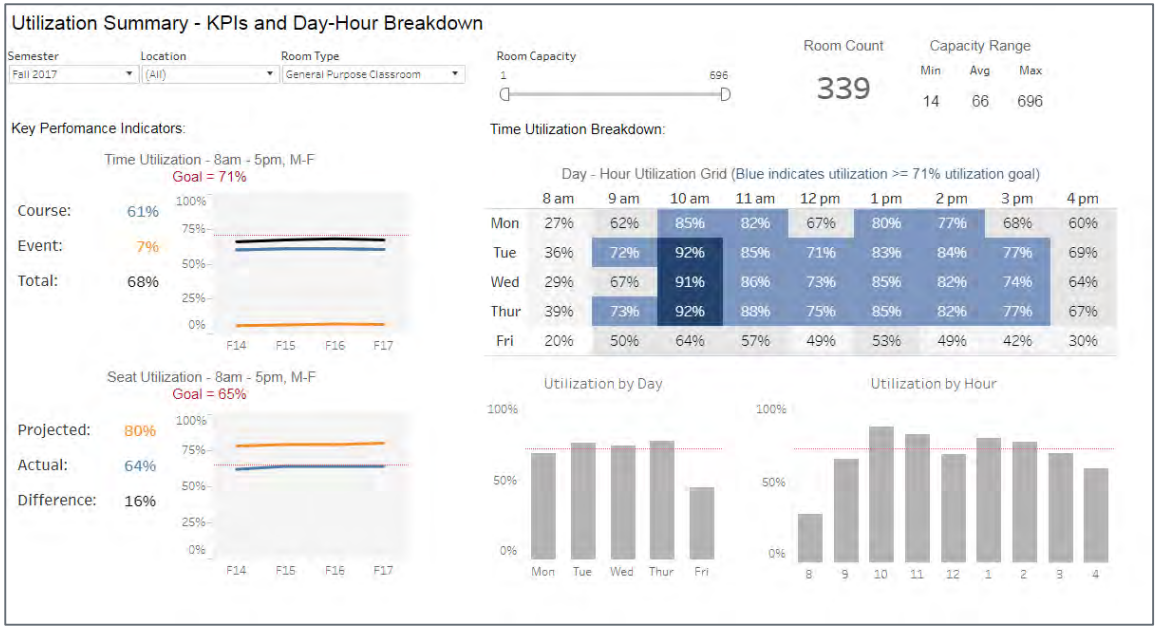
Source: Northwestern University Key Performance Indicators, Northwestern University, Evanston, IL; EAB interviews and analysis.

University of Minnesota (UMN)

UMN Uses Tableau for Interactive Classroom Utilization Dashboard

UNIVERSITY OF MINNESOTA

Screenshot of UMN's Classroom Utilization Dashboard



Source: University of Minnesota Classroom Utilization Dashboard, University of Minnesota, Minneapolis; MN; EAB interviews and analysis.

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Columbia University (CU)

External Software Generates CU's Interactive, Public Sustainability Dashboard

Screenshots of Columbia University's Sustainability Dashboard

Source: Columbia University Building Dashboard, Columbia University, New York, NY; EAB interviews and analysis.

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1. Select Key Performance Indicators (KPIs)
2. Gauge Performance Through Customer Service Metrics
3. Employ User-Friendly Layout and Format
4. **Set Principled Targets and Action Triggers**

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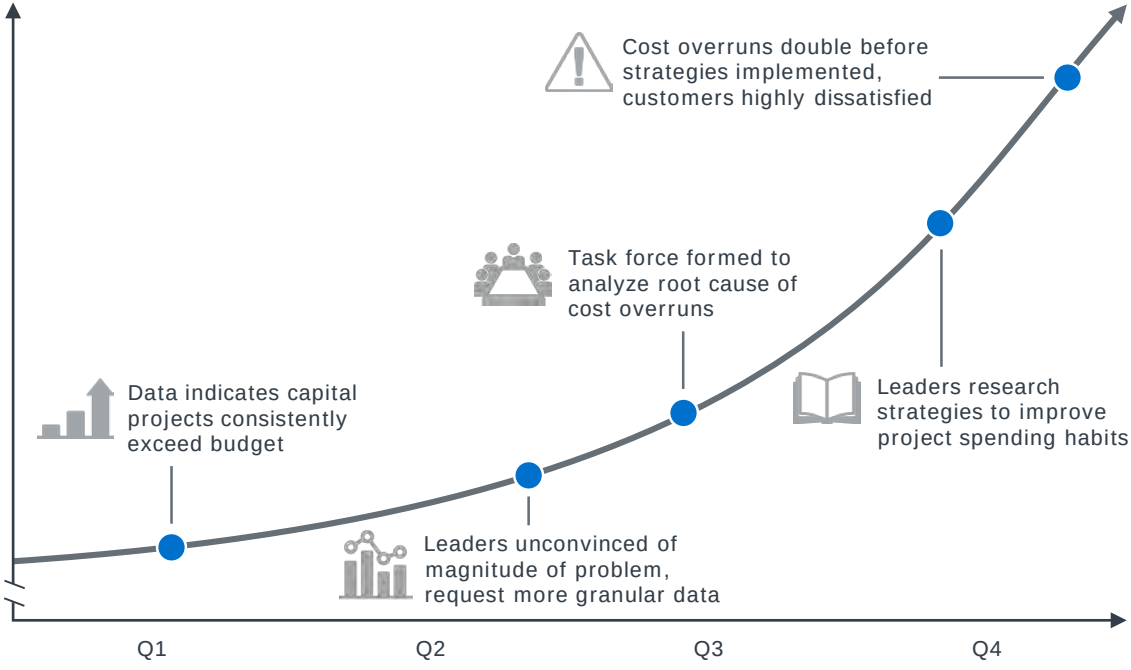
Analysis Paralysis

Data Alone Does Not Force Action

Capital Project Cost Overruns Double at Representative Institution



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Source: EAB interviews and analysis.

Differentiating Targets and Triggers

Targets Drive Performance on Metrics, Triggers Mandate Corrective Action

Performance Target

Definition

Fixed or ranged performance goal set by leaders each year

Purpose

Provides concrete goals and drives performance on core metrics

Example

Performance target to complete **90%** of monthly preventive maintenance (PM) work orders

Action Trigger

Definition

Threshold that signals underperformance on core metrics and mandates corrective action

Purpose

Clarifies when corrective action is required to maintain minimum performance levels

Example

Action trigger to intervene if monthly PM work order completion rate dips below **60%**

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Source: EAB interviews and analysis.

Performance Target Options

Four Main Options for Setting Metric Targets

Institutional Mandate

Defer to institutional or compliance requirements when applicable (e.g., carbon footprint reduction, workforce diversity, safety and compliance)

Benchmarks

Leverage industry association standards (e.g., APPA, FEA[1]), peer performance, and regional standards (e.g., construction costs for local businesses)

Continuous Improvement

Establish ambition to continually improve metric within defined timeframe (e.g., monthly, quarterly)

Crowdsource with Staff

Rely on frontline staff expertise to establish aspirational yet realistic metric goals

1) Facility Engineering Associates.

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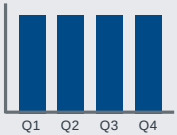
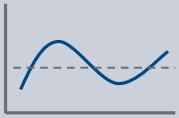
Source: EAB interviews and analysis.

Action Trigger Options

Type of Action Trigger Dependent on Metric Goal

Three Types of Action Triggers

Trigger Type	Definition	Benefits	Limitations
Specialty Triggers 	**Static action triggers** mandate continuous improvement to guard against performance plateaus (e.g., "lack of improvement" as a trigger)	Easy to calculate and manage against	May be perceived as unprincipled and therefore ignored by stakeholders
	100% triggers signal metrics that demand perfect performance (e.g., employees completing safety training)	Avoids significant negative consequences	Only applicable for specific metrics (e.g., safety, compliance)
Fixed Triggers 	Minimum performance thresholds designed to guard against significant performance declines that, without corrective action, would likely cause units to miss non-negotiable targets (e.g., trigger for a board-mandated budget cap)	Easy to calculate and communicate	Not applicable for many Facilities metrics
Relative Triggers 	Self-adjusting thresholds that consider current performance relative to the target, past performance, and/or related metrics to identify concerning trends (e.g., average parking shuttle wait time)	Applicable for a wide range of metrics; self-adjustment ensures longevity	More complex and difficult to manage than other triggers

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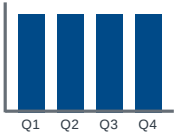
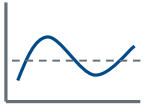
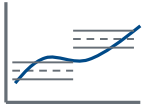
Source: EAB interviews and analysis.

Tool: Action Trigger Diagnostic

Questions Help Leaders Identify Appropriate Trigger Type

Trigger Type	Questions	Yes	No
Specialty Triggers 	1. Is continual improvement (regardless of degree) in metric performance a strategic priority? 2. Is it a strategic priority that metric performance be at 100%? *If "no" is answered for both questions, continue to questions 3-4. If "yes" is answered for either question, then static or 100% trigger is most appropriate.*	☐ ☐	☐ ☐
Fixed Triggers 	3. Are you working toward an absolute (and non-negotiable) target? 4. Are you guarding against exceeding an absolute (and nonnegotiable) cap on performance? *If "no" is answered for both questions, continue to questions 5-8. If "yes" is answered for either question, a fixed trigger is most appropriate.*	☐ ☐	☐ ☐
Relative Triggers 	5. Are you seeking to identify when current performance deviates significantly from past performance? 6. Are you seeking to detect statistically significant performance trends? 7. Are you seeking to routinely compare a metric's current performance against cumulative performance towards target? 8. Are you seeking to uncover simultaneous changes in performance among related metrics? *If "yes" is answered for any question, then establish a relative trigger.*	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

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Source: EAB interviews and analysis.

Next Steps

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Use Handout to Create Dashboard Starter List

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Facilities Forum

Creating a Starter List of Facilities Metrics

Prompts for Facilities Leaders to Pinpoint Areas of Opportunity

As colleges and universities continue to become more data-driven, Facilities leaders have been tasked with managing and tracking an unprecedented amount of data. However, many institutions struggle to translate reams of data into valuable information that drives operational improvements. To address this, Facilities divisions are taking steps to build an operational dashboard that focuses attention and efforts on 15 to 20 Facilities Management metrics.

There are hundreds of potential metrics institutions might include in the dashboard. The goal of this handout is to guide leaders through a series of prompts to help them identify likely metrics within their function/team. The senior Facilities officer (SFO) or another leader will compile these metrics together, then use the list as a starting point to whittle down to the right 15 to 20 metrics.

The graphic below outlines a representative metric selection process from start to finish, including corresponding EAB resources.

Representative Metric Selection Process

Source: EAB interviews and analysis.

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Prompts to Identify Facilities Metrics

Questions Aim to Source Challenges, Opportunities for Facilities Dashboard

1. Consider the scope of your role and your team's role. What business challenges do you currently face? For instance, struggling to prioritize scheduled work orders over on-demand service calls, or unhappy customers. List three to five challenges below.
   1.
   2.
   3.
   4.
   5.
2. For each challenge, reframe as an opportunity for improvement. Examples: improve customer satisfaction, improve work order turnaround time, increase wrench time, increase employee engagement.
   1.
   2.
   3.
   4.
   5.
3. Convert each opportunity into a specific metric. When selecting the metric, consider:
   - Is it measurable? Do we currently have a way to track and measure the metric?
   - Can we improve our performance on this metric?
   - If I shared this metric with frontline employees, would they focus on the right activities? (Some metrics, such as cost per work order, have a perverse incentive to do the cheaper fix and relog more expensive work for later. Avoid metrics that may unintentionally lead staff to achieve the right outcome the wrong way.)
   1.
   2.
   3.
   4.
   5.

Source: EAB interviews and analysis.

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