



Who Should Read

CIO

IT Leaders

IT Staff

Data-Driven Approaches to Sunsetting Technology

Leveraging Metrics to Enable Principled
Technology Divestment

IT Forum

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Introduction and Roadmap

SECTION

1

- The Sunsetting Imperative
- The Role of Data
- Roadmap

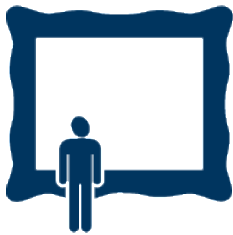
Helping Campus Kick the Legacy Tech Habit

A Mounting Technology Stack...

The proliferation of technology in higher education has turned the IT organization into a critical campus enabler. Almost every project on campus today is an IT project, requiring some input or guidance from technology leaders in both implementation and continued support.

While IT shoulders these new projects and technologies, leaders across campus - and sometimes IT staff themselves - remain reluctant to part with older, less efficient technologies and applications. As a result, IT is stuck supporting layers of aging and redundant technologies that continue to mount year after year.

The Technology Museum



"I'm running a technology museum. I have one of everything that's been released since 1980. In fact, no. I have more. I wish I had just one of everything."

CIO

Large Public Research University



...and an Unstable Foundation for the Future

However, IT leaders know that holding on to all that technology creates unnecessary risk for the organization. Legacy technologies and duplicative applications present security risk, cost more to maintain, and limit capacity for digital transformation initiatives.

Moreover, the increasing dependence on vendors for supplying so many campus systems and capabilities adds new urgency to the need for continual refinement of the technology portfolio. Indeed, where vendors stop supporting services or go out of business entirely, IT bears the brunt of a hasty transition - pulling time, energy, and investment from more fruitful pursuits. Therefore, IT leaders must remain vigilant in assessing third-party contracts for technical viability and campus value.

The Risky Business of Unfettered Technology Support

Legacy Technologies

Case example

20 million current and former federal government contract workers' data stolen from 30-year-old OPM mainframe in 2015.



Third-Party Vendors

Case example

End of vendor support for document management system at public research university required IT to convert **15 million documents and 2,500 users**.

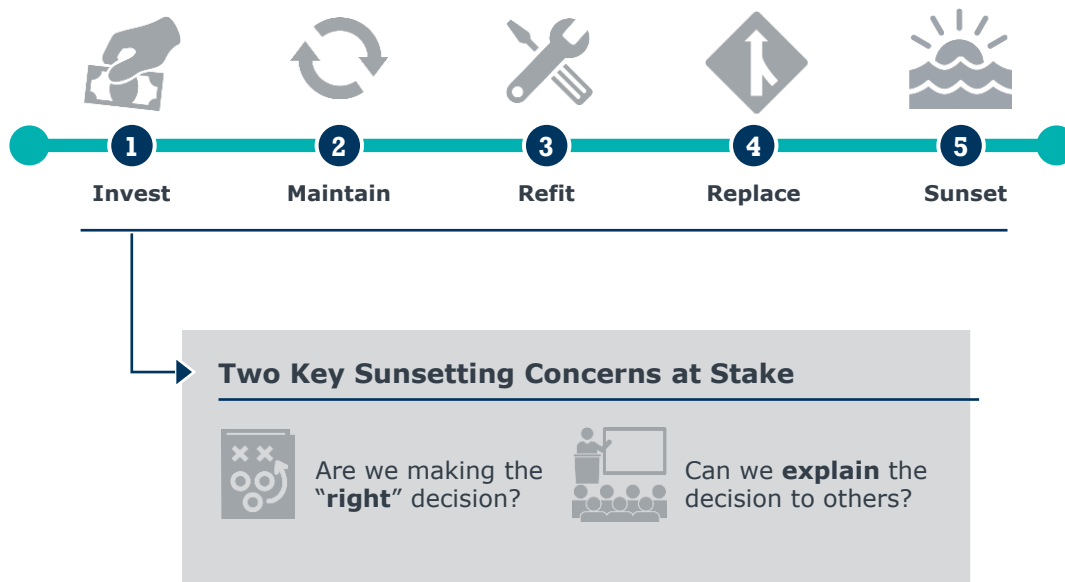
From Qualitative Discussion to Quantitative Analysis

Nuanced Options for Tech Provisioning Creates Complexities...

The sunsetting imperative is compounded by the fact that IT leaders are not making clear-cut decisions. Rather, they face a spectrum of choice in technology investment decisions. To add to that complexity, rarely does IT serve as the sole arbiter or stakeholder in decisions surrounding technology investment and divestment. Decommissioning usually involves some aspect of “making the case” to others across campus – either in advance of the decision to convince primary users and campus leaders of the necessity, or in the fall out of navigating change among a broader group in the campus community.

Data, then, can ensure that the IT organization takes the *right* approach for the specific technology decision under consideration and communicate that to campus.

Technology Investment Options



...That are Clarified by Numbers

When considering sunsetting decisions for technologies with little technical issues, IT leaders should principally analyze two inputs: **cost data**, and **value data**. The crux of sunsetting lies in the middle of those two pieces: does the value of this product justify its costs?

The Data to Break the Deadlock



A Roadmap to This Brief

Practical Solutions Drive Sunsetting Decisions on Any Campus

Sunsetting initiatives leverage a data-driven and transparent approach, and if successfully implemented, can help IT leaders recoup significant costs and promote a more rational IT ecosystem. To facilitate your sunsetting efforts, this document outlines the underlying problems and creative solutions behind decommissioning initiatives at different institutions during the IT Forum’s research. Profiled tactics are arranged into three strategic domains to help IT leaders conduct effective cost-value assessments and prepare their constituents for change.

Gathering Data



Turn to **p. 7**

- Opportunity TCO Analysis (p. 8)
- Tech Utilization Hacks (p. 10)
- Holistic Value Scorecard (p. 11)

Sunsetting Decision Frameworks



Turn to **p. 12.**

- Ordinal-Ranked Value Ratios (p. 14)
- Outcome-Oriented TIME Matrix (p. 15)

Hallmarks of Navigating Change



Turn to **p. 16.**

- Sunsetting Communication Template (p. 17)
- Intentional Off Days (p. 18)
- Solution Lifecycle Template (p. 19)
- Decision Monuments (p. 20)



Gathering Data

Substituting Subjectivity with Rigor and Data

SECTION

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- Tactic #1: Opportunity TCO Analysis
- Tactic #2: Tech Utilization Hacks
- Tactic #3: Holistic Value Scorecard

The Increasing Complexity of Cost Analyses

A Complicated Cost Environment Only Grows More Complex

In theory, cost data should be the simpler side of the equation. Traditionally, IT organizations have measured cost with relatively standard metrics: hardware costs, software costs, operations and maintenance costs, etc. But the nature of these costs continues to change. With the cloud, many traditional cost buckets have moved, presenting new considerations that complicate calculations.

As a result, IT leaders may struggle to pinpoint a concrete number at all. As one university considered moving their ERP to the cloud, they found the cost differential estimate was “within 50%-200% increase in costs” – a massive variance that prevents any meaningful decision-making.

IT Costs Getting Softer



Software Licensing Fees

Do we have good knowledge of year-on-year subscription fees?



Advisory and Support Services

How much are we spending on add-on vendor and consultant services?



Cloud Infrastructure

Do we know the latent and surge costs for hosted capacity?







IT Org Personnel and Labor

How much time and effort do our staff spend on this product?

Remove Uncertainty with Tried and Tested Analyses

However, calculating cost for your *current* technologies and applications often need not differ from the cost analyses conducted for *new* technologies and applications. IT leaders analyzing the costs associated with a given technology in a decommissioning initiative should employ the same framework used to determine total cost of ownership (TCO) in purchasing decisions. Those TCO frameworks should incorporate the following hallmarks.

Hallmarks of an Effective TCO Sheet

-  Built on campus use cases
-  Quick speed to completion
-  Incorporates on-prem and cloud models
-  ~80% costs included

Value Measurements Expose Our Biases

People are Irrational, and their Ties to Technology are Too

The real catch in sunsetting is that once people own or use a technology, there are many forces at play making them reluctant to part with those technologies. Everyone on campus experiences emotional drivers that get in the way of making purely rational decisions about the technologies that they use.

This also extends to making rational determinations of value. The emotions of ownership tend to muddle users' assessment of the tools that they use, rendering objective comparison unlikely. As a result, CIOs across industries often fail to measure the actual value of their technology investments.

The Emotions of Ownership...



... Leaves CIOs Struggling to Develop Fair, Repeatable Processes

21% Of CIOs report having a structured process for measuring the value of tech investments

14% Of CIOs do not measure the impact of technology investments at all

Understanding Campus Consumption

Discovering Waste at the Margins: Webster University Looks Inward to Assess Usage

It's often the case that campuses are all in on technologies that few members of campus actually use. IT leaders make good-faith investments on the *perceived* value of a tool, but then once invested there's usually little effort to determine whether the perceived value matches the *actual* value. Tracking usage may provide IT leaders with the relevant rightsizing information, but the data is not always readily available.

Enterprise licensing for software products on campus may present a particularly tricky manifestation of this, as some vendors may remain reluctant to share that information – particularly if it means you're going to use the information to reduce your costs. So how do you find the usage data?

At Webster University, the identity and access management team developed a single sign-on rerouting protocol for all downloads and log-ins to the software in question. This meant that IT could track all users accessing the service, and subsequently use those numbers for rightsizing.

A Homegrown Fix...

Are We Over-Investing in Universal Licensing?

\$460K

Cost of enterprise license for campus-wide digital image and .pdf editing software



Usage rates unknown after purchase; nobody tracking adoption or engagement

1



CIO sought **data on program usage** to identify software utility

2



Software **vendor unwilling to share the data**, raising CIO's suspicion of software utility on campus

3



Team develops a single sign-on for the software, **rerouting all users through university's website**

4



Single sign-on redirect allows IT team to **track the number of users** logging on to use the software

...Leads to Effective Rightsizing for the IT Organization

400



Actual users identified across campus, at a cost of over \$1,000 per user

250



Number of a-la-carte licenses after CIO negotiated changes to the vendor contract

\$300K



In savings for the IT organization based on the negotiated contract

Implementing a Holistic Review

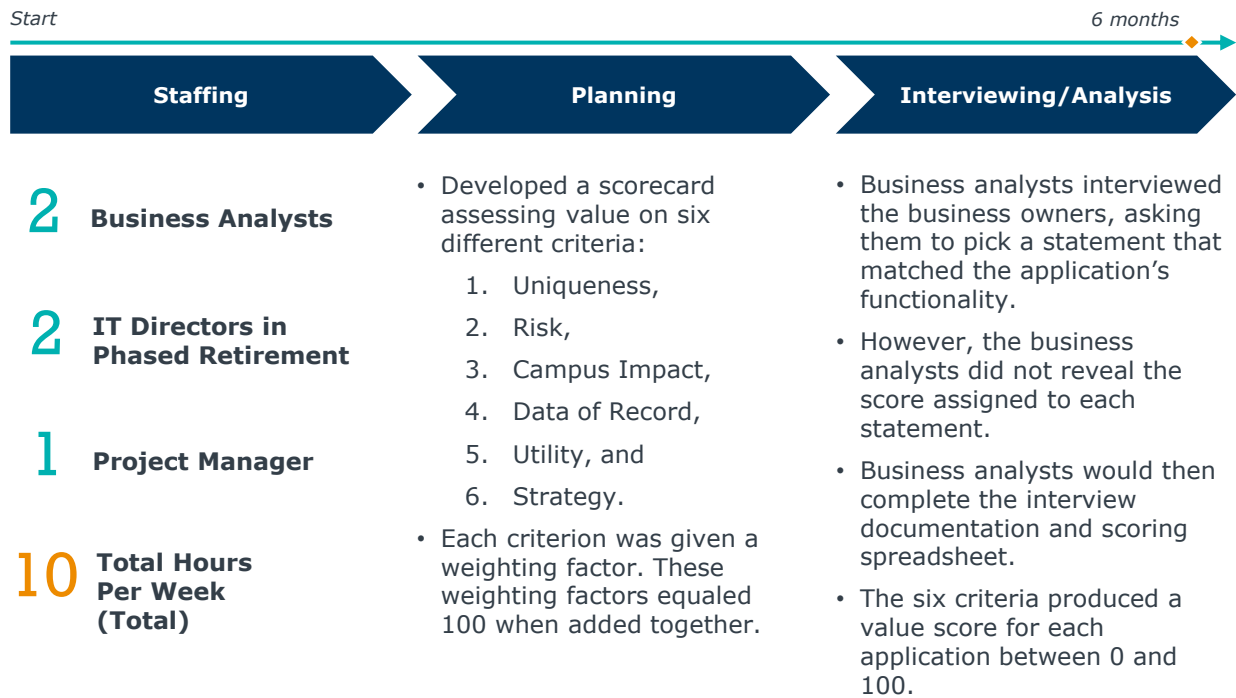
When Usage Isn't Enough: Cornell University Employs a Holistic Value Assessment

While usage metrics are undoubtedly important data points, they can also be deceptive in their simplicity. When it comes to thinking more holistically about "business value," IT leaders enter a much more nuanced conversation. For example, a tool might have just one user – but if that user is the President, IT leaders may face an uphill battle.

While users are most familiar with the tools and best positioned to assess value holistically, they will likely struggle to make objective assessments.

Recognizing this, a five-person group at *Cornell University* created a value scorecard to measure applications based on six different criteria. Business analysts conducted interviews with users, asking them to select objective statements that best matched the application's functionality. This value scorecard allowed the IT organization to understand the objective value of those applications to the university's technology stack. **For a full example of the template, please see the appendix.**

A Novel Process Based on Objectivity...



...Yields Impressive Results



Summary of results:

- 28** Units reviewed
- 1,100** Applications inventoried
- 700*** Applications scored

* Those applications not scored cost the university less than \$500 per year to maintain

Source: EAB interviews and analysis; David Koehler, "Taming Application Sprawl," *Educause*, April 2015



Sunsetting Decision Frameworks

Illustrations to Break the Gridlock

SECTION

3

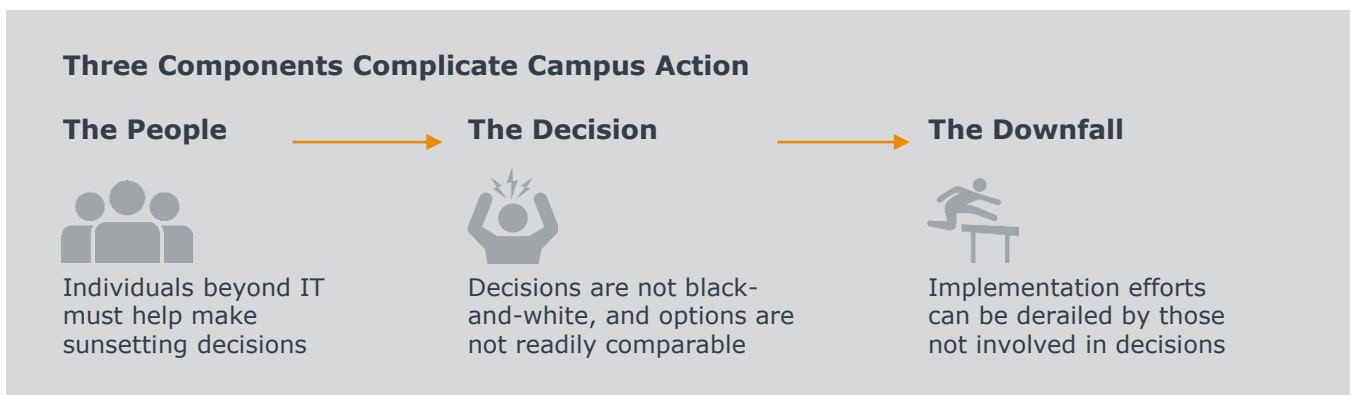
- Tactic #4: Ordinal Ranked Value Ratios
- Tactic #5: Outcome-Oriented TIME Matrix

The Complexity of Decision Making in Higher Ed

IT's Secret Weapon: Comparative Frameworks as a Leveling Device

The collaborative decision-making process of colleges and universities means that when it comes to sunsetting a technology, multiple stakeholders must be brought into the process – many of whom likely reside outside of IT and may even own the final decision. In those situations where IT is the advisory consultant, building consensus can sometimes feel impossible.

Facing these kinds of issues, IT leaders will better set themselves up for success if they come prepared with a comparative framework to facilitate the decision-making.



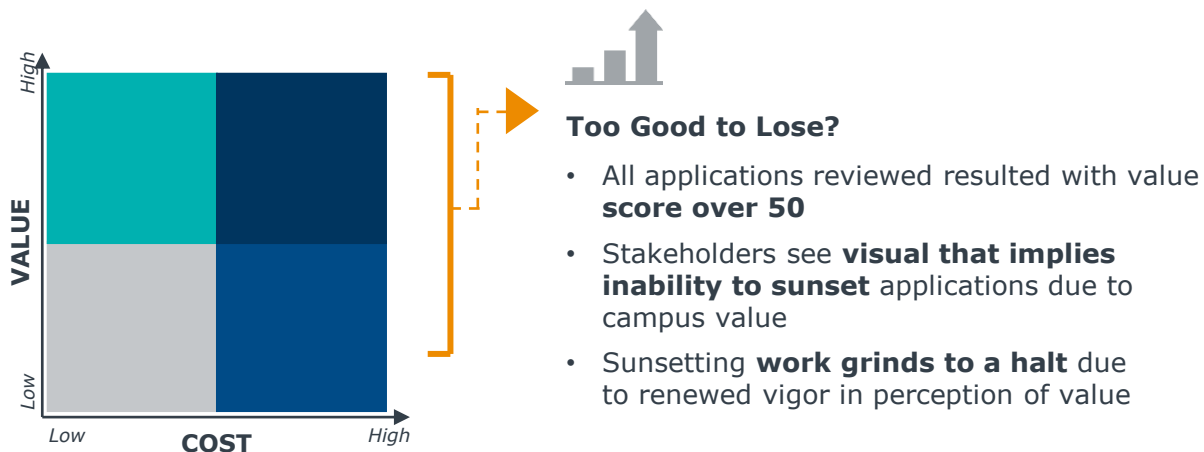
Getting Creative with Frameworks

Guiding Constructive Conversation with Different-in-Kind Data Visualizations

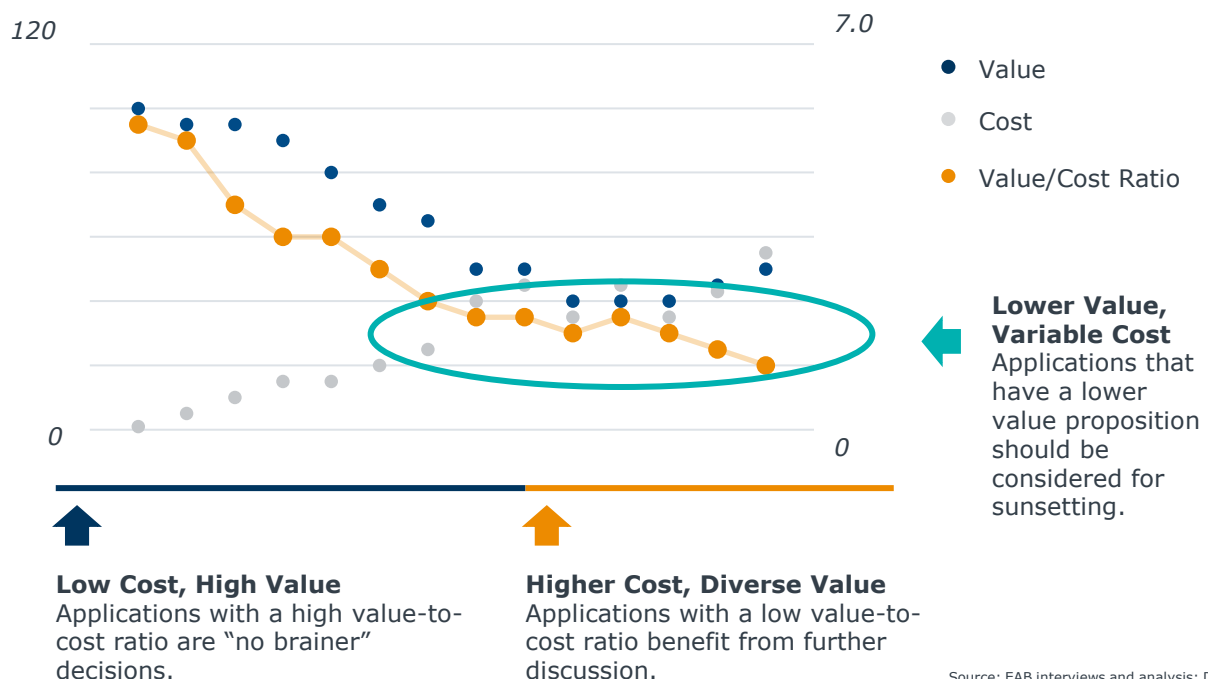
IT leaders at *Cornell University* initially plotted the collected cost and value data against a grid recommended for application portfolio management (APM) – directly measuring cost against value. However, all applications were set in the top right of the quadrant, reinforcing the idea that all applications were necessary for campus to maintain.

To change perception, they then created a forced ordinal ranking of the systems they had audited by taking the normalized 0-100 cost and value metrics and using them to create a cost:value ratio score. In doing so, they provided a form of forced prioritization across multiple applications that helps IT and their peers focus on the most fruitful use cases for sunseting .

Application Portfolio Management Matrix Insufficient



Cost, Value, and Cost-to-Value Plotted to Facilitate Comparative Discussions





Accounting for Technical Viability

TIME Assessments Highlight Underlying Technical Concerns

In many cases, IT leaders will seek to decommission technologies or applications due to technical reasons. This type of analysis is rooted in risk and security, rather than in cost and value. These decommissioning endeavors may confuse colleagues across campus, leaving them to wonder – “why are you taking this away? I really like it!” It’s vital then to have a framework to explain IT leaders’ rationale and the underlying technical considerations in more digestible terms.

For this type of analysis, IT leaders should consider the TIME matrix. TIME stands for “Tolerate, Invest, Migrate, and Eliminate” and measures technical value directly against business value.

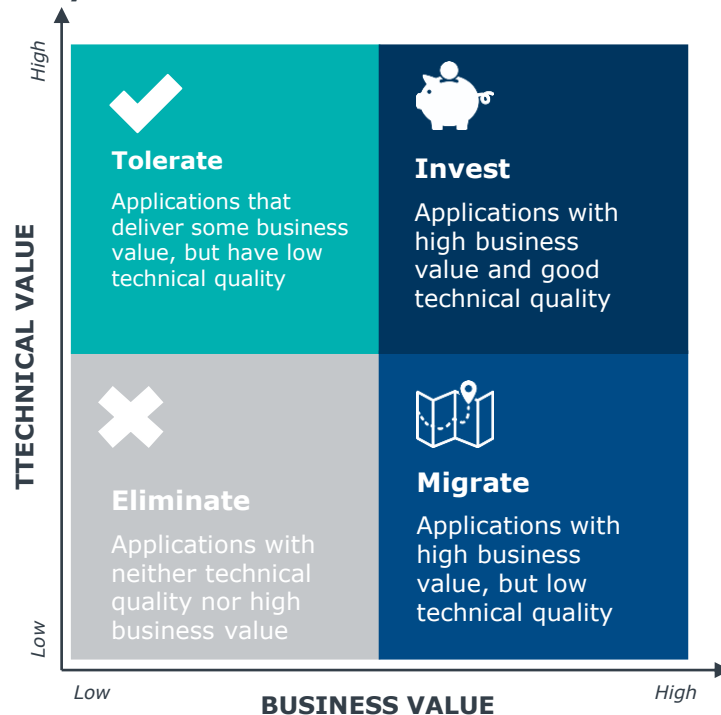
Sample Technical Viability Inputs



TIME in Action: The University of Michigan Wrangles Technology Sprawl

At the *University of Michigan*, the IT organization conducts TIME assessments to further sunsetting efforts. IT leaders from across campus meet to discuss all technologies relevant to a given business need (e.g., room scheduling), and after consideration of each tool, reach a consensus about where each fits on the TIME grid (stylized below). Administrators report this quick analysis subsequently allows IT leaders to effectively illustrate the technical basis for sunsetting decisions to campus.

TIME Technologies Analysis



Source: EAB interviews and analysis; “Room Scheduling Technology”, University of Michigan, September 2016



Hallmarks of Change Navigation

Memorializing Decommissioning to Prepare Campus for Tomorrow

SECTION

- Tactic #6: Sunsetting Communication Template
- Tactic #7: Intentional Off Days
- Tactic #8: Solution Lifecycle Templates
- Tactic #9: Decision Monuments

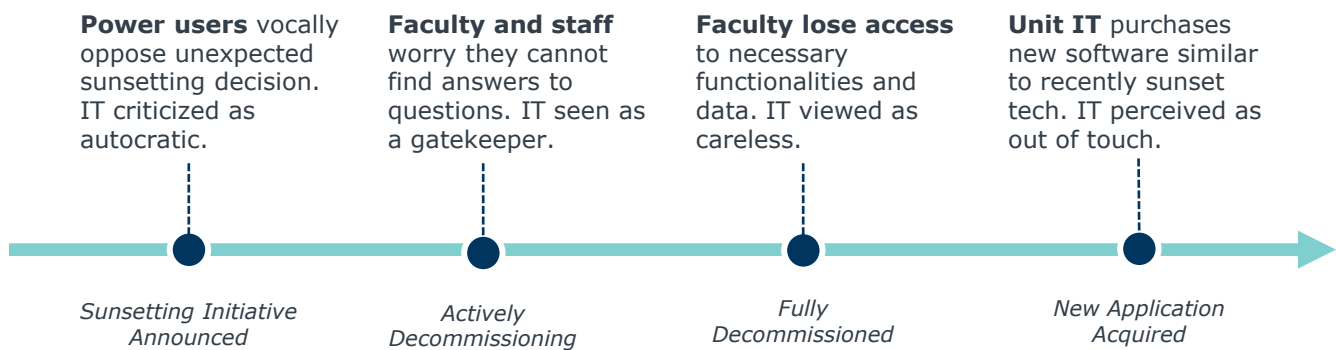
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Engineering the Right Climate for Change

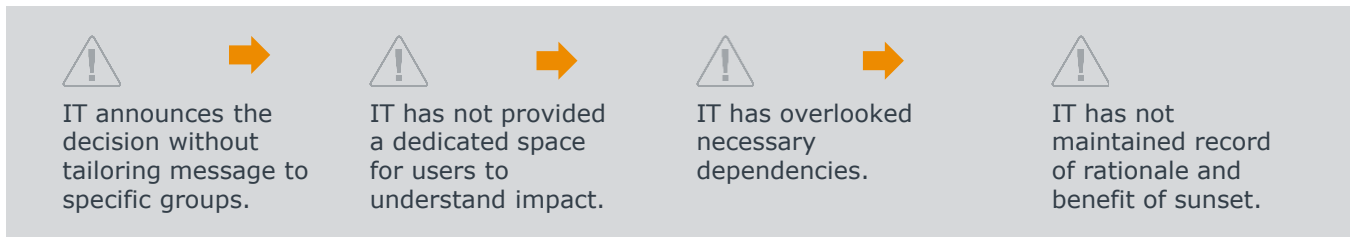
Managing Emotions During Times of Technology Transition

IT leaders charged with sunsetting initiatives must recognize that how and when you tell people you're taking something away will significantly impact your ability to create lasting change. Project leaders must ensure that they are delivering the right message, to the right people, through the right channels, at the right time.

Multiple Failure Points Loom Over Sunsetting Endeavors



What's Not Working?



“

“If you’ve done this correctly, when someone in the community complains and they look for someone to commiserate, it declines rapidly because they don’t find anyone.

You want the complaints to attenuate, so that when the curmudgeon starts rabble-rousing, there’s no rabble. **It’s more sociological dynamics rather than a technology decision.**”

EVP for IT and CIO
Large Public Research University

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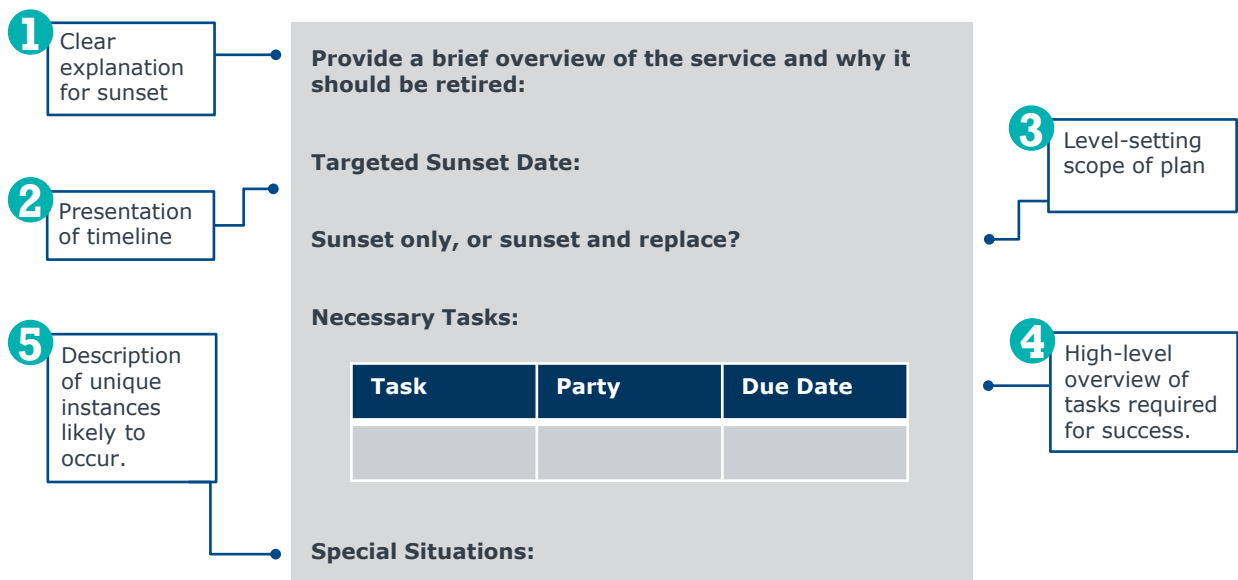
Building an Effective Communication Plan

Principled Communication Begins by Documenting Steps and Building Accountability

Before beginning a sunsetting process, IT leaders should ensure that they communicate with the right people at the right time. During the sensitive process of sunsetting, confusing users and failing to deliver on promises can make matters worse and damage the image of the IT organization.

A framework for communicating those decisions and building accountability into staff workflow will help mitigate for both of those possibilities.

Template: Technology Sunset Plan at Stanford University



Example: Transitioning Stanford AIM to Cisco Jabber

Audience	Objective + Key Message	Communication Channels	Delivery Timing	Roles and Responsibilities
UIT Stakeholders	General awareness: what's coming and its impact, why we're making the change	Email to service desk director and manager.	February 1, 2016	Draft coordination: Jo-Ann Approver/sender: Jesse

Objectives of messages laid out to focus on outcomes.

Appropriate channels of communication identified.

Accountability for creation and delivery documented.

Source: "Service Retirement" Stanford University; EAB interviews and analysis.

Demonstrating Change to Users

Strategically Turning Systems Off to Communicate Changes

Principled Communication Begins by Documenting Steps and Building Accountability

To make sunsetting “real” for users, IT leaders may consider turning the application or technology off for a day, or a structured period of time (e.g., two days per week for a month). While less suitable for mission critical technologies and applications, this allows IT leaders to accomplish two goals for sunsetting smaller technologies and applications:

1. To demonstrate to users how the impending change will affect them, and;
2. To surface for IT leaders unexpected dependencies or issues that may arise across campus when the technology is turned off in full.

IT leaders should publicize this step as a part of the process and ensure users have a simple channel to voice issues or concerns that stem from an intentional shut off.



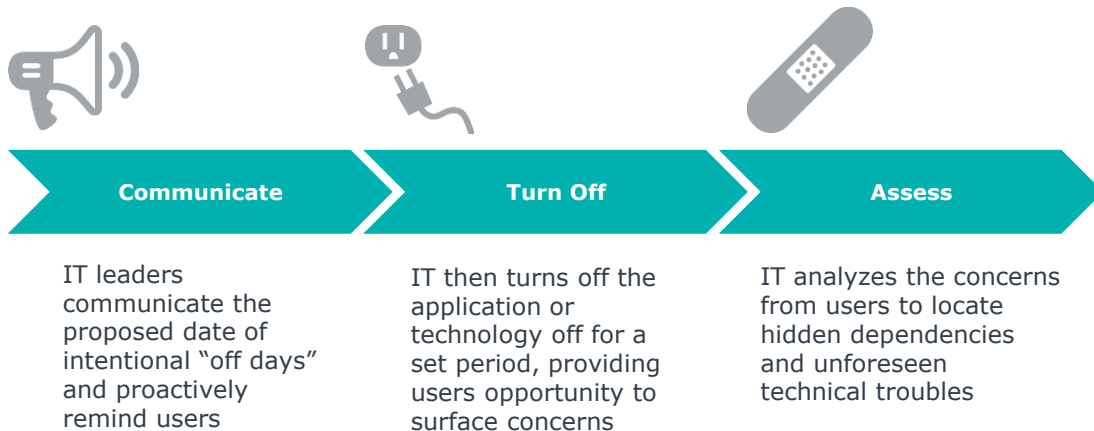
“We’re pretty lenient with our customers. When we want to sunset something, we tell them far in advance. We communicate repeatedly through that process.

But, we inevitably get all the clean up from the people who didn’t listen or didn’t believe us.”

EVP for IT and CIO
Large Public Research University



Intentional “Off Days” Help IT Identify and Communicate Sunset Repercussions



Works for smaller systems, to bring unidentified users and dependencies to light.



Won’t discover jobs or dependencies that run less frequently than daily.



Solution Lifecycle Communications

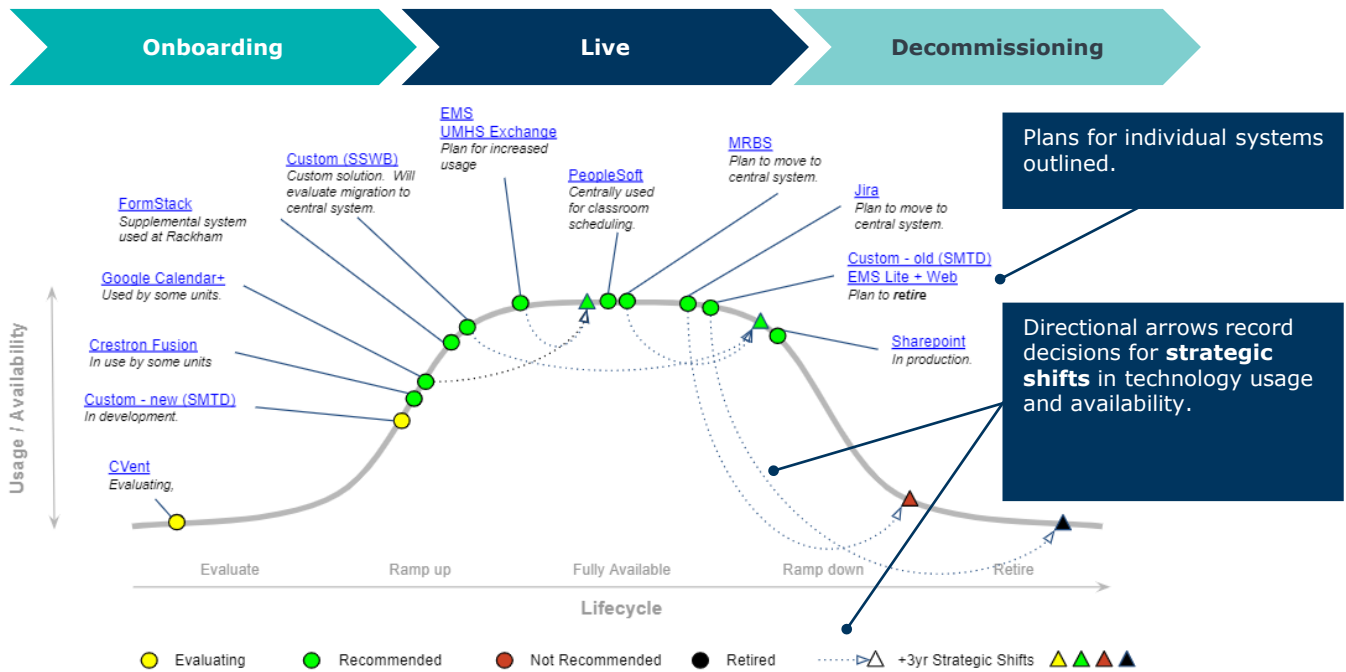
MESA Templates Document Present, Past, and Future Plans

MESA Templates Document Present, Past, and Future Plans

The *University of Michigan* employs “Michigan Strategic Enterprise Assessments” (MESAs) to record intentional strategic shifts in technologies across campus, from onboarding through decommissioning. The templates allow the IT organization to make clear, in one place, the plans for individual systems on the solution lifecycle. Colleagues across campus may consult the template to understand which technologies they should be adopting, and which should be let go. IT leaders limit the template to one page to ensure that campus partners can easily identify plans for their technologies.

The MESA template itself requires relatively little effort from the IT organization and can save significant time placating users when sunsetting ultimately occurs. Working with enterprise architects, MESA templates require two to three meetings with IT leaders on an annual basis and one to three hours to fill out.

Room Scheduling Solution Lifecycle at the *University of Michigan*



Room Scheduling Solution Lifecycle at the *University of Michigan*

<h1>1</h1>	Slide limit per initiative	<h1>2-3</h1>	Meetings to review scope	<h1>1-3</h1>	Hours to fill out MESA document
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Source: “Michigan Enterprise Strategic Assessments”, University of Michigan; EAB interviews and analysis.

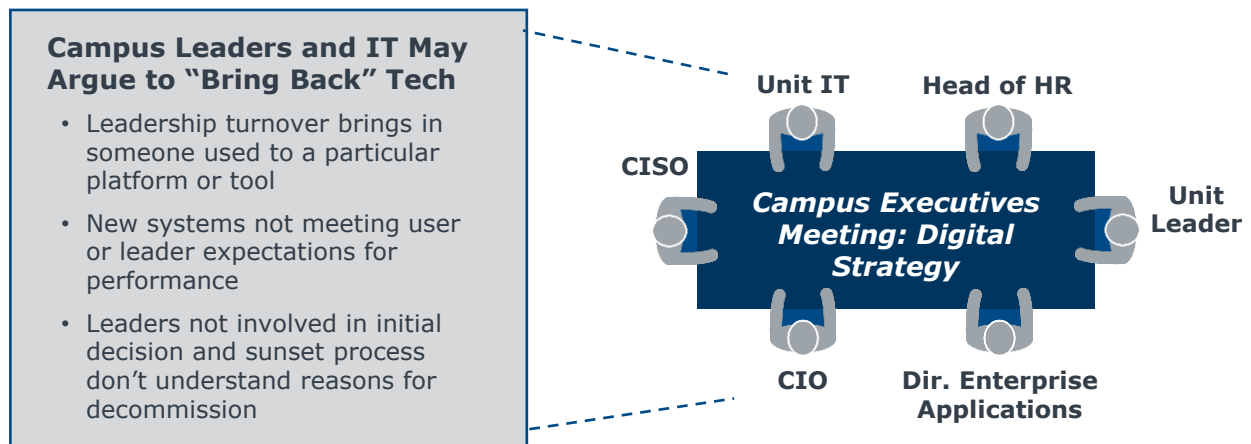
Memorializing Decommissioning

Don't Let Technology Come Back From the Dead

Finally, IT leaders must recognize that the institution may seek to bring back sunset technologies. Either IT fails to root out a technology completely or a conversation is triggered on campus (e.g., leadership turns over, dissatisfaction with new systems) launching people to express interest in a tool they had in the past.

To combat this, *North Carolina State University* has developed “tombstones” and “pickle jars” to memorialize decommissioned technology. This serves to remind leaders when and why they decommissioned technologies, and to guide them in future decisions.

Sunset Technologies Live to See Another Day



Decision Monuments at *North Carolina State University*

“Tombstones” Memorialize Past Value

Commemorating Homegrown Solutions

- What was the tool or technology?
- Who developed the solution for the institution?
- Why was the tool decommissioned?
- Where can users access related content?
- How should users access similar functionality?



Ensures endurance of value by acknowledging solution's contribution.



Helps users “say goodbye” through value storytelling.

“Pickle Jars” Preserve Technical Information

Preserving Knowledge for IT

- What was the tool or technology?
- Why was it sunset (e.g., risks, costs, usage)?
- What were the tool's capabilities and functions?
- Who were the primary users, and what do they use now?
- What data was retained, and where does it live?



Formalizes internal knowledge capture and records retention.



Codifies technical information and sunset logic for IT audience.

Source: Jason Ronallo, “Strategies for Portfolio Management and Decommissioning Projects”, NC State University, 2017; EAB interviews and analysis.



Appendix

SECTION

5

- Tactic #3: Holistic Value Scorecard Template

Holistic Value Scorecard Template

Instructions: Ask a dedicated business analyst to interview business owners about a given technology, asking them to pick one statement per factor that best describes the application's functionality, without revealing the weight assigned to each statement. Sum the total of selected weights for each of the six factors below to produce a value score for each application between 0 and 100. The value scores can be used in conjunction with costs to determine opportunities for sunseting.

Technology Name:

Factors	Application Business Value Criteria	Weight	Select (x)	Result Score
Risk: Is this application necessary to meet regulatory requirements or minimize institutional risk?	Application mitigates major legal/security/liability issues	20		
	Application mitigates policy issue	15		
	Application mitigates business process risk	10		
	Application designed to prevent human errors	5		
	Application does not address regulatory requirements or institutional risk	0		
Campus Impact: How much do other systems or business functions depend upon data that is created by this application?	Required to provide data to enterprise-level business functions	15		
	Required to provide data to unit-level business functions	10		
	Required to provide data to other department-level business functions	5		
	Does not provide data to other systems or business functions	0		
Strategy: Does this application support the goals and mission of your unit, department, or individuals within?	Application directly supports the academic mission of an academic unit	20		
	Application directly supports the strategic goal of an administrative unit	20		
	Application directly supports departmental goal	10		
	Application directly supports faculty/staff goal	5		

Holistic Value Scorecard Template

Factors	Application Business Value Criteria	Weight	Select (x)	Result Score
Uniqueness: Is there another known application that could be used in place of this application?	There is no known commercial or internal to application that provides similar functionality (i.e., totally unique in function)	10		
	There is no known internal application that provides similar functionality (commercial may)	10		
	There is an internal application that would meet business needs with modifications	5		
	There is an internal application that would meet business need with business process modifications	3		
	There are other internal applications that would meet business needs as delivered	0		
Data of Record: Does this application capture or support University Data of Record?	Application is the data of record for a given entity	15		
	Application extends the Data of Record (i.e., is the Data of record for a small number of fields)	10		
	Application shows the data of record	5		
	Application captures or modifies but does not feed back the data of record	0		
Utility	The application automates a business process that is: complex (7), moderate (4), simple (0)	0		
	The application meets business requirements: fully (6), partially (3), barely or not at all (0)	0		
	Ease of use: high (7), medium (3), low (0)	0		
	<i>Total utility score</i>	0		

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