

JULY 2026

Managing Obsolescence





PMMI The Association for Packaging and Processing Technologies

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Publication Date: July 2026

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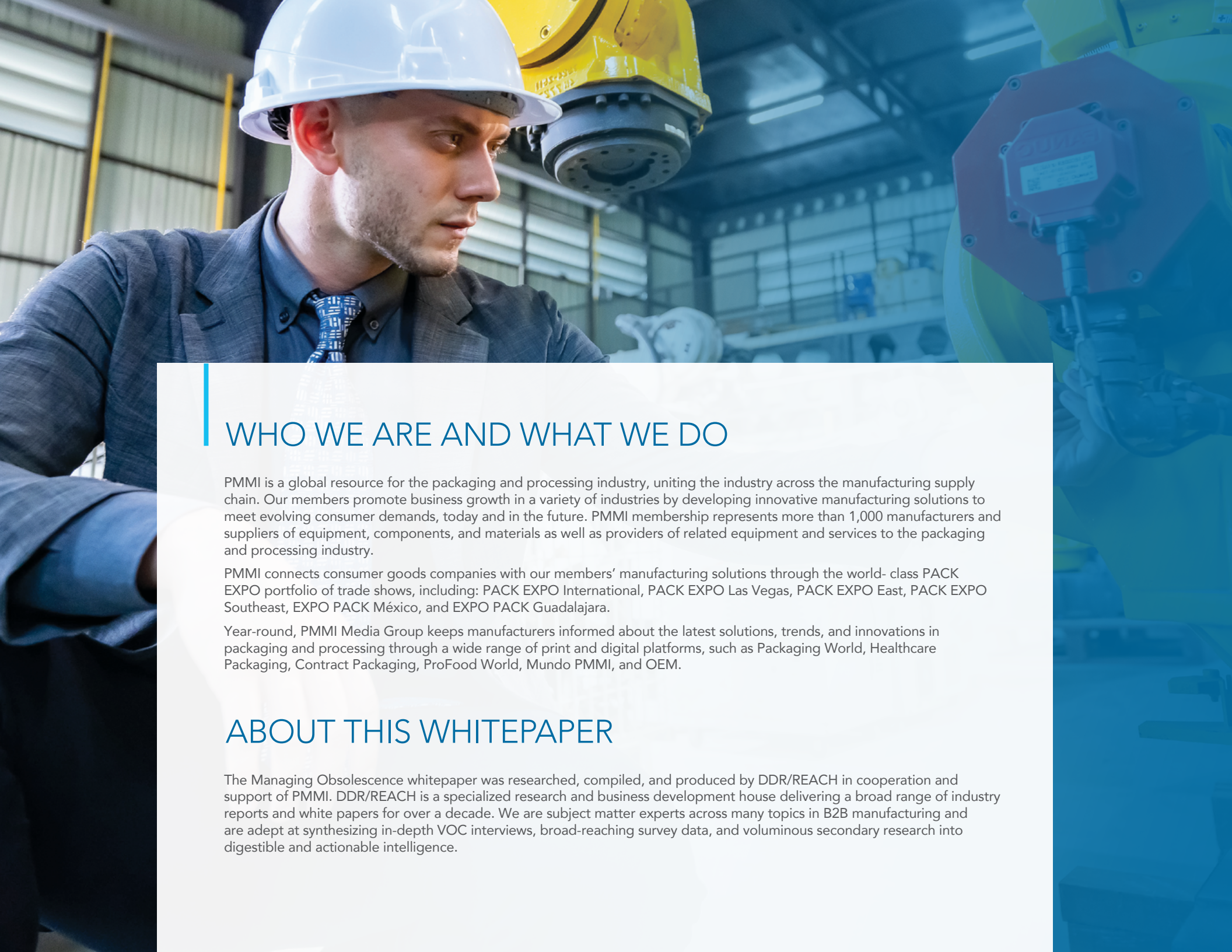
End Users: Users of manufacturing equipment

OEM: Original equipment manufacturer

CM: Component manufacturer

TCO: Total cost of ownership

R&D: Research and development



WHO WE ARE AND WHAT WE DO

PMMI is a global resource for the packaging and processing industry, uniting the industry across the manufacturing supply chain. Our members promote business growth in a variety of industries by developing innovative manufacturing solutions to meet evolving consumer demands, today and in the future. PMMI membership represents more than 1,000 manufacturers and suppliers of equipment, components, and materials as well as providers of related equipment and services to the packaging and processing industry.

PMMI connects consumer goods companies with our members' manufacturing solutions through the world-class PACK EXPO portfolio of trade shows, including: PACK EXPO International, PACK EXPO Las Vegas, PACK EXPO East, PACK EXPO Southeast, EXPO PACK México, and EXPO PACK Guadalajara.

Year-round, PMMI Media Group keeps manufacturers informed about the latest solutions, trends, and innovations in packaging and processing through a wide range of print and digital platforms, such as Packaging World, Healthcare Packaging, Contract Packaging, ProFood World, Mundo PMMI, and OEM.

ABOUT THIS WHITEPAPER

The Managing Obsolescence whitepaper was researched, compiled, and produced by DDR/REACH in cooperation and support of PMMI. DDR/REACH is a specialized research and business development house delivering a broad range of industry reports and white papers for over a decade. We are subject matter experts across many topics in B2B manufacturing and are adept at synthesizing in-depth VOC interviews, broad-reaching survey data, and voluminous secondary research into digestible and actionable intelligence.

INTRODUCTION

Opportunities Abound

Obsolescence has been a constant in manufacturing and is closely tied to core industry principles such as continuous improvement and the pursuit of greater efficiency through technological advancement and design. As technology and manufacturing processes advance, older components are phased out through obsolescence, in favor of newer solutions.

Obsolescence can take a number of different forms. In the broadest sense, obsolescence is defined as components or systems that are no longer supported, produced, or compatible with existing setups. For the purposes of this paper, we have divided obsolescence into three primary categories:



Mechanical obsolescence, which involves physical, moving parts of machines.



Electrical/electronic obsolescence, which involves electronic components such as sensors and indicators.



Digital/software obsolescence, which involves software programs and the digital infrastructure that underpins modern manufacturing.

Understanding how different stakeholders in manufacturing view obsolescence is also essential for identifying the strategies used to address different types of obsolescence. The primary stakeholders and their typical role in the obsolescence chain are:

- **End Users of manufacturing equipment**, who experience obsolescence through declarations from OEM and CM partners, or through their own operational changes that trigger an obsolescence event.
- **OEMs of manufacturing equipment**, who experience obsolescence through declarations from their CM partners, or through machinery redesigns that require new components.
- **CMs (Component Manufacturers)**, who primarily make obsolescence declarations, often triggered by factors such as low volume/margin products, changing technology, and material cost/availability.

This white paper explores how different stakeholders in manufacturing view obsolescence, what challenges create the greatest operational impact, and how they are deploying different strategies to plan for and address obsolescence events. By analyzing the opinions and insights expressed by all three stakeholders, organizations can work toward key industry goals such as streamlining the communication of obsolescence events and better addressing the challenges created by obsolescence.



EXECUTIVE SUMMARY

Obsolescence Communication, Responsibilities, and Timelines

Communicating obsolescence can be challenging, considering the diversity of strategies organizations use to manage obsolescence.

58% of End Users and 67% of OEMs/CMs do not have a dedicated person or department responsible for obsolescence.

26% of End Users and 36% of OEMs/CMs note they split obsolescence responsibility between multiple departments.

All stakeholders noted the same top three preferences for communication channels:



Expectations for obsolescence notification timelines and obsolete part backstocking mostly align across all stakeholders, but there is always room for improvement. End Users and OEMs note the more time, the better.

- 78% of End Users and 81% of OEMs say notification lead times are typically three years or less.
- Both groups also note a preference of 1-3 years as the minimum acceptable period that obsolete parts should remain available for purchase. This is true for all component types: mechanical, electrical/electronic, and software/digital.
- 52% of OEMs and 72% of CMs note they keep obsolete components backstocked for three years or less.

Communication and backstock expectations are an ongoing challenge for all stakeholders, with a plurality of End Users (44%) and a majority of OEMs/CMs (52%) noting they do not have a formal process for obsolescence.



Obsolescence Rates, Drivers, and Cost

Most stakeholders indicate **obsolescence events are increasing or have remained steady**. End Users and OEMs also note that electrical/electronic and software/digital components experience obsolescence more frequently than mechanical components.

- 52% of End Users and 49% of OEMs/CMs report obsolescence events have been increasing over the last five years.
- End Users and OEMs report electrical/electronic and software/digital components experience more frequent obsolescence than mechanical components.

End Users and OEMs/CMs identified slightly different drivers for obsolescence, but **all stakeholders agree new technology development is the most influential**.

- End Users reported new technology (59%), digital incompatibility (37%), and breakdowns and failures (36%) as top drivers.
- OEMs/CMs reported new technology (80%), low-demand and low-margin items being cut (39%), digital incompatibility (37%), and material cost and availability (37%) as top drivers.

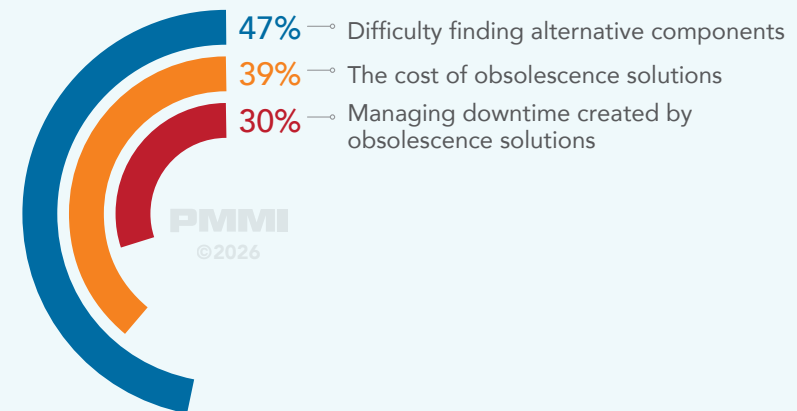
End Users are interested in understanding the cost of obsolescence in TCO calculations, as well as exploring options for up-front obsolescence packages.

85% of End Users consider obsolescence in TCO calculations at least sometimes, but only 47% of OEMs note including these calculations in their TCO estimates.

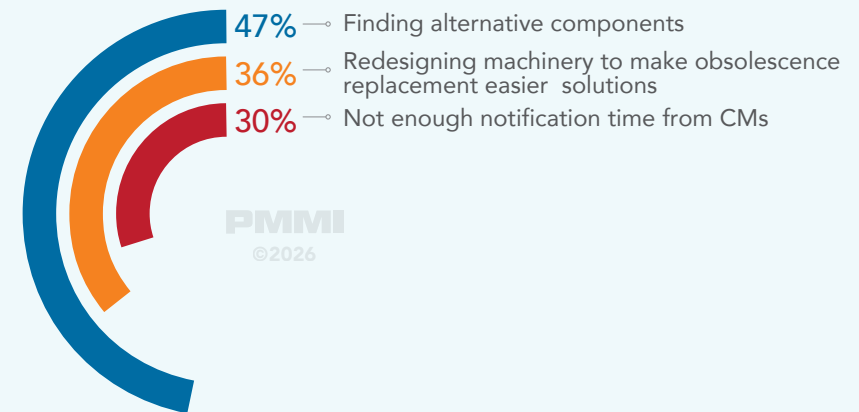
77% of End Users are interested in an up-front obsolescence package, but 66% of OEMs note they never offer this type of package as an optional addition.

Obsolescence Challenges

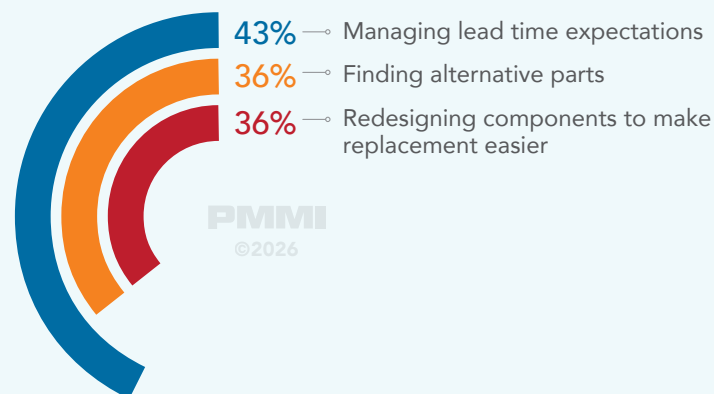
End Users face a number of challenges in managing obsolescence, including



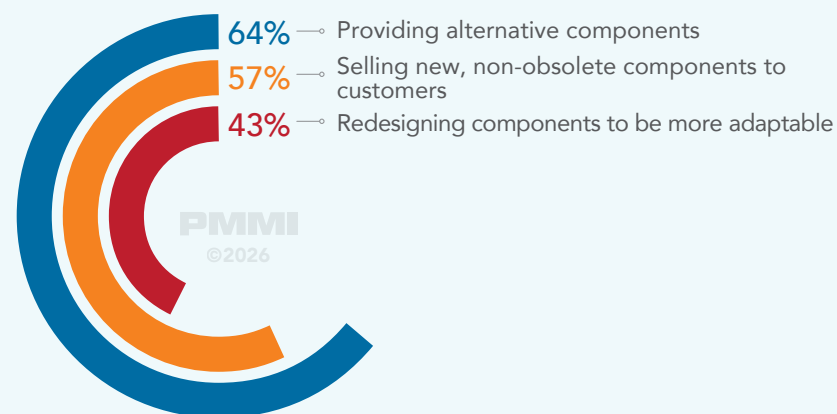
OEMs face a host of challenges when it comes to obsolescence. The most frequently reported challenges include:



Like End Users and OEMs, CMs face a number of different challenges related to obsolescence. The most common challenges included:



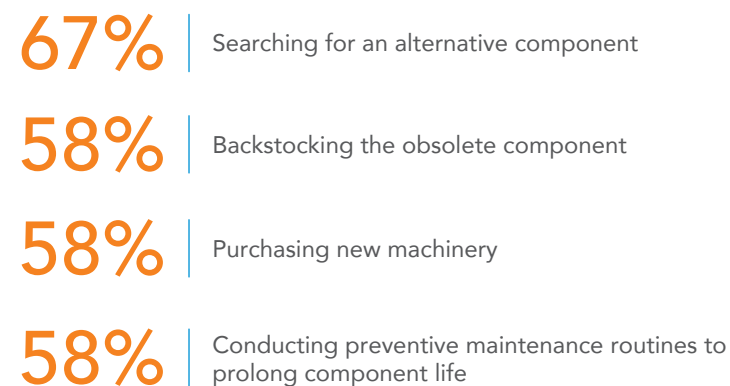
CMs report deploying numerous solutions to help support obsolescence at their customers, including:



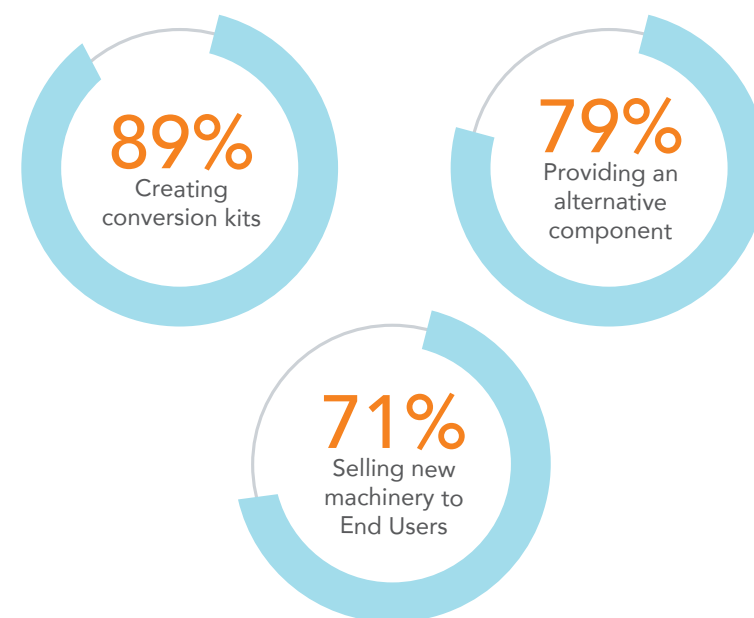
Overall, the data indicates stakeholders deploy a host of different tools to address obsolescence, rather than relying on a single solution.

Obsolescence Strategies

End Users rely on a wide variety of strategies to address obsolescence events.

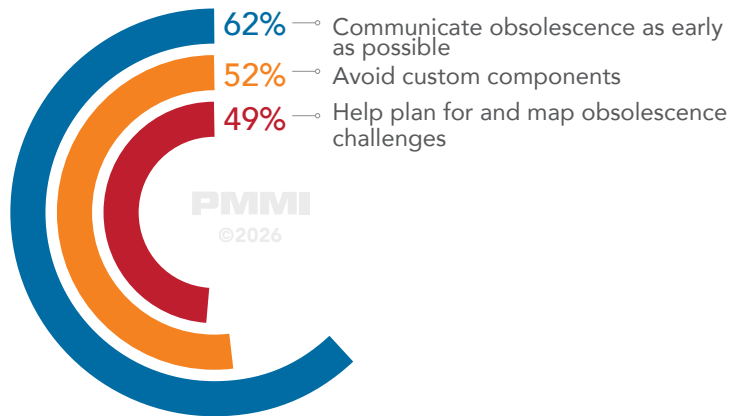


OEMs report many different strategies to address obsolescence at End Users.

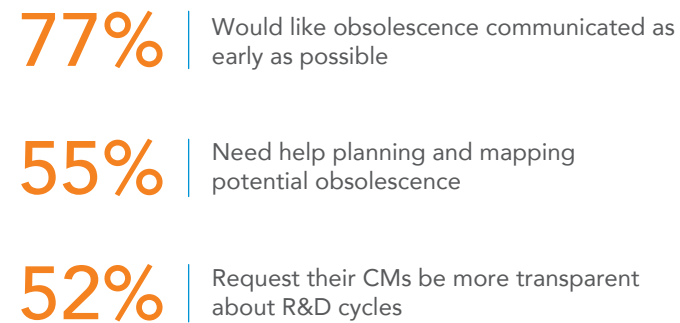


Obsolescence Requests

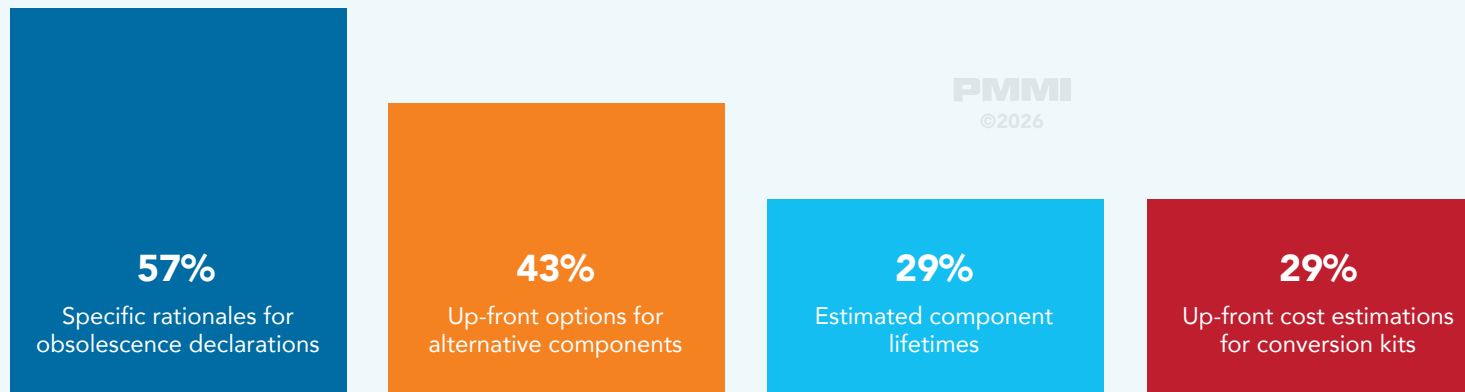
To better manage obsolescence, End Users request their OEM and CM partners to:



To help support obsolescence challenges, OEMs have a number of requests for their CM partners.



Many CMs indicate they endeavor to provide customers with extra information to better understand and support obsolescence, such as:





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OBSOLESCENCE RESPONSIBILITY AND PROCESSES

DEPARTMENTS • PROCESSES • COMMUNICATION

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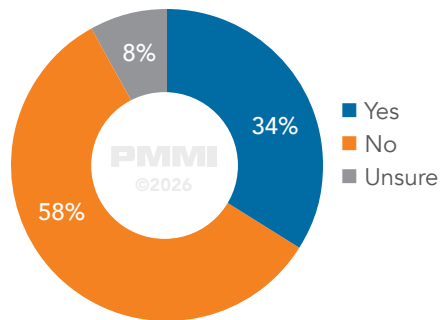
The company tries to provide timelines, but there is a gap in the strategy. We do a very proactive job with distribution and representatives on the industrial side. However, specifiers or prime users might not receive the information, even though the companies who buy the products or the channels through which they buy are informed."

Business Development Manager, *Component Manufacturer*

MOST ORGANIZATIONS DO NOT HAVE A DEDICATED OBSOLESCENCE MANAGER

END USER PERSPECTIVE:

Does your organization have a dedicated person(s) or department that is responsible for tracking and managing obsolescence?



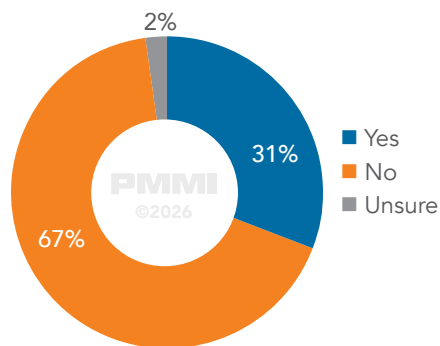
A majority of End Users (58%), as well as OEMs and CMs (67%), reported that they do not have a dedicated person or department responsible for managing obsolescence. OEMs and CMs could benefit from dedicated obsolescence responsibility, especially considering nearly a quarter of End Users reported obsolescence notification and lead times as a top challenge, while nearly a fifth struggle to understand all of their options when it comes to obsolescence.

Dedicated obsolescence responsibility could streamline notification timelines and provide a consistent point of contact for obsolescence knowledge, alleviating some key challenges for End Users.

Another easy way to defuse this challenge is through more direct communication. OEMs and CMs can directly ask their customers if they have a dedicated obsolescence manager or a preferred contact point for obsolescence. This could not only defuse potential communication hiccups, it also demonstrates a deeper interest in customer operations and preferences, which can strengthen the working relationship.

OEM PERSPECTIVE:

Does your organization have a dedicated person(s) or department that is responsible for receiving and notifying customers about obsolescence declarations?



The strategy involves routing all notifications to one consistent global contact responsible for technical aspects of equipment specifications, purchasing, and design. This person disseminates information globally to all affected plants and can identify which other manufacturers' equipment may contain the same obsolete component. This prevents gaps that would occur if notifications were only handled at the local plant level."

Global Technical Packaging Lead, *Chemical Manufacturer*



OBSOLESCENCE RESPONSIBILITY IS OFTEN SPLIT

END USER PERSPECTIVE:

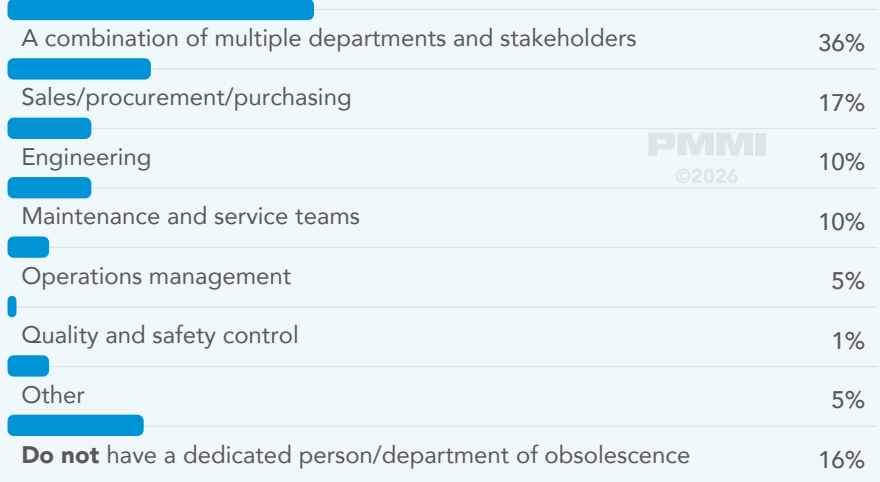
Who primarily manages issues regarding obsolescence in your organization?



A combination of multiple departments and stakeholders	26%
Maintenance and service teams	22%
Engineering	19%
Operations management	17%
Sales/procurement/purchasing	2%
Quality and safety control	2%
Other	1%
Do not have a dedicated person/department of obsolescence	10%

OEM/CM PERSPECTIVE:

Who primarily manages issues regarding obsolescence in your organization, including obsolescence communication from your component manufacturer suppliers and obsolescence communication to your customers?



A combination of multiple departments and stakeholders	36%
Sales/procurement/purchasing	17%
Engineering	10%
Maintenance and service teams	10%
Operations management	5%
Quality and safety control	1%
Other	5%
Do not have a dedicated person/department of obsolescence	16%

Responsibility for managing obsolescence is typically shared across multiple functions. Most commonly, End Users (26%) and OEMs/CMs (36%) reported that these efforts are handled collaboratively across departments and stakeholders within their organization.

End Users may need to contact more than one department or person at their OEM and CM partners when addressing obsolescence-related issues. OEMs and CMs should also recognize that obsolescence messaging and notifications may need to be distributed to multiple contacts within End User organizations to ensure all relevant stakeholders remain informed.

Clearly defining communication responsibilities and points of contact between End Users and their OEM and CM partners can help ensure all stakeholders remain informed about obsolescence events.



Three groups are involved: service advisors (the first line of defense for customer issues), replacement parts team (who identify obsolete components and notify customers), and field modifications team (who engineer solutions)."

Director of Aftermarket Services, Packaging OEM

Responsibilities may vary by country and plant size - some facilities have robust engineering teams while others have only six people total. Generally, responsibilities fall within maintenance and engineering organizations."

Global Technical Packaging Lead, Chemical Manufacturer

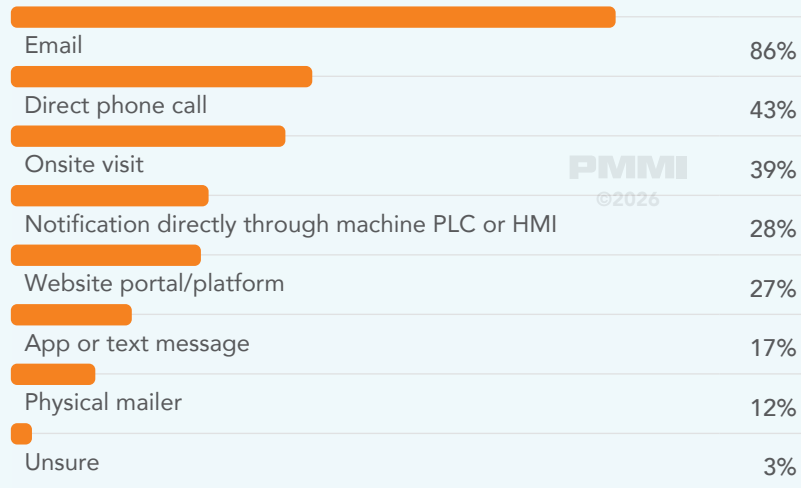
The product manager champions the communication process, assisted by salespeople, regional managers, business development managers, and marketing."

Business Development Manager, Component Manufacturer

ALL STAKEHOLDERS AGREE ON COMMUNICATION CHANNELS

END USER PERSPECTIVE:

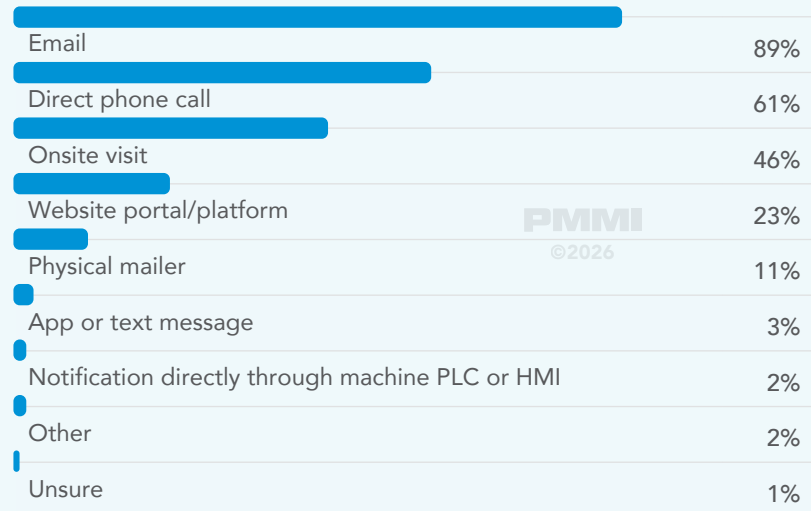
Ideally, what are your organization's top three preferred channels of communication for obsolescence notifications? (Choose up to three)



Totals over 100% due to multiple answers

OEM/CM PERSPECTIVE:

Ideally, what are your organization's top three preferred channels of communication for obsolescence notifications? (Choose up to three)



Totals over 100% due to multiple answers

When it comes to how organizations prefer obsolescence information be communicated, email and direct phone calls emerged as the clear preferences. Interestingly, both End Users and OEMs/CMs also expressed a preference for onsite visits, with all parties selecting it as the third most preferred option.

Considering the potential complexity of obsolescence events – from legacy machinery with years of retrofits and modifications to layers of software and digital management – managing obsolescence is rarely a one-size-fits-all solution. The ability to provide onsite evaluations and walk stakeholders through potential solutions remains important to End Users. OEMs and CMs looking to provide in-person evaluations and education will need to ensure they have adequate staff to meet End User demand.

Onsite visits are also a great way for OEMs and CMs to better understand the operational layouts at their customers. This can also provide OEMs and CMs with additional opportunities to help customers map and plan for potential obsolescence events, shifting management from a reactive footing to a more proactive approach.



One-on-one conversations during regular vendor visits are valuable for staying updated on new technology."

Project and Engineering Manager, Food Manufacturer

Best practice would be a customer portal that sends part-number-level notifications proactively."

Aftermarket Services Director, Packaging OEM

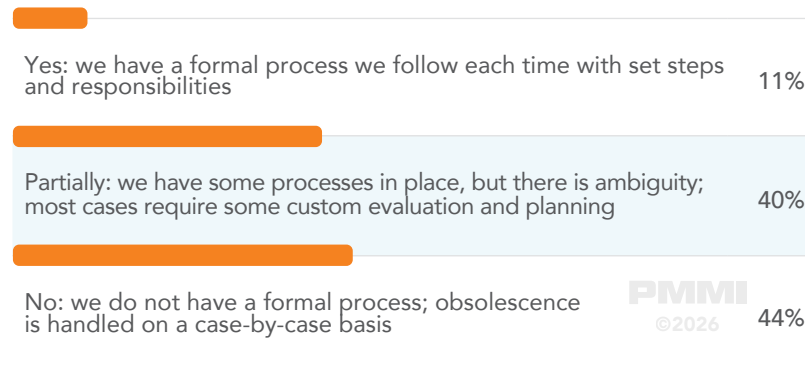
The main challenge is communicating directly with end customers rather than through channel partners."

Industry Group Leader, Component Manufacturer

MOST ORGANIZATIONS DO NOT HAVE A FORMAL OBSOLESCENCE PROCESS

END USER PERSPECTIVE:

Do you have a formal, standardized process (such as a step-by-step process or a formal best practice guide) for identifying, evaluating, and addressing an obsolescence?



One area where both End Users and OEMs/CMs could consider expanding their obsolescence strategies is creating a formalized obsolescence process. Only 11% of End Users and 17% of OEMs/CMs noted they have a formalized obsolescence process for handling obsolescence events.

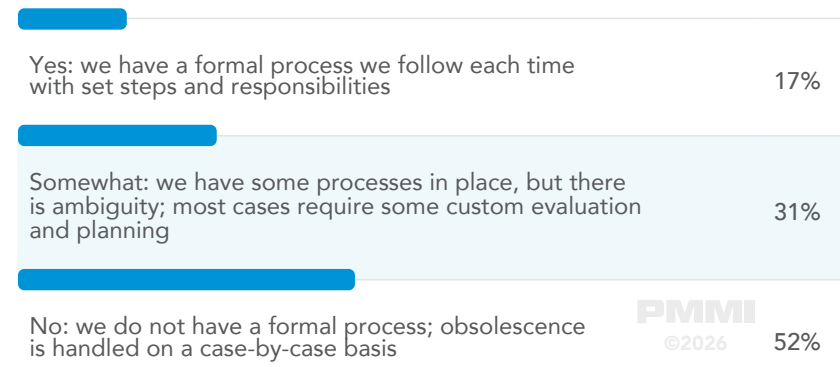
This is particularly important considering 62% of End Users would like obsolescence notifications to be communicated earlier, and 49% would like more assistance mapping out and planning for obsolescence events (see page 33).

Establishing a dedicated person or department for obsolescence management, as well as establishing a clear process for handling obsolescence events, could help reduce potential pitfalls from obsolescence.

Working together to establish a formalized obsolescence process can also help End Users and their OEM/CM partners align on goals and better understand one another's strategies and challenges. Communication and collaboration are key to planning for and managing obsolescence.

OEM/CM PERSPECTIVE:

Do you have a formal, standardized process (such as a step-by-step process or a formal best practice guide) for identifying, evaluating, and communicating obsolescence to your customers?



No formal plan exists. However, this survey conversation has prompted thinking about developing something more proactive for planning before situations become critical."

Project and Engineering Manager, Food Manufacturer

Obsolescence is handled on a strictly case-by-case basis at the moment, which presents a problem frequently."

Engineering Director, Packaging OEM

We have a formalized, documented process. All distributors are notified 9 months in advance of product obsolescence. Distributors receive last-time buy opportunities and are responsible for reaching out to their customers."

Industry Group Leader, Component Manufacturer



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OBSOLESCENCE FREQUENCY AND NOTIFICATIONS

TIMELINES • BACKSTOCK • EXPECTATIONS



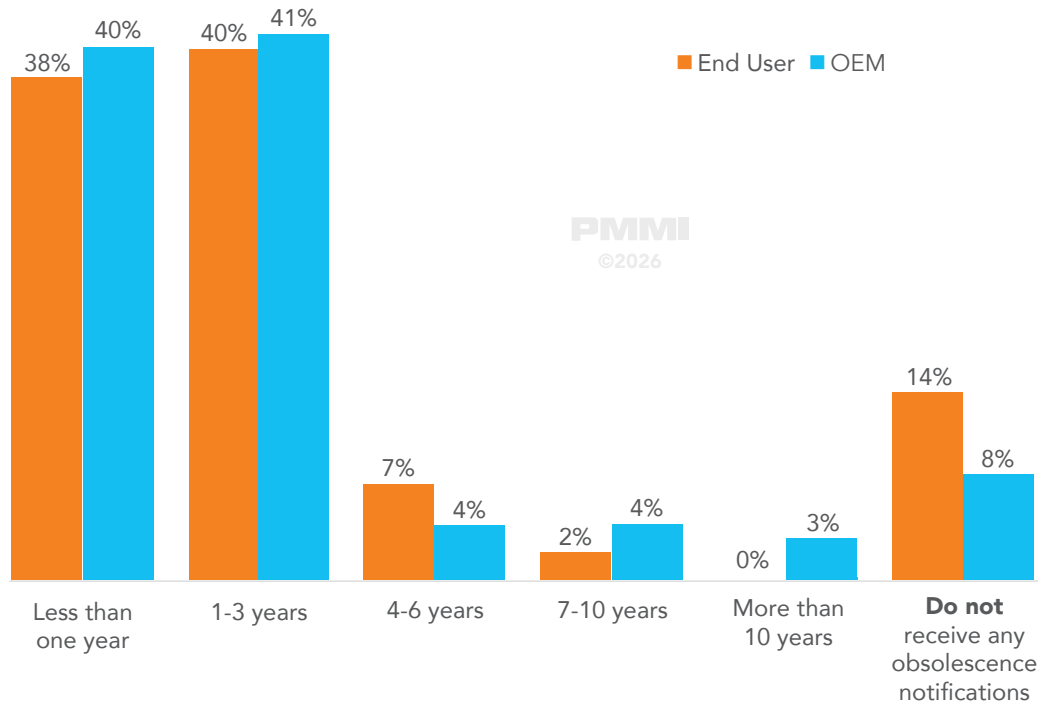
[Our notifications are] working, but we could do better. We don't get complaints and address needs as they arise, but it feels more reactive. There's an opportunity to be more proactive with communication."

Director of Aftermarket Services, Packaging OEM

MOST OBSOLESCENCE NOTIFICATION LEAD TIMES ARE THREE YEARS OR LESS

OEM/END USER PERSPECTIVE:

In your estimation, what is the average notification lead time you receive for an obsolescence event?



Lead times are an important consideration for obsolescence. The more notification time End Users and OEMs receive, the better they can plan for and take steps to address obsolescence events.

Most End Users and OEMs note that they typically receive either 1-3 years lead time, or less than one year. The shorter notification windows are, the less time End Users and OEMs have to adapt to obsolescence events.

This means that timely notification is important for helping End Users and OEMs manage obsolescence effectively. It is also essential that those notifications are widely communicated. With many organizations reporting that obsolescence management is shared across multiple departments, ensuring all relevant stakeholders are informed of an event is equally important.



We need more upfront communication and timelines for obsolescence."

Production and Quality Assurance, CPG Brand Owner

Outdated Technology a Consistent Obstacle

Obsolescence holds real consequences for End Users, ranging from extra costs for new components to costly downtime and missed production schedules. Obsolete components can also hold back advancement. In one independent study, 72% of End Users noted that outdated technology was a key obstacle to achieving their overall goals.¹ Another study also found that 70% of companies do not know when vital equipment requires replacing.² Planning for and addressing obsolescence is important to keeping End Users goals on track.

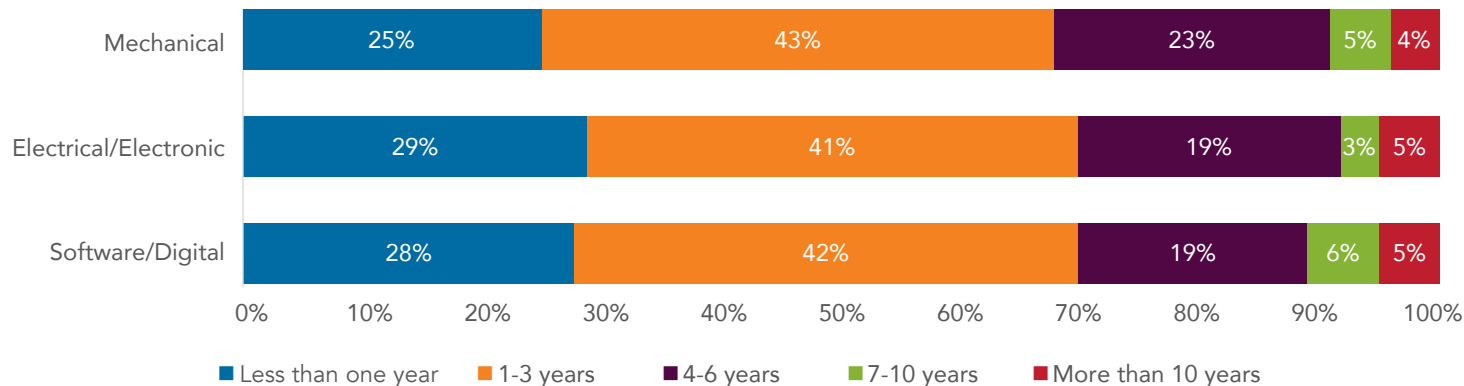
We need as much advance notice as possible when component manufacturers recognize parts that could become obsolete in the future."

Production and Quality Assurance, OEM for the CPG Industry

END USERS SHOWED THE STRONGEST PREFERENCE FOR ONE TO THREE YEARS OF BACKSTOCK AVAILABILITY

END USER PERSPECTIVE:

What is the minimal acceptable timeframe for your OEM and supplier partners to make obsolete parts available for purchase from their inventory?



With most End Users and OEMs receiving three years or less of lead time for obsolescence notifications, figuring out how and when to replace components is a top consideration. For End Users, this is a dilemma, as they must contend with potential downtime and lost revenue should components fail without a suitable replacement plan.

While the numbers vary slightly by type of component, there is a strong consensus amongst End Users that obsolete parts need to be available for at least 1-3 years, with about a fifth preferring an even longer timeframe of 4-6 years.

It is also vital for OEMs/CMs to communicate backstock availability to End Users. One potential solution mentioned by participants was an online database. Some participants noted they have suppliers that maintain a searchable database of components that includes obsolescence information. OEMs/CMs may want to consider adding backstock availability timelines to these databases or establishing them if they do not already have a database set up. This could alleviate pressure on OEMs/CMs to proactively communicate availability and empower End Users with on-demand information.

While establishing and maintaining such a database can be resource-intensive, OEMs/CMs may want to explore this option to stand out to End Users.



For larger components, OEMs typically provide advance notice, often triggered by change requests. Direct parts providers notify less commonly and require an existing account relationship. OEMs are the most common source."

Director of Engineering Operations, *Pharmaceutical Manufacturer*

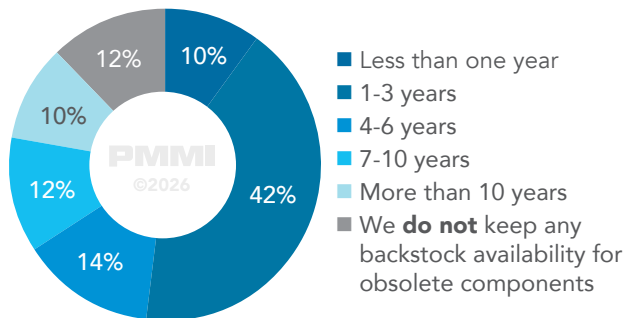
"[Our component manufacturer] has a really good model with their system that shows where components are in the product lifecycle—active, end-of-life, or inactive/obsolete. You can type in a part number on their website and see its status. If all vendors offered this visibility, it would be ideal and we would use it frequently."

Director of Aftermarket Services, *Packaging OEM*

MOST OEMS AND CMS KEEP OBSOLETE BACKSTOCK FOR THREE YEARS OR LESS

OEM PERSPECTIVE:

On average, how long do you keep obsolete components available to your customers before they are unavailable for purchase from your inventory?



The average amount of time OEMs and CMs keep obsolete parts available to customers generally aligns with End Users' expectations of 1-3 years.

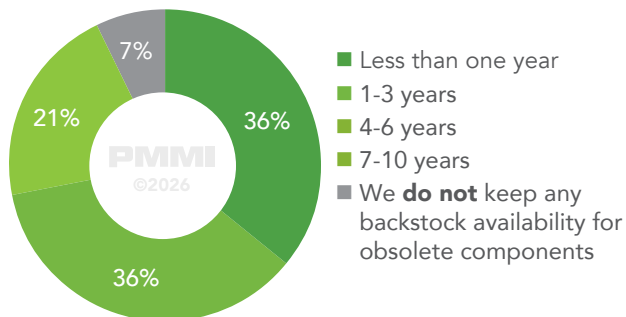
Given that some End Users noted a preference for longer availability of 4-6 years, OEMs and CMs may want to evaluate extending availability for at least some components.

To determine which components need longer availability, OEMs and CMs could consider talking with their End Users about what types of components or even which very specific individual components would benefit most. In a general sense, all stakeholders expressed understanding for the challenges related to backstock, noting it can be difficult to determine what to keep available and for how long. Transparency and communication will be key to alleviating the challenges associated with backstocking obsolete components.

End Users must eventually make a decision about how to replace obsolete components. Maintaining availability for a few years after obsolescence can greatly alleviate the time crunch on End Users to find long-term solutions.

CM PERSPECTIVE:

In the past five years, what is the average notification lead time you provide customers on an obsolescence event before the component is no longer available for purchase from your inventory?



Software: A Different Consideration

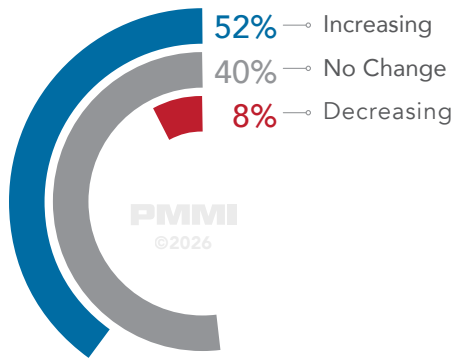
Unlike a physical component, obsolete software is not "backstocked" in the traditional sense, but there can be a trailing tail of support. Software must be kept up-to-date with regular firmware updates, a practice which independent analysis notes typically lasts for 5-10 years after a discontinuation, but can vary drastically.³ These updates are significant for maintaining cybersecurity, especially as manufacturers become increasingly digital spaces with more points of potential vulnerability. Maintaining cybersecurity is also an important priority for consumers: 91% of consumers report concern about cybersecurity within U.S. manufacturing, but only 15% of manufacturers feel very confident in their cybersecurity capability.⁴ Continuing to provide crucial firmware updates in a window after software is obsolete can help increase operational security and address End User concerns over cybersecurity.

Caution: extremely small sample size

THE VAST MAJORITY OF STAKEHOLDERS SEE OBSOLESCENCE EVENTS INCREASING OR REMAINING CONSTANT

END USER PERSPECTIVE:

Over the last five years, what are your perceptions of the overall rate of obsolescence incidents?

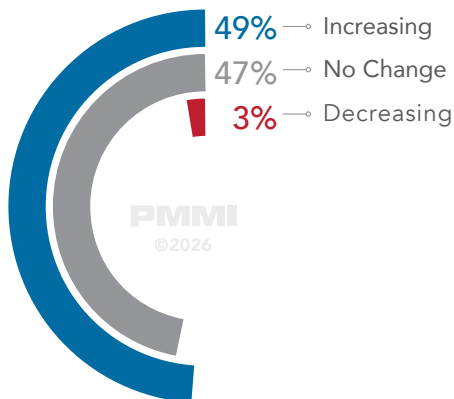


According to those who participated in this research, the rate of obsolescence events has been steadily increasing over the last several decades as technology advances at an accelerating pace and machine speeds and throughput rates continue to climb. This long-term acceleration is a central driver in shaping obsolescence management strategies.

On a more micro level, all types of organizations have observed either increasing or steady rates of obsolescence in the last five years, with slightly more overall seeing increasing rates. As obsolescence events become more frequent, OEMs are challenged with having to rework designs and find alternative components, while End Users must contend with potential downtime and lost revenue associated with obsolescence events. This makes having a formalized process for managing obsolescence events even more important across the supply chain.

OEM/CM PERSPECTIVE:

Over the last five years, what are your perceptions of the overall rate of obsolescence incidents from your component manufacturers?



Semiconductors: A Lifecycle Example

The significant shortening of semiconductor lifecycles over the last several decades is a clear example of accelerated obsolescence rates. In the 1970s, the expected lifetime of a semiconductor was 30 years. In 2025, that expected lifetime has contracted dramatically to just 2-5 years.⁵ Faster rates of obsolescence challenge all organizations in the manufacturing supply chain to remain nimble and adaptable to changing componentry, as well as seek out creative and innovative solutions to mitigate the impacts of obsolescence events.



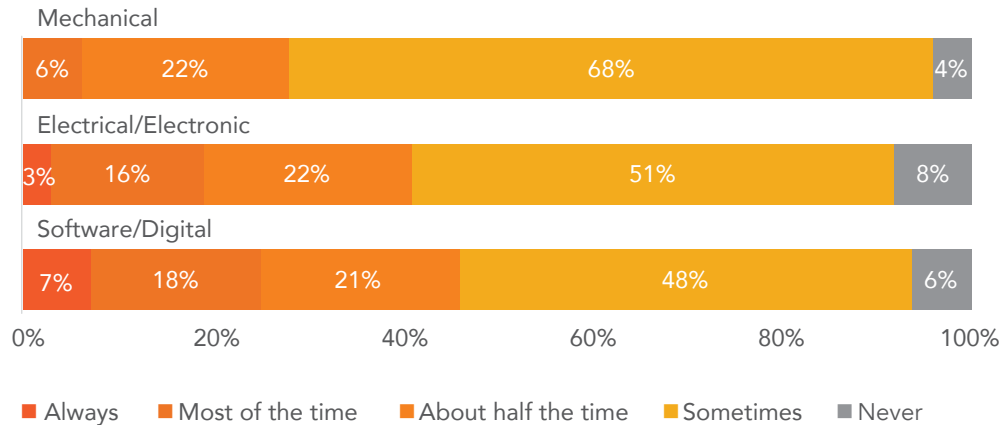
Our challenges are generally electronics and drives and are lower volume. We need longer life cycles on these. Mechanically we're good for 20 plus years. Electronic components need to be closer to the same."

Senior Management, OEM for the Food Industry

END USERS EXPERIENCE ELECTRICAL/ELECTRONIC AND SOFTWARE/DIGITAL OBSOLESCENCE MORE FREQUENTLY

END USER PERSPECTIVE:

How often do you experience obsolescence in the following areas?



Obsolescence: By the Numbers

A large number of components reach obsolescence every year. For instance, nearly half a million components were declared obsolete in 2024.⁶ While exact numbers fluctuate year-to-year, such as spikes in 2021 and 2022 widely attributed to COVID disruption, the overall rate of obsolescence has been steadily increasing in the long term. Planning for and managing the volume of obsolescence events is a key challenge for End Users and OEMs.



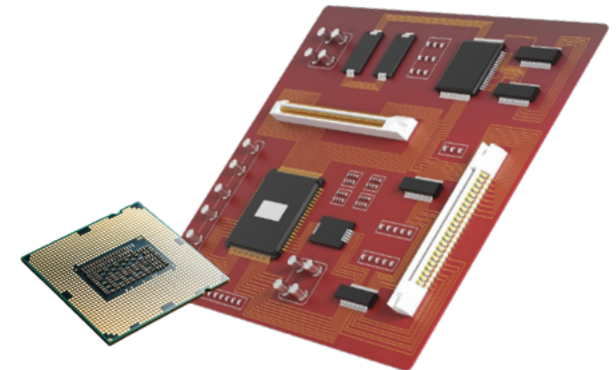
The digital world is changing fastest, followed by electrical, then mechanical. Mechanical components are becoming more complex and interactive with electrical devices. The dependency on everything working together nicely is increasing."

Project and Engineering Manager, Food Manufacturer

A central part of obsolescence management is understanding which components are most likely to become outdated. Planning ahead can help organizations stay ahead of potential events and have set action plans ready for unexpected declarations.

A key aspect of a proactive approach to obsolescence management is understanding the timelines of different component types. For instance, only 6% of End Users note that they experienced mechanical component obsolescence "Most of the time". When asked about electrical/electronic and software/digital obsolescence, that number jumps to 16% and 18%, respectively.

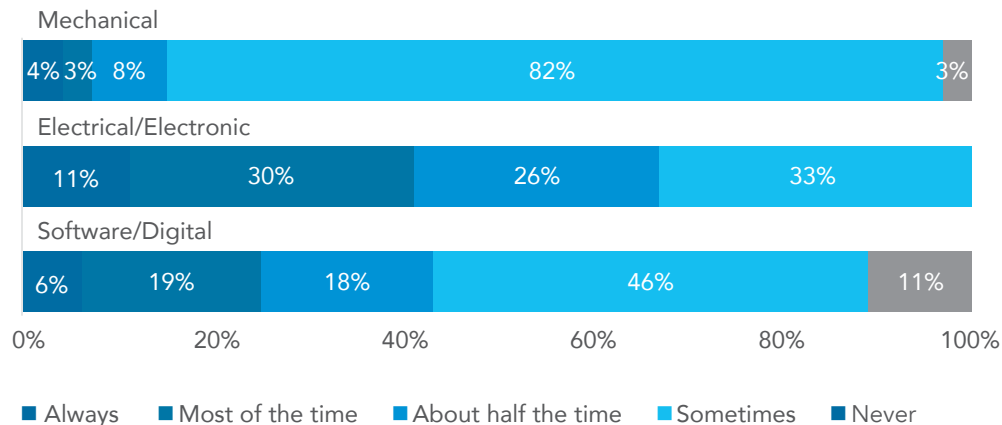
The faster obsolescence timelines associated with electrical/electronic components and software/digital systems create additional challenges for End Users, especially when it comes to digital integration. Ensuring components such as software and electronic sensors can communicate with one another in complex digital environments is an ongoing challenge, compounded by rapidly advancing technology.



OEMS AGREE THAT RATES OF ELECTRICAL/ELECTRONIC AND SOFTWARE/DIGITAL OBSOLESCENCE ARE HIGHER

OEM PERSPECTIVE:

How often do you experience obsolescence in the following areas?



The gulf between rates of mechanical obsolescence and electrical/electronic and software/digital obsolescence is even more dramatic from the OEM perspective.

In our survey, 3% of OEMs note they experience mechanical obsolescence "Most of the time". That figure increases to 19% for software/digital obsolescence, and rises dramatically to 30% for electrical/electronic obsolescence. Much like End Users, OEMs experience substantially higher levels of electrical/electronic and software/digital obsolescence compared to mechanical obsolescence.

These differing rates of obsolescence create some additional challenges for OEMs. While both OEMs and End Users must find ways to overcome obsolescence events, OEMs have the additional challenge of not just reworking their own operations and product designs but also helping their customers do the same.

For instance, an obsolete electrical component might require an End User to find and install an alternative, while it could require an OEM to find an alternative, adjust machine designs, formulate a service kit, and dispatch technicians to make modifications for End User customers. Ensuring they have the expertise and staff to manage all aspects of obsolescence – including customer support needs – is a crucial consideration for OEMs.



Electronic components tend to have the shortest product lifecycles. The constant evolution of programming languages, frameworks, and structures makes components obsolete. It's similar to computer software—something that worked on Windows XP may not work on Windows 7, 8, or 9."

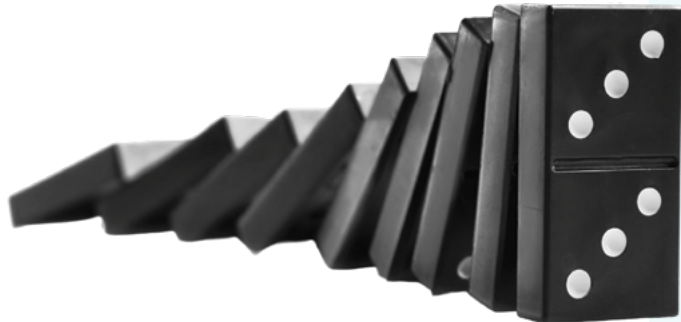
Director of Aftermarket Services,
Packaging OEM

CASCADING OBSCOLESCENCE: A CONSIDERATION

One potential outcome of an obsolescence declaration is a cascading event, where one obsolete component renders additional connected or related components unusable, triggering a chain reaction across a system. In these situations, a single obsolescence declaration can quickly escalate into a much larger operational issue.

These events can be particularly challenging because they are often unexpected. Cascading issues frequently emerge only after a new notification is received or a replacement is attempted. This can require a coordinated effort to avoid downtime, often pulling time and resources away from other departments.

All stakeholders in the manufacturing supply chain should consider proactive ways to mitigate the impact of cascading events. One approach is maintaining detailed documentation and inventories of machines and components, including where they are physically located. With accurate asset mapping, End Users, OEMs, and CMs can compare inventories against declarations and timelines (when available), to identify components at risk and develop plans to prevent or quickly address potential disruptions.



Cascading obsolescence creates concrete operational challenges



A dead IO card turns into a full controls upgrade with an added enclosure because the new IO doesn't work with the old firmware, the new firmware doesn't work on the old PLC, the old drives aren't supported on the new PLC, and the new stuff is deep and tall while the old stuff was wide."

Engineer, OEM for the Food Industry

For example, when a servo motor becomes obsolete, it forces program changes making the old program obsolete, and may require mechanical hardware changes to mount the new motor."

*Director of Engineering,
Packaging OEM*

The most significant chained obsolescence occurs with robotics, where obsolete control systems force replacement of mechanically sound robotic arms, turning a potential \$100,000-\$200,000 fix into a \$500,000-\$600,000 replacement."

*Global Technical Packaging Lead,
Chemical Manufacturer*

End Users, OEMs, and CMs all deal with cascading obsolescence



We get cascading obsolescence approximately 80% of the time. When upgrading certain things, other components must also be upgraded for the system to work together, whether upgrading by choice or due to obsolescence notification."

*Director of Engineering, Food
Manufacturer*

In cascading obsolescence situations, our product developers who also handle product sustaining have their resources diverted quickly, and they lack the depth of bench to handle this effectively."

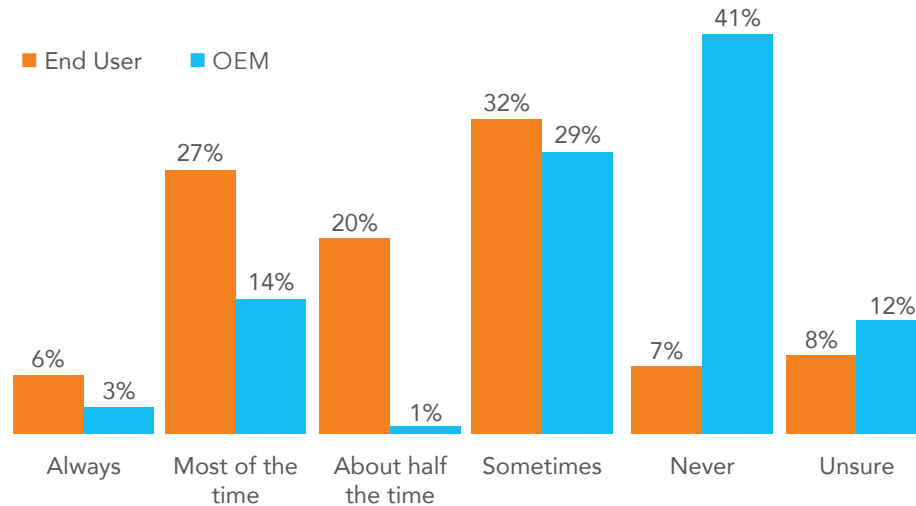
*Business Development Manager,
Component Manufacturer*

We get cascading obsolescence maybe 5-10% of the time – about once a year. It is a massive headache when it happens because the department is already scheduled for upcoming projects and must immediately disrupt work to fix the problem."

Engineering Director, Packaging OEM

END USERS REPORT FACTORING OBSOLESCENCE INTO TCO CALCULATIONS MORE FREQUENTLY THAN OEMS

How often do you factor in obsolescence when evaluating machine total cost of ownership (TCO)?



While obsolescence can be tricky to accurately predict, especially over longer periods of time, it plays a key role in the overall cost of owning manufacturing equipment. From replacement parts and overhaul kits, to downtime and even new equipment purchases, obsolescence can require significant capital expenditure to address.

One way to manage the financial effects of obsolescence declarations is to plan ahead for their cost by factoring obsolescence into TCO calculations. While our survey showed that nearly all End Users (85%) consider obsolescence at least sometimes when calculating TCO, OEMs were less likely to do so, with 41% stating they never include obsolescence in TCO calculations.

With these findings in mind, there may be an opportunity for OEMs to better align their TCO estimations with End User expectations. By factoring obsolescence into machine cost estimates or separating estimated obsolescence expenses as a distinct line item to consider beyond purchase cost – even if those estimates are not perfectly precise – OEMs could help manage End User expectations around future machine expenses. This approach demonstrates an understanding of the financial and operational challenges End Users face. By aligning TCO estimations with End User expectations, OEMs can strengthen industry partnerships.

Estimating Obsolescence

Projecting when a component will become obsolete and how much that obsolescence will cost is a particularly challenging endeavor for End Users and their supplier partners. With so many factors and unknowns to weigh, the problem can seem intractable. But by carefully studying component cycles and monitoring obsolescence events, manufacturers can deploy tools able to predict obsolescence lifecycles with accuracy rates of over 90%.⁷ By making relatively reliable predictions on when obsolescence events will occur, stakeholders can work backwards to estimate obsolescence costs over time and factor them into TCO calculations.



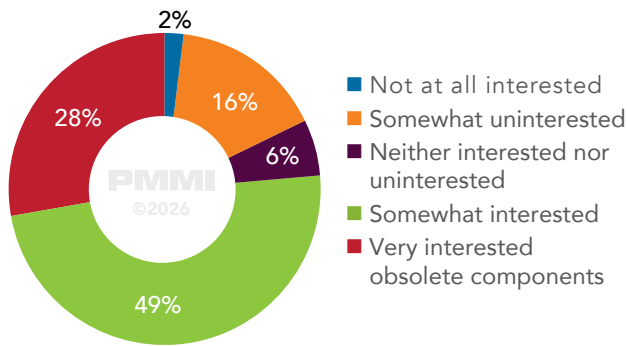
There are real hidden costs for organizations regarding obsolescence, so being as transparent as possible about the technology and expected life span up front would be very helpful."

Senior Manager, CMO/CPO

END USERS ARE INTERESTED IN UPFRONT OBSOLESCENCE PACKAGES, BUT MOST OEMS DO NOT OFFER THEM

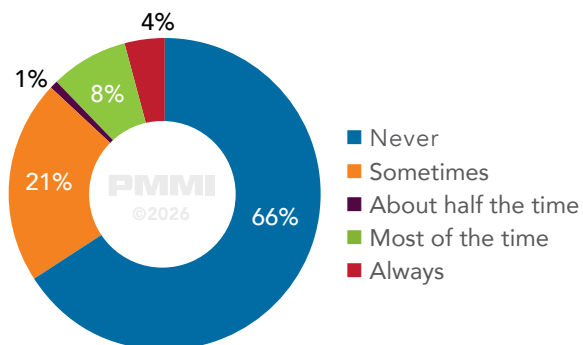
END USER PERSPECTIVE:

When purchasing machinery, how interested are you/would you be in up-front packages or options to address future obsolescence?



OEM PERSPECTIVE:

When customers purchase machinery, how often do you offer up-front obsolescence packages as an optional addition?



Another potential way to hedge against future obsolescence management costs is through upfront obsolescence packages or agreements. A majority of End Users (77%) indicated they would be somewhat or very interested in an upfront offering designed to help mitigate future obsolescence impacts.

Despite this interest, 66% of OEMs stated they never offer these types of packages as part of machinery purchases. Part of the disconnect between End User interest and OEM offerings may come down to practicality: accurately planning for obsolescence is a difficult task, even when using broad estimates. In addition, manufacturers often have different strategies and approaches for managing obsolescence, making standardized offerings more difficult to implement across all customers.

To address some of these challenges, End Users and OEMs could consider additional dialogue around the types of guarantees and support that would best help them mitigate future impacts. Whether through pre-set service agreements, pre-identified alternative component lists, or overhaul kit guarantees, OEMs and End Users should consider collaborating on more proactive strategies for managing future obsolescence events.



Upfront obsolescence agreements are a good concept. We're currently looking at equipment and I plan to have conversations with vendors about planning for eventual obsolescence before it happens."

Project and Engineering Manager, Food Manufacturer

I need to know exactly what will be covered, cost factors, and enough information to make an intelligent decision about ROI for obsolescence planning. It's important to know if anything being built is on the verge of becoming obsolete."

Project and Engineering Manager, Food Manufacturer

The concept is very interesting, but the price is not. While the company always discusses such options, similar to extended warranties, the cost typically doesn't justify the risk or expense based on experience with regular service plans."

Global Technical Packaging Lead, Chemical Manufacturer

OBSOLESCENCE BUDGETS

With obsolescence often difficult to predict, budgeting for related costs is a key consideration for manufacturers and their supplier partners. Whether it's an issue identified well in advance or a sudden, unexpected event, addressing obsolescence often requires capital expenditure. Determining where that funding comes from within an organization is an important operational question.

When asked, stakeholders noted many different strategies for budgeting around obsolescence, including rolling obsolescence into larger budgeting buckets, separating it out as a line item, and finding capital on an as-needed basis. The key takeaway for supplier partners is that End Users and OEMs often approach these costs differently, meaning partners will need to work directly with customers to understand how funding is planned and managed.

End Users, OEMs, and CMs note planning obsolescence costs is tricky, making budgeting more challenging



Most important is the time horizon, followed by potential cost down the road and potential downtime, though all are hard to calculate."

Director of Engineering, Food Manufacturer

The cost challenge is the greatest. When customers need to switch and the company runs out of old generation replacements, customers must replace their entire system with the new generation, resulting in significant time and cost."

Product Manager, Processing and Component Manufacturer

It's challenging to calculate when you don't know exactly when obsolescence will happen. That's where visibility would be very helpful—the ideal state vendors could provide."

Aftermarket Services Director, Packaging OEM

Obsolescence can be a line item, but not always



There's no specific line item for obsolescence. The company doesn't have a plan for this but recognizes the need to develop one as technology advances."

Project and Engineering Manager, Food Manufacturer

It is a line item in SG&A in the yearly budget, but not attached to specific departments like engineering, sales, or operations."

President, Processing and Packaging OEM

Obsolescence budgeting can come from many places



Obsolescence is generally a planned expense with specific projects addressing specific obsolescence issues in the CapEx plan."

Director of Engineering, Food Manufacturer

Obsolescence is factored as capital investment requiring annual capital funding requests, similar to any project."

Director of Engineering Operations, Pharmaceutical Manufacturer

Some OEMs view obsolescence as primarily a time cost



The actual obsolescence is not a planned part of the budget, but it affects timelines more than the budget. Time is money, but time is the main problem."

Director of Engineering, Packaging OEM

We do not track it in actual dollar value. In time value, it's probably 5% of my time."

Engineering Director, Packaging OEM

Expense-wise, I would say it would be very low—if I had to give a number, less than 5%."

Aftermarket Services Director, Packaging OEM



3

OBSOLESCENCE DRIVERS, CHALLENGES, AND NEEDS

TECHNOLOGY • COLLABORATION • TRANSPARENCY



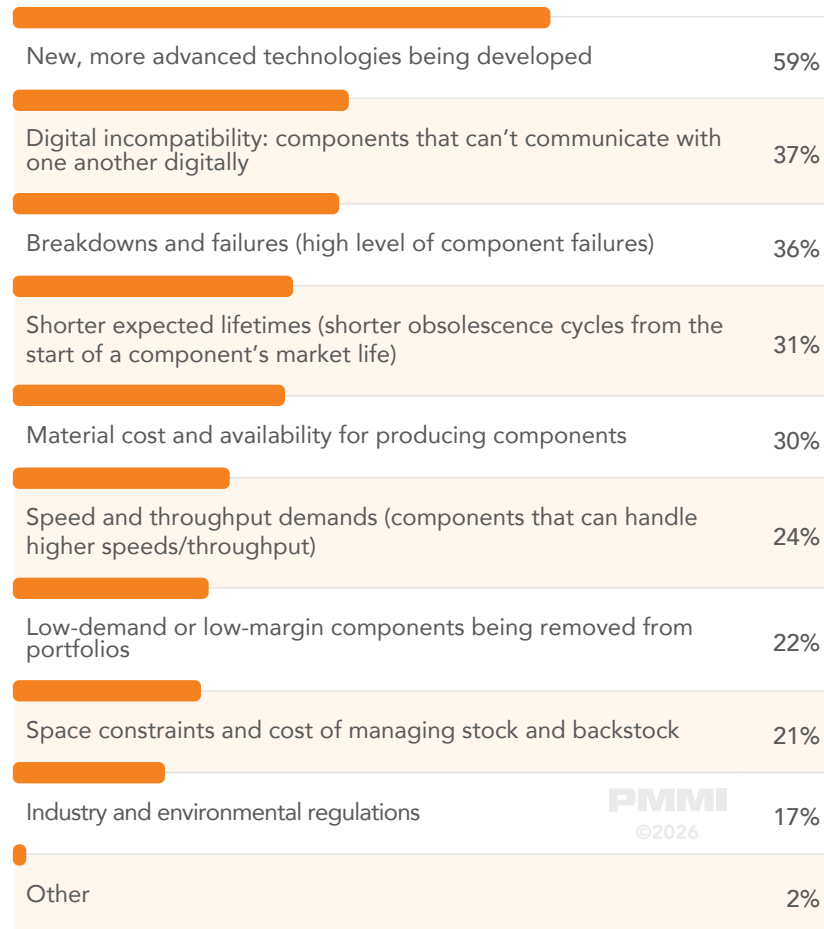
The biggest challenge is communicating obsolescence effectively. I think we do an okay to good job, but I want to do better. I want to find out sooner and proactively communicate obsolescence to customers so they're aware. When you're in more of a reactive state, that's challenging to do."

Aftermarket Services Director, Packaging OEM

END USERS SEE TECHNOLOGY, DIGITAL COMMUNICATION, AND BREAKDOWNS DRIVING OBSOLESCENCE EVENTS

END USER PERSPECTIVE:

In your opinion, what are the top three drivers of obsolescence in manufacturing? (Choose up to three)



Totals over 100% due to multiple answers

Hundreds of thousands of components are declared obsolete each year, with many End Users (52%) and OEMs/CMs (49%) reporting an increase in obsolescence events over the last several years. Several key industry trends are driving this growth and accelerating the pace at which components become obsolete.

From the End User perspective, the rapid advancement of technology combined with higher failure rates are the top drivers of component obsolescence. End Users indicated that newer, more advanced technologies are the top driver of obsolescence (59%), noting specifically that digital incompatibility plays a significant role (37%). On top of technology advancement and digital incompatibility, End Users also identified increased breakdowns and failures (36%) as another major contributor.

These findings provide OEM and supplier partners with several opportunities to better serve their End Users. For organizations struggling with the rapid advancement of technology, OEMs and suppliers may want to consider more proactive education and outreach around current and emerging technologies. In a similar vein, integration services can help ease digital communication challenges, while dedicated onsite support teams may help address more frequent breakdowns and failures or more rapidly replace components with new alternatives. By providing these services to End Users, OEMs and supplier partners can help their customers better plan for obsolescence, minimize operational impact, and work toward directly addressing obsolescence events when they occur. Additionally, these services can expand OEM and supplier partner knowledge about individual End User operations, strengthening relationships while simultaneously addressing obsolescence.



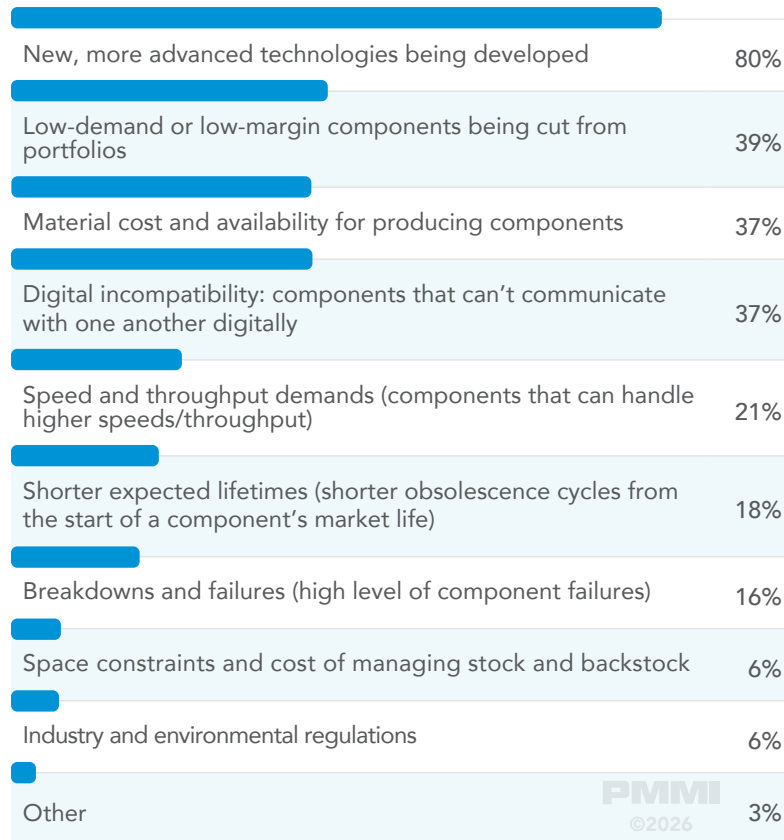
For sensors, motion controllers, and electronic components, as newer versions with better features, smaller sizes, or improved efficiency are developed, older technologies and models become unsupported."

Director of Engineering Operations, *Pharmaceutical Manufacturer*

OEMS AND CMS SEE TECHNOLOGY, PORTFOLIO CUTS, AND MATERIALS DRIVING OBSOLESCENCE EVENTS

OEM/CM PERSPECTIVE:

In your opinion, what are the top three drivers of obsolescence in manufacturing? (Choose up to three)



Totals over 100% due to multiple answers

While End Users are more focused on operations triggers for obsolescence events – such as digital incompatibility and component failures – OEMs and CMs tend to view the issue through a different lens.

Although all groups agree that technology advancement is the top driver, OEMs and CMs place greater emphasis on production and financial pressures. From their perspective, low-demand and low-margin components being removed from portfolios is the second most important driver of obsolescence, followed by material costs and availability.

Given that OEMs and CMs are focused on producing machinery and components, it is no surprise that they see more demand- and availability-based obsolescence drivers. In many cases, these factors influence one another. New technology often causes old systems to fall out of favor and become obsolete, while advancements in design and production strategies may reduce material inputs for new components, making legacy products more expensive to manufacture.

Interestingly, the third-most selected option from End Users – breakdowns and failures – was noted by only 16% of OEMs and CMs. This may be an area where End Users could benefit from more collaboration with their supplier partners to better understand and manage component failures.

Obsolescence and Market Demand

OEMs and CMs both identified low-demand and low-margin components as key drivers of obsolescence as organizations cut those products from portfolios. This trend aligns with another independent study from 2023, which looked at 2 million key parts over the last three decades and found that 78% of obsolescence events for those parts were spurred by low market demand for the product.⁸



Material availability, like silicon wafers for building drives, directly impacts obsolescence. If materials are no longer available and they can't find an alternative, the component goes obsolete."

Director of Aftermarket Services, Packaging OEM

REGULATIONS PLAY A ROLE IN OBSOLESCENCE

While it was the least-chosen option by all stakeholders, industry and environmental regulations are widely noted by outside industry experts as influencers on obsolescence.⁹ The role of regulations for End Users can vary significantly depending on industry and product being produced. This is also true for OEMs and CMs, who are similarly regulated by industry standards that govern machine specifications, as well as environmental regulations that dictate manufacturing processes for individual components, such as chemical and hazardous material usage. Additionally, all stakeholders are governed by sets of country-specific regulations that vary by region. Together, these factors create a complex web of regulatory considerations that can vary significantly across manufacturers, industries, and countries. This challenge is further compounded when regulations are amended or updated. With the European

Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH):

A European Union regulation governing the use of chemicals and materials, including in manufacturing. CMs are most affected by this regulation, given the variety of chemicals and materials used in component manufacturing, and the implementation of REACH in 2007 resulted in a wave of obsolescence declarations for non-compliant processes.

Substances of Very High Concern (SVHC):

Housed under the REACH regulation, SVHC is the list of substances identified as posing significant health or environmental concerns, whose use is restricted or subject to additional requirements.

Union adopting a more expansive regulatory framework when compared to the U.S., some U.S. manufacturers operating internationally voluntarily adhere to European Union requirements to streamline production standards.¹⁰

While industry- and country-specific regulations are too complex to list in full, some examples of common regulations that most frequently impact stakeholders across manufacturing segments are detailed briefly below. Adhering to and keeping up to date with these regulations is an ongoing task that can be eased through regular communication between End Users, OEMs, and CMs about regulatory needs, challenges, and changes. Regular communication can help stakeholders anticipate regulatory changes, align compliance expectations, and reduce the risk of disruption from evolving requirements.

Restriction of Hazardous Substances (RoHS):

Originally enacted in 2003, RoHS is a European Union regulation that restricts the use of hazardous materials found in electronic components. Like REACH, this regulation has a particularly large impact on CMs, but legacy End User and OEM components on machinery must also be in compliance.

PFAS and PFOA Regulations:

In the European Union, PFAS regulation is housed under the REACH framework. In the U.S., PFAS are regulated under the EPA's Toxic Substances Control Act (TSCA), as well as regulations in at least 35 states. It should be noted these regulations are in flux in the U.S. and prone to change on both the federal and state levels.

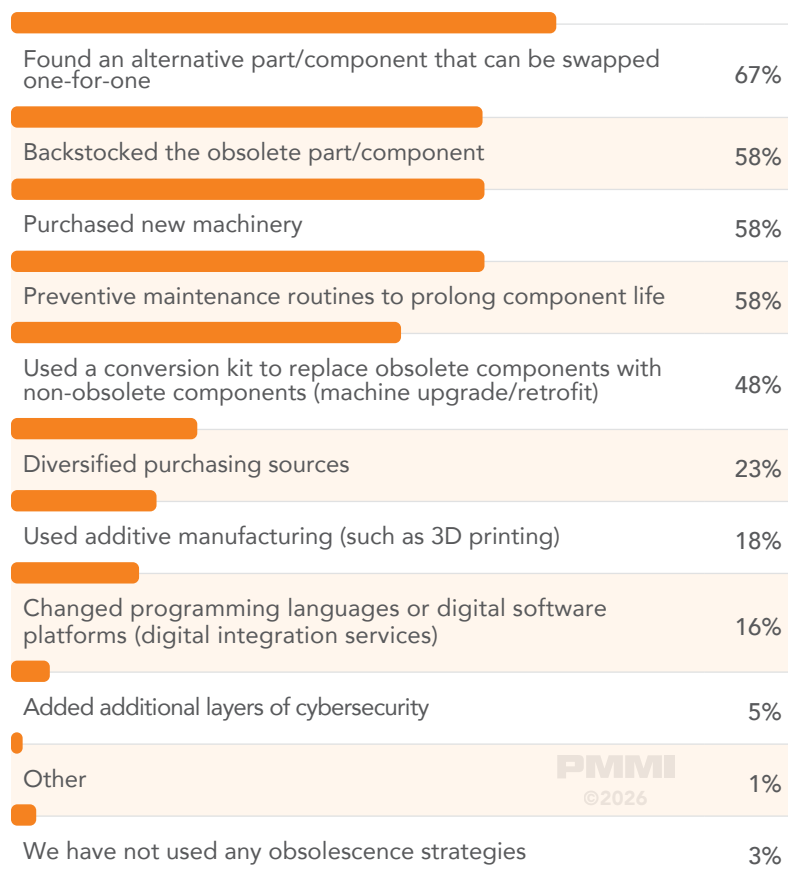
Sources: European Commission; U.S. Environmental Protection Agency



END USERS RELY ON A DIVERSITY OF STRATEGIES TO ADDRESS OBSOLESCENCE

END USER PERSPECTIVE:

What strategies has your organization most commonly pursued to address obsolescence in the past? (Choose all that apply)



Totals over 100% due to multiple answers

Obsolescence events are an inevitability for manufacturers and the disruption they cause can lead to costly downtime and missed production goals. To avoid these pitfalls, manufacturers must find strategies to address and – ideally – stay ahead of obsolescence declarations.

The two most common obsolescence strategies deployed by End Users are also two of the most straightforward: finding a one-for-one replacement (67%) and backstocking the obsolete component (58%). These strategies are even more effective when End Users and OEMs intentionally select components that are more generic and have numerous alternatives.

A majority of End Users (58%) also reported purchasing entirely new machinery to address these challenges. This suggests that End Users are willing to invest in long-term solutions.

Perhaps most interestingly, this data indicates End Users frequently rely on multiple approaches to overcome obsolescence events. The high percentages across the top results suggest that End Users are turning to a broad toolbox of solutions rather than relying on a single approach. OEMs and supplier partners should keep this in mind, understanding that each obsolescence event may require tailored responses or multiple solutions working together.



We would like to know how much stock they have on hand, what the direct replacements are, and what are replacements that will need modification to protocols to work."

Engineer, CPG Manufacturer

It is challenging to source parts for older [End User] machines that are still running well. It would be nice to have a directory of machine parts suppliers with OEM suppliers that offer support as well."

Senior Manager, CMO/CPO

END USERS' GREATEST CHALLENGES REVOLVE AROUND AVAILABILITY, COST, AND RESOURCE ALLOCATION

END USER PERSPECTIVE:

What are your organization's top three challenges when it comes to tracking, managing, and addressing obsolescence? (Choose up to three)



Totals over 100% due to multiple answers

Obsolescence creates a host of challenges for End Users that must be overcome to ensure smooth production. The top challenge reported by End Users – difficulty finding alternative components (47%) – is of particular importance. Not only is it the top challenge, it is also the number one strategy they utilize to address obsolescence (67%).

While two-thirds of End Users rely on this strategy, nearly half report struggling with it and OEMs and supplier partners have an opportunity to assist their customers. OEMs and supplier partners can consider strategies like proactively identifying replacement components before obsolescence is declared, including more generic and easily replaceable components in their designs, or even keeping temporary backstock of alternative components after an obsolete component is no longer available.

The next three most-selected challenges – cost of obsolescence solutions (39%), managing downtime (30%), and labor and skill for obsolescence (28%) – all involve managing cost and resource allocation. These findings highlight the operational burden that obsolescence can place on End Users, particularly when issues require significant time, expertise, or unplanned investment to resolve. OEMs and supplier partners can help address these challenges through technical expertise, service support, training, and proactive planning. As machinery and component ecosystems become increasingly complex, suppliers must be prepared to support a wide range of obsolescence scenarios.

For End Users, reducing the labor, expertise, and downtime required to manage obsolescence represents significant value, and can help suppliers strengthen relationships. Suppliers that can help minimize these burdens may stand out to End Users.



Service teams should be bigger, multi-functional, and multi-skilled, operating like a race car pit crew rather than a backyard mechanic."

Director of Engineering, Food Manufacturer

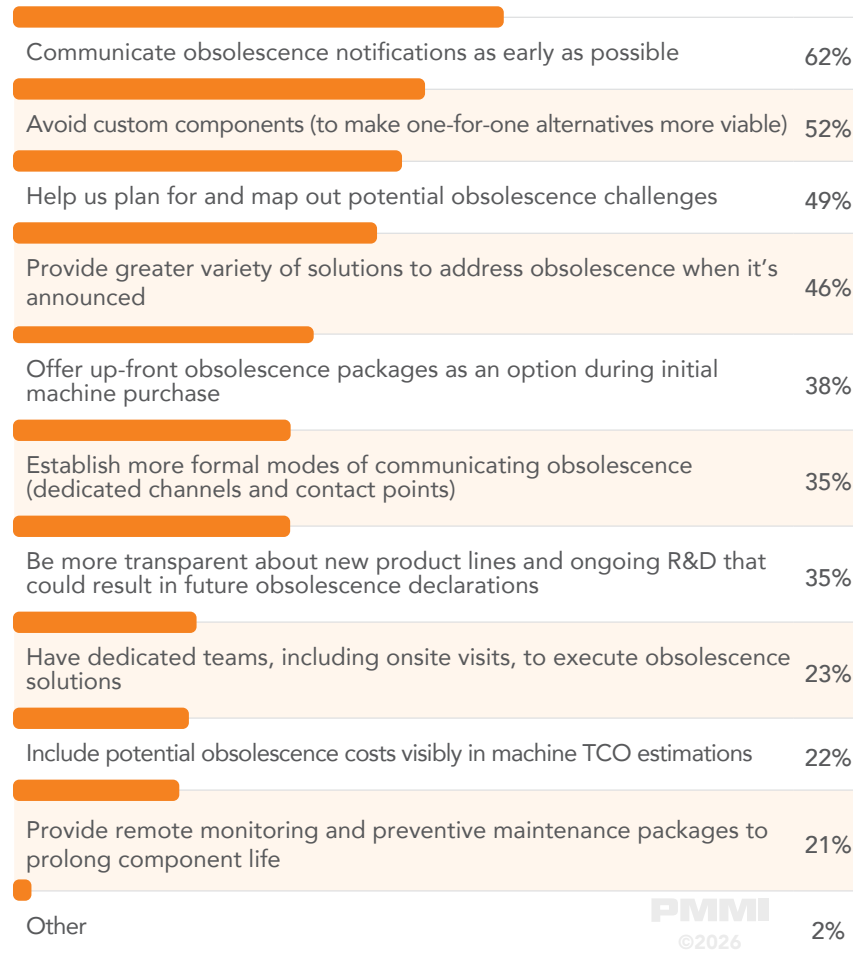
The main challenge is prioritizing replacement of obsolete parts with limited maintenance shutdowns and high costs."

Director of Engineering Operations, Pharmaceutical Manufacturer

END USERS ARE ASKING FOR MORE COLLABORATION AND COMMUNICATION

END USER PERSPECTIVE:

What more could your OEM and supplier partners do to better support your obsolescence needs and challenges? (Choose all that apply)



Totals over 100% due to multiple answers

Obsolescence is an ongoing challenge for End Users, with many reporting that rates are increasing, especially for electrical/electronic components and digital/software components. OEMs and supplier partners have a key role to play in obsolescence management, and our survey revealed End Users are clearly asking their industry partners for more support.

Three of the top six asks – communicating obsolescence notifications as early as possible (62%), helping plan for and map out obsolescence challenges (49%), and more formal modes of communicating obsolescence (35%) – all involve more regular communication and collaboration. End Users are asking OEM and supplier partners to be more involved in their obsolescence planning and communicate obsolescence information regularly and clearly.

End Users are also interested in more proactive and practical solutions to preempt or rapidly address obsolescence events. End Users would like their industry partners to avoid custom components in their designs (52%), provide a greater variety of solutions to obsolescence events (46%), and offer up-front obsolescence packages (38%). Essentially, End Users are asking industry partners to make these challenges easier to manage through the thoughtful use of replaceable components and a broader range of proactive and reactive solutions to address obsolescence beyond just notification.



We would like to get regular updates and planning for when components are planned to be discontinued and when support will be discontinued – with a plan to actually address it, rather than just telling us the problem with no solution."

Engineer, CPG Manufacturer

Use standard components that have long expected lifecycles when sourcing machine components."

Engineer, CPG Manufacturer

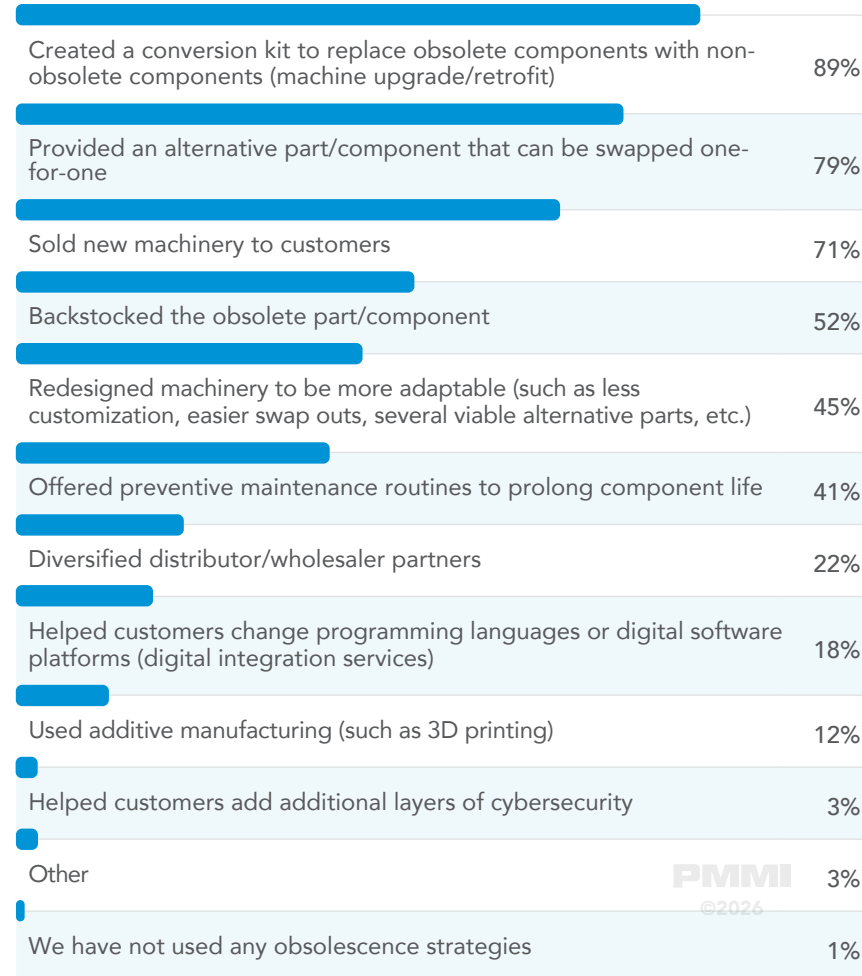
We would like on-site visits of our equipment to review and help us create a retrofit proposal."

Engineer, CPG Manufacturer

OEM SOLUTIONS AND END USER NEEDS ARE MOSTLY ALIGNED

OEM PERSPECTIVE:

What strategies has your organization utilized to help address obsolescence for your customers? (Choose all that apply)



Totals over 100% due to multiple answers

Much like End Users, OEMs report deploying a wide variety of solutions to help address obsolescence. For the most part, these OEM solutions align nicely with the strategies End Users themselves report using. Top End User solutions such as alternative components, new machinery, and backstocking were also reported by OEMs as their top supportive strategies. Interestingly, while 89% of OEMs report deploying conversion kits as a solution, 48% of End Users indicated using these kits.

End Users and OEMs may benefit from further discussion around what sort of conversion kits are most useful and when a kit is needed over a single, one-for-one alternative component. OEMs should also consider proactive and regular communication about what kinds of kits are available for obsolete components, as well as plans to develop or support kits in the future. By providing more transparency into kit-based solutions and their availability, OEMs and supplier partners can better equip End Users to manage obsolescence.

Most importantly, this data reveals that like End Users, OEMs are deploying a number of different strategies to address obsolescence at their customers. This is encouraging for future industry collaboration, as stakeholders broadly agree that these events are complex and require a diverse toolbox of solutions to address the variety and volume of obsolescence events. With broad agreement around the urgency and challenges involved, industry partners can focus more directly on mitigating operational disruptions and developing effective long-term solutions.



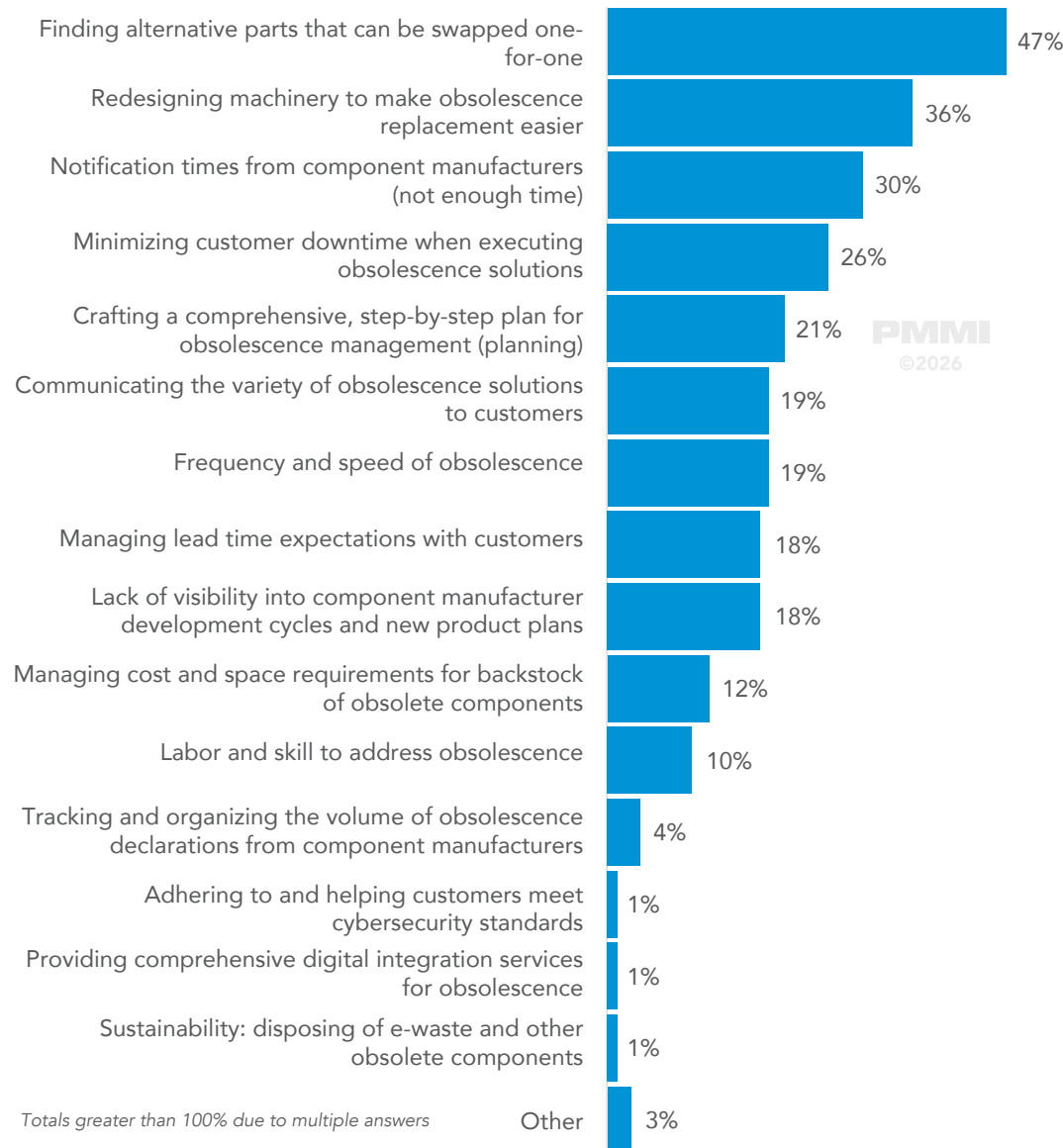
When machines are down at our customers, it becomes a 911 emergency. We may have engineers design something on a napkin and use 3D printers, search eBay, or have three different people working on three different approaches simultaneously. It's an hour-by-hour race to see who can fix the problem."

President, Processing and Packaging OEM

OEMS ARE CHALLENGED WITH REDESIGNS, FINDING ALTERNATIVES, AND NOTIFICATION TIMES

OEM PERSPECTIVE:

What are your top three challenges related to obsolescence? (Choose up to three)



When comparing the obsolescence challenges reported by End Users to those noted by OEMs, some commonalities emerge.

For instance, both End Users (47%) and OEMs (47%) report challenges finding one-for-one alternatives to obsolete components. This is an area where CMs may want to consider expanding their services: with expert product and lifecycle knowledge, CMs could be a highly effective source of information for alternative components. This could strengthen industry relationships throughout the supply chain and reduce friction created by obsolescence events.

Communication is also a shared struggle: 22% of End Users report they do not receive enough lead time on notifications from their OEM partners, while 30% of OEMs note they do not receive enough lead time from their CM partners. Standardizing and streamlining communication channels for obsolescence could help alleviate crucial pain points for stakeholders across the supply chain.

OEMs also report challenges with redesigning machinery to more easily address obsolescence. With expansive knowledge of components and likely alternatives, this is another area where OEMs and CMs may want to consider more collaboration. Collaborating on more adaptive designs is also an effective way to strengthen OEM and CM coordination around obsolescence timelines, alternative components, and new component development cycles.



Keeping us informed way in advance is critical to keep our customers from being in vulnerable situations."

Senior Management, OEM for the CPG Industry

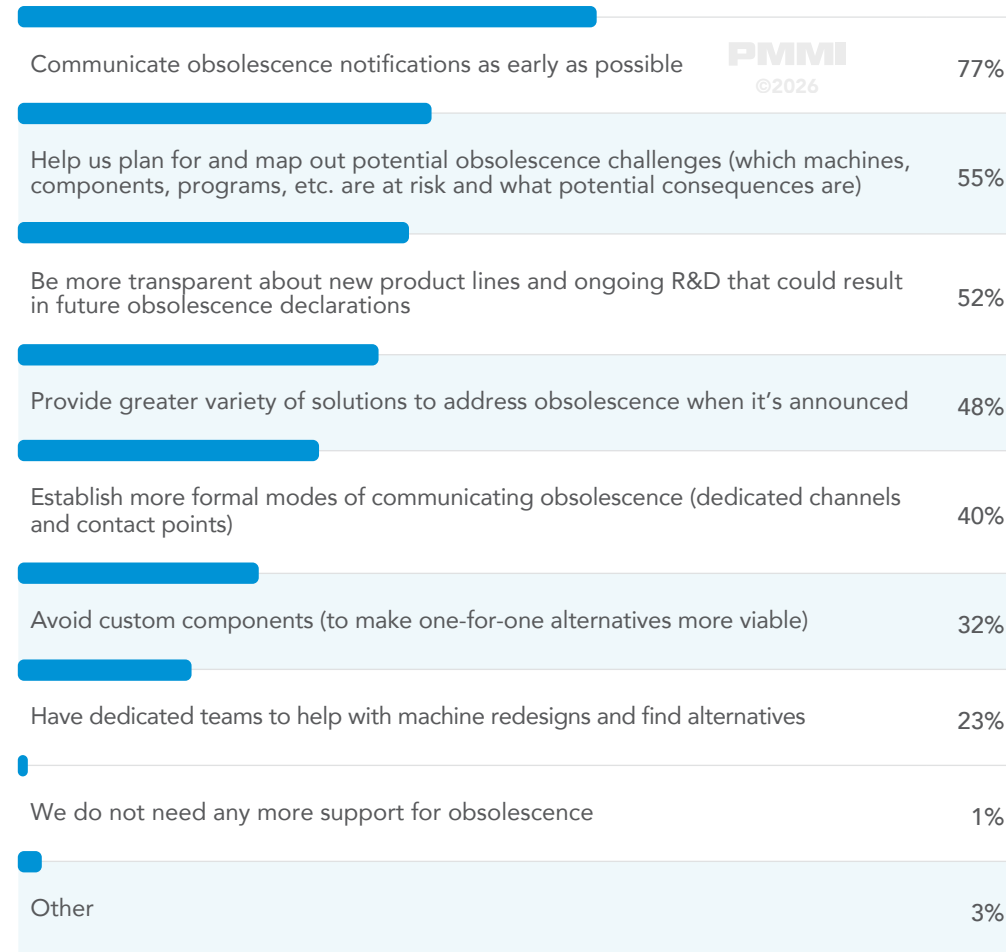
Industrial automation machine design, fabrication and fielding can take 7 to 15 months on new machines and buy cycles can add a year to that timeline. That means obsolescence can impact new machines, but more importantly, it sets machine life expectations at a decade or more, so we need help planning for obsolescence."

Senior Management, OEM for the CPG Industry

OEMS WOULD LIKE MORE COMMUNICATION, COLLABORATION, AND TRANSPARENCY FROM THEIR CM PARTNERS

OEM PERSPECTIVE:

What more could your component manufacturers do to better support your obsolescence needs and challenges? (Choose all that apply)



Totals over 100% due to multiple answers

When OEMs were asked about what more their CM partners could do to support obsolescence, communication and collaboration were the top requests – much like End Users.

OEMs are asking their CM partners to notify them about obsolescence events as soon as possible (77%). Going even further, 52% of OEMs are also requesting more transparency into CM R&D cycles to help them better gauge and understand obsolescence timelines. By communicating clearly with OEMs and providing them insight into what sort of components are being developed and how they could impact current product lines, OEMs can better plan their designs to accommodate changes with minimal disruption.

Another top request from OEMs – having CMs help them plan for potential obsolescence challenges (55%) – is also an excellent avenue for bolstering regular communication and deepening collaboration on new component development cycles and how they affect machine design.

By providing early notification of obsolescence events and greater transparency into development cycles, OEMs and CMs can better plan for future component changes and minimize operational disruption. Strengthening collaboration in these areas can ultimately better serve End Users and reduce the impact of disruptive events.



OEMS HAVE SOME SPECIFIC SUGGESTIONS FOR THEIR CM PARTNERS

I get frustrated when component manufacturers send a note just saying something is obsolete. I want background information, why it is obsolete, and what their alternative is. They should always recommend a specific replacement part with reasons and differences explained, so engineers do not have to spend time working out what they have to do to fit it."

Director of Engineering, Packaging OEM

The ability to go on a component manufacturer website and see where a component is in the product lifecycle is very helpful. If all our vendors had that as an option, I think we would use it frequently. If you determine it's obsolete, then you have time to work through and engineer a solution or get alternative parts in stock. Then if equipment goes down, it's not waiting."

Aftermarket Services Director, Packaging OEM

Collaborative engineering is the answer—a supplier willing to work with our team to solve problems technically."

Engineering Manager, Packaging OEM

The Cost of Redesigning Semiconductors

Redesigning components and machinery is a top strategy pursued by both OEMs and CMs to address obsolescence, but these are not necessarily easy undertakings and their execution can be expensive. One independent analysis notes the cost for redesigning individual components can vary drastically. For instance, when redesigning semiconductors in the healthcare industry, simple semiconductor parts such as diodes can cost as little as under \$100,000 to redesign in a new chip, but can grow into eight-figure costs when more complex components such as microprocessors are involved.¹¹

CMS ARE FINDING ALTERNATIVES, SELLING NEW PRODUCTS, AND EXECUTING REDESIGNS TO COMBAT OBSOLESCENCE AT THEIR CUSTOMERS

CM PERSPECTIVE:

What strategies has your organization utilized to help address obsolescence for your customers? (Choose all that apply)



Totals greater than 100% due to multiple answers; Caution: extremely small sample size

CMs report utilizing a variety of strategies to help their customers overcome obsolescence challenges. Unsurprisingly, many of the top strategies pursued by CMs are also those reported by OEMs and End Users.

Top selections from CMs such as alternative components (64%), new machinery (57%), component redesigns (43%), and backstocking (36%), are all also top strategies reported by OEMs and End Users. However, there are a few interesting points in the data that CMs and their OEM partners should be aware of.

Preventive maintenance was a top solution to obsolescence pursued by End Users (58%) to prolong component life. While a good portion of OEMs reported offering preventive maintenance to extend component life (41%), only 7% of CMs noted this strategy.

There could be several potential opportunities for OEMs and CMs to enhance their services, specifically when it comes to mechanical, moving components on machinery. For instance, with only 7% of CMs offering preventive maintenance directly, there may be opportunities to partner more closely with OEMs to bolster existing maintenance programs and better tailor them toward extending mechanical component life. The specialized skills and knowledge of CMs could help OEMs refine these programs, while the staff and reach of OEM service packages could help extend those services to a wider customer base. By working in tandem, OEMs and CMs can ultimately deliver better products and more effective services to End Users.



Several adjustments have been made: more than single sourcing for critical components, better backwards compatibility planning, and designing next-generation offerings with cybersecurity built-in to work with existing servo drives and motors. The goal is to avoid huge impacts like previous changes, making transitions less disruptive."

Business Development Manager, Component Manufacturer

MANY CMS PROVIDE RATIONALE FOR OBSOLESCENCE EVENTS AND ALTERNATIVE OPTIONS

CM PERSPECTIVE:

Do you provide any of the following information to your customers as it relates to obsolescence? (Choose all that apply)

Specific rationale (such as new tech, portfolio consolidation, material costs, etc.) for an obsolescence declaration	57%
Alternative component options up-front in case of a component being declared obsolete in the future	43%
Estimated component lifetimes before obsolescence is declared	29%
Up-front cost estimations for conversion kits	29%
Transparency into R&D cycles that could yield future obsolescence declarations (updates, news releases, etc.)	21%
Alternative supplier partner lists that will backstock a component beyond the component manufacturer timeframe	7%
None of the above	21%

*Other includes: We do not need any more support for obsolescence
Totals over 100% due to multiple answers



Newer technology should be shared sooner with OEM partners. Key recommendations include: open communication, clear timing of product arrivals, and transparency about how new products will impact end-of-life for existing products."

Business Development Manager, Component Manufacturer

With communication and collaboration around obsolescence identified as key priorities by both End Users and OEMs, CMs have an important responsibility to provide clear and timely notifications. Both End Users (62%) and OEMs (77%) identified faster notification timelines as their top request.

When explaining why components are declared obsolete, a majority of CMs (57%) reported already providing that information to customers. While there is still room for improvement, this suggests that many CMs are going beyond simple declarations by offering additional context to help customers better understand the issue. More timely and informative updates are beneficial for both OEMs and End Users.

One key area CMs could explore further is greater transparency into their development cycles. A majority of OEMs (52%) indicated this would help them better plan for and hedge against future disruptions, yet only 21% of CMs noted currently providing this level of insight. By involving OEMs more closely in development plans and timelines, CMs could ultimately help them provide better and more proactive support to End Users.



The company works with salesmen to contact customers now rather than waiting 5 years when service inventory runs out, developing transition plans rather than waiting until the last minute."

Product Manager, Component Manufacturer

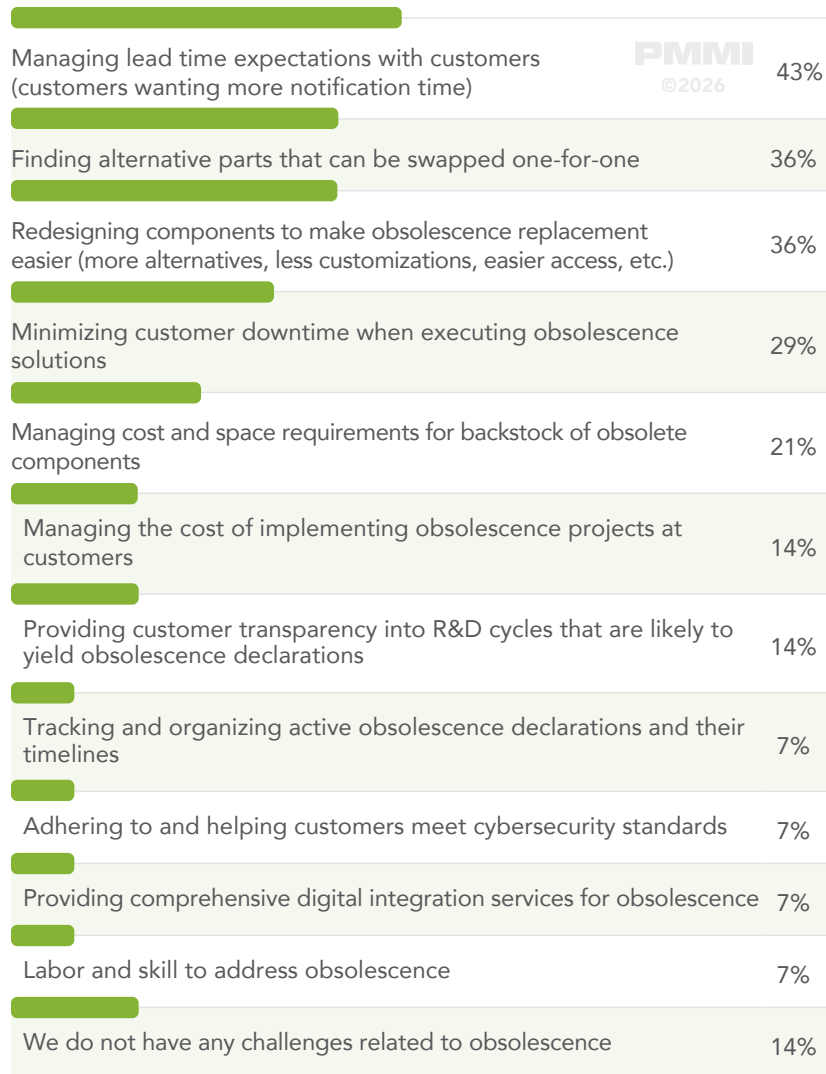
While we typically provide customers a larger timeframe, supply constraints have forced narrower windows. For example, when notified of limited remaining inventory, we calculate what will last for 5 years of guaranteed service instead of the preferred 7-10 years."

Product Manager, Component Manufacturer

CMS GREATEST CHALLENGE IS MANAGING LEAD TIME EXPECTATIONS

CM PERSPECTIVE:

What are your top three challenges related to obsolescence?
(Choose up to three)



Totals greater than 100% due to multiple answers; Caution: extremely small sample size

Pivoting to the challenges CMs are facing with obsolescence, a common theme once again emerges: notification timelines. Customers requesting more time on obsolescence notifications was the top CM challenge (43%). As noted previously, this is also the top request from both OEMs and End Users: provide us with more time upfront on obsolescence notifications. This remains an ongoing challenge across the manufacturing industry and will require stronger cooperation and collaborative problem solving to improve notification timelines and provide OEMs and End Users with greater visibility into development cycles and future obsolescence risks.

One area where End Users, OEMs, and CMs could look to collaborate more deeply is design. Redesigning machines or components to better manage obsolescence is the second greatest challenge selected by OEMs (36%) and the third greatest noted by CMs (36%). Additionally, 45% of OEMs and 43% of CMs indicate they undertake redesigns to better support their customer obsolescence strategies. With many OEMs and CMs modifying designs to accommodate obsolescence—while also struggling with those efforts—this may be an area where closer collaboration and shared expertise could provide meaningful benefits.



Communication is the greatest challenge. This includes communication to end users who actually have the equipment, and communication to OEMs about how controls partners can assist with upgrades."

Business Development Manager, Component Manufacturer

Communication is key. Keeping communications open and active, especially with supply chain leaders at customer companies, is the most important tool."

Industry Group Leader, Component Manufacturer

The challenge is understanding which obsolete machines to support, where the value will be, and how many customers will want specific parts."

Vice President, Manufacturing Engineering Services Firm



6

KEY FINDINGS AND CONSIDERATIONS

KEY FINDINGS AND CONSIDERATIONS

Obsolescence remains a challenge for all stakeholders in manufacturing. While End Users, OEMs, and CMs differ in their views on the drivers of obsolescence, there is broad agreement that obsolescence events are increasing and creating compounding challenges for all stakeholders. Addressing these challenges will require greater communication and collaboration around obsolescence planning, notifications, and mitigation strategies. By working together, stakeholders can better understand one another's challenges and needs, enabling more effective planning, stronger partnerships, and improved long-term outcomes.

Obsolescence responsibility is often distributed across multiple functions, and most organizations lack a formal obsolescence management process.

- OEMs and CMs should be prepared to communicate obsolescence information to multiple contacts and departments within customer organizations.
- Email, direct phone calls, and onsite visits remain critical channels for effective obsolescence communication and planning.
- Stakeholders should consider developing more formal processes and cross-functional collaboration strategies to improve obsolescence management and response planning.

Obsolescence rates have been steadily increasing, especially for electronic/electrical and digital/software components.

- OEMs and CMs should prioritize proactive communication, providing as much lead time and supporting information when issuing obsolescence declarations.
- All stakeholders should monitor for obsolescence events that may trigger cascading impacts across multiple components or systems.
- OEMs and CMs should evaluate opportunities to strategically backstock obsolete components. Determining which components to retain and for how long will require collaboration across the supply chain.

Managing obsolescence can be costly, and End Users are increasingly interested in understanding and planning for its long-term financial impact.

- Many End Users report factoring obsolescence into TCO calculations at least sometimes, while many OEMs note they do not include obsolescence in their projections. Helping customers understand and plan for these costs may provide a competitive advantage.
- Most End Users also expressed interest in upfront offerings designed to help manage future obsolescence impacts, yet few OEMs currently provide them. OEMs should consider working with customers to explore proactive service agreements, component planning strategies, or other approaches that help mitigate future obsolescence risks and costs.



MANUFACTURER

In Sum

All stakeholders have a role to play in obsolescence management. The findings make clear that responsibility for obsolescence does not rest with any single stakeholder. All stakeholders play important roles in communicating, planning for, and managing obsolescence events. Improving communication and collaboration can help stakeholders better understand one another's challenges, needs, and expectations. And stronger coordination across the supply chain can support more effective planning, reduce disruption, and improve response to future obsolescence events.

A photograph of a man in a yellow hard hat and light blue shirt operating industrial machinery in a factory. Another worker in a blue hard hat is visible in the background. The image is overlaid with a blue gradient.

6

APPENDICES

A: Methodology

B: Endnotes and References

PARTICIPANT PROFILE AND METHODOLOGY

To assess obsolescence trends and challenges over the next several years, we combined secondary research and independent studies with insights and statistics gathered through survey responses and detailed interviews with End Users, OEMs, and CMs. Statistics, unless otherwise cited, are derived from the data gathered through survey responses.

190 End Users, OEMs, and CMs in the manufacturing industry were asked for their thoughts on managing obsolescence, with an emphasis on important trends and challenges. 54% were End Users, 38% were OEMs, and 8% were CMs. Out of End Users, 68% were CPGs/Brand Owners and 32% were CMOs/CPOs. In addition to soliciting survey responses, 14 interviews were conducted directly, 5 with End Users, 4 with OEMs, and 5 with CMs.

To tease out potential gaps and opportunities, this study focuses on analyzing the differences between End User, OEM, and CM responses on a wide range of topics relating to obsolescence in manufacturing. With an emphasis on analyzing trends, challenges, and strategies related to obsolescence, this study seeks to provide industry stakeholders with statistics and analysis aimed at strengthening obsolescence management throughout the manufacturing supply chain.

Survey questions reported in this study are identified as "OEM", "End User", or "CM", indicating the party queried. To provide the most holistic picture, full question response tables have been included with all participant responses represented.

TOTAL

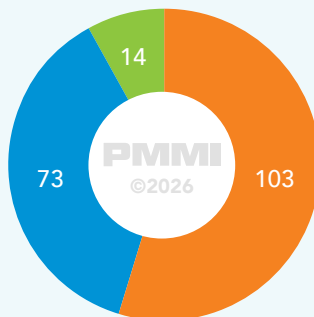
190
Surveys



14
Interviews



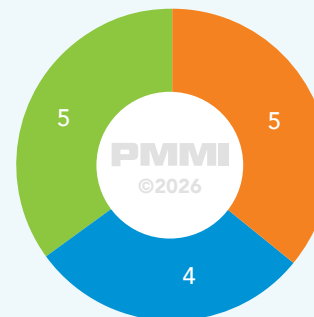
Survey Participants
n = 190



■ End Users ■ OEMs ■ CM

Quantitative insights were compiled from survey responses from End Users, OEMs, and CMs regarding the trends, challenges, and strategies related to managing obsolescence in manufacturing.

Interview Participants
n = 14



■ End Users ■ OEMs ■ CM

Survey respondents were asked to participate in direct interviews after completion. Interviews drilled down further into survey topics to glean additional insights and perceptions and lasted approximately 30 to 60 minutes.

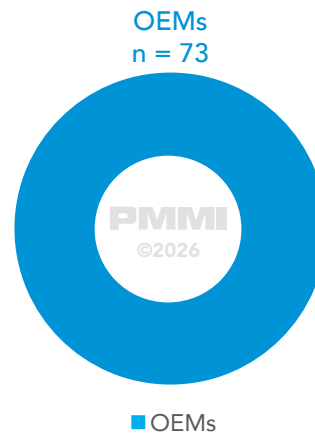
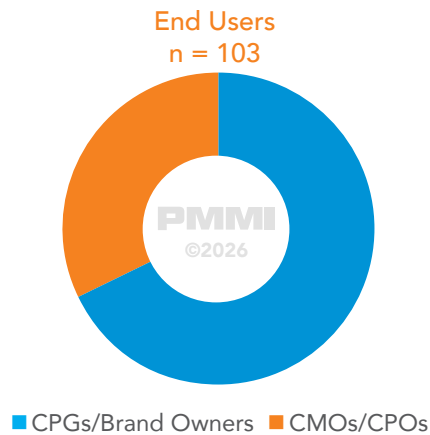
QUANTITATIVE AND QUALITATIVE

Survey participants represented three key stakeholders in the manufacturing industry that are directly involved with managing obsolescence."

End User participants included 70 CPGs/Brand Owners and 33 CMOs/CPOs.

OEM participants were all manufacturers of equipment used in a variety of different manufacturing industries.

CM participants were manufacturers and integrators of components used in a variety of different manufacturing industries.



In-depth interviews were conducted with 14 survey respondents.



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