



Rebound
Electronics

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ROM REPORT

Rebound Obsolescence Management

July 2024





What is Obsolescence?

Obsolescence in the semiconductor industry refers to the phase-out of components that are no longer manufactured or supported by their original producers. This often results from technological advancements, market demand shifts, and strategic business decisions by manufacturers.

Causes of Obsolescence

Technological Advancements

Rapid innovation in semiconductor technology leads to the development of new components that render older versions obsolete.

Market Demand Shifts

Consumer preferences and industry trends can shift, reducing demand for certain types of components.

Strategic Product Line Updates

Companies periodically update their product lines, discontinuing older models in favor of newer, more efficient versions.

Regulatory Changes

New regulations can make it impractical or impossible to continue producing certain components.

Supply Chain Issues

Changes in the availability of raw materials or production facilities can also lead to obsolescence.

Impact on the Industry

Supply Chain Disruptions

The discontinuation of key components can disrupt manufacturing processes and delay product releases.

Increased Costs

Companies may face increased costs due to last-time buys, redesigns, or sourcing alternative components.

Maintenance Challenges

Long-lifecycle products, such as those in aerospace and defense, face challenges in maintaining and repairing older systems.

Loss of Competitive Edge

Failure to manage obsolescence effectively can lead to a loss of competitive advantage as newer, more efficient components become standard.

Managing Obsolescence

Managing obsolescence in the semiconductor industry is vital to maintaining operational continuity, minimizing disruptions, and ensuring product reliability. As technological advancements accelerate and product lifecycles shorten, proactive obsolescence management becomes crucial for several reasons:

- **Supply Chain Stability** - Effective obsolescence management helps prevent supply chain disruptions that can arise from unexpected component shortages, thereby ensuring smooth production processes.
- **Cost Management** - By planning for obsolescence, companies can avoid the high costs associated with last-minute sourcing of obsolete parts, redesigns, and production delays.
- **Product Longevity** - For industries that require long-term product support, such as aerospace and defense, managing obsolescence ensures that critical systems can be maintained and repaired over extended periods.
- **Regulatory Compliance** - Staying ahead of obsolescence can help companies comply with regulations and standards that may require the use of up-to-date components.
- **Competitive Advantage** - Organizations that manage obsolescence effectively can maintain a competitive edge by ensuring the timely delivery of products and services.

Impact on the Industry



Proactive Monitoring

Regularly tracking component lifecycles and receiving early EOL notifications can help companies prepare for obsolescence.



Lifecycle Forecasting

Predicting the lifecycle of components can aid in planning for replacements or redesigns.



Multi-sourcing

Developing relationships with multiple suppliers can mitigate risks associated with the discontinuation of a single source.



Redesign and Upgrades

Continuously redesigning products to integrate newer components can help avoid obsolescence issues.



Strategic Stockpiling

Making last-time buys to stockpile essential components can ensure continued production and maintenance.

Navigating semiconductor obsolescence can be challenging, but **Rebound Electronics** has the expertise to manage it effectively. With years of experience in the industry, Rebound Electronics specializes in proactive obsolescence management strategies, ensuring your supply chain remains resilient and your production uninterrupted. Our dedicated team can help you forecast component lifecycles, source alternatives, and implement risk mitigation measures tailored to your needs. Contact Rebound Electronics today to safeguard your operations against the uncertainties of component obsolescence.



The Five Biggest Disruptions to the Semiconductor Supply Chain in 2024

1. Natural Disasters Striking Global Chokepoints

The semiconductor supply chain is increasingly vulnerable to natural disasters, exacerbated by climate change. Taiwan's TSMC, a critical player in the industry, faced significant challenges due to droughts affecting their water supply, crucial for manufacturing processes. These events highlight the growing threat of natural disasters, such as earthquakes in Japan and typhoons in Malaysia, which disrupt key operational bottlenecks.

2. Obsolescence Risks

Component obsolescence remains a significant threat, with an estimated 474,000 parts reaching end-of-life (EOL) in 2023. The accelerating pace of technological advancement shortens the lifecycle of semiconductors, increasing the frequency of EOL notices. This trend necessitates robust risk mitigation strategies, including multi-sourcing and lifecycle forecasting, to maintain operational resilience.

3. Factory Shutdowns

Factory shutdowns due to fires, natural disasters, or other emergencies can cause substantial disruptions. Recent incidents at Renesas Electronics and ASML underscore the industry's vulnerability to facility stoppages. Given the high risk of fires and the critical nature of continuous operations in semiconductor manufacturing, any shutdown can have far-reaching effects on the supply chain.

4. Vulnerable Shipping Routes

The semiconductor industry relies heavily on maritime shipping, with key routes like the Red Sea being critical chokepoints. The ongoing conflict in the region, exacerbated by attacks on commercial vessels, has significantly impacted shipping through the Suez Canal. This has led to longer shipping times and increased costs, affecting the global supply chain.

5. Trade Wars, Sanctions, and Export Controls

The U.S.-China trade conflict continues to disrupt the semiconductor industry, with export controls and sanctions impacting key players like Nvidia, Intel, and AMD. Micron Technology, for example, faces restrictions from both the U.S. and China, affecting its revenue and operations. These geopolitical tensions create uncertainty and complicate manufacturing practices.

These disruptions illustrate the complexity and fragility of the semiconductor supply chain. As the industry navigates these challenges, companies must adopt comprehensive risk management strategies to mitigate the impacts and ensure continuity.

Source: Z2Data Article Published last July 1, 2024xs



Triple-Tiered Trust: Rebound's Comprehensive Quality Control

At Rebound, we classify our products through a triple-grade system: Traceable, Trusted, and Prior Approval. This multifaceted approach ensures that every product meets specific, stringent standards, adapting to diverse quality need.



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Company	Component	Status	Replacement	Reason
Analog Devices (ADI)	AD7265 (16-Bit Dual Analog-to-Digital Converter)	Discontinued	D7177-2 by Analog Devices or LTC2387-18 by Linear Technology. These newer ADCs offer better accuracy, speed, and features.	Superseded by more advanced ADCs with improved specifications.
	AD7794BRUZ	Obsolete	AD7124-4, offering improved noise performance and power efficiency.	
	ADSP-2101	Obsolete	ADSP-2105, which offers similar functionality with enhanced performance.	
	AD620ANZ: Instrumentation Amplifier	EOL		
	ADG774BRUZ: Multiplexer Instrumentation Amplifier	EOL		
	ADM3311EARUZ: Transceiver	EOL		
	ADA4807-1ARJZ: Operational Amplifier	EOL		
	ADUM5401ARWZ-RL	Obsolete		
	AD8232ACPZ-R7	Obsolete		

Company	Component	Status	Replacement	Reason
Infineon Technologies	TLE4266G	Obsolete		
	BTT6200-2EKA	Obsolete		
	IRF540N	Obsolete	IAUC60N04S6N019H, which offers lower Rds(on) and improved efficiency.	

Company	Component	Status	Replacement	Reason
Intel	8086 Microprocessor	Discontinued	Modern microprocessors from Intel's Core or Xeon series, depending on the application. These provide vastly improved performance and functionality.	Obsolete compared to newer processors with higher performance and capabilities.
	8255A Programmable Peripheral Interface	Obsolete	No direct replacement; migration to newer microcontrollers or FPGAs is recommended.	



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Company	Component	Status	Replacement	Reason
Microchip Technology	ATmega328P	Obsolete	ATmega4809, providing more memory and enhanced I/O capabilities.	
	ATMEGA8-16AU	Obsolete		
	SST25VF080B-50-4I-SAE	Obsolete		
	PIC16F877A-I/P: Microcontroller	EOL		
	AT89C4051-24PU: Microcontroller	EOL		
	ATMEGA32A-PU: Microcontroller	EOL		
	MCP604-I/P: Operational	EOL		
	PIC16C57	Obsolete	PIC16F57, a pin-compatible upgrade with flash memory.	

Company	Component	Status	Replacement	Reason
NXP Semiconductors	LPC1114FBD48/301	Obsolete	LPC11U34FHI33/501, featuring USB capabilities and enhanced peripherals.	
	LPC11U24FHN33/201 (Microcontroller)	Obsolete	LPC11U68JBD100, providing higher performance and additional features.	Transition to more advanced microcontrollers in the LPC family.
	PCA9685PW,118	Obsolete		
	MC33887APVW	Obsolete		
	PCF85102C-2T: EEPROM	EOL		
	LPC1754FBD80: Microcontroller	EOL		
	MPXV5050VC6U: Pressure Sensor	EOL		
	BFU760F: RF Transistor	EOL		
	MC9S12XEP100: Microcontroller	EOL		

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Company	Component	Status	Replacement	Reason
ON Semiconductor	MC74HC595ADTR2G (Shift Register)	Obsolete	74HC595D,112, offering similar functionality with minor upgrades.	Consolidation of product lines and focus on more popular components.
	NCP3063DR2G	Obsolete		
	NTD5867NL	Obsolete		

Company	Component	Status	Replacement	Reason
STMicroelectronics	L78M05ABDT-TR	Obsolete		
	STM32F407VET6	Obsolete		

Company	Component	Status	Replacement	Reason
Texas Instruments	MSP430G2001	Obsolete	MSP430G2553 or MSP430FR2000 series, which offer enhanced performance and additional features.	
	LM2901 Quad Comparator	Obsolete	LM339 series, which offers similar functionalities with improved specifications.	The part is being phased out in favor of newer models with better performance and efficiency.
	SN74LS47N	Obsolete	Suggested alternatives include SN74LS47DW and similar drivers with updated specs.	
	TPS5450DDAR: DC/DC Converter	EOL		
	SN74LS32N: Logic IC	EOL		
	LM324N: Operational Amplifier	EOL		
	TLC555CP: Timer IC	EOL		
	TLC555CN (555 Timer IC)	Discontinued	LM555 by ON Semiconductor or TS555 by STMicroelectronics.	TI has shifted focus to newer, more integrated timer solutions.
	TLV320AIC23B	Obsolete		
	LM2937ET-3.3/NOPB	Obsolete		



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