The dip in end-of-life notices coming out of global chipmakers, first observed in 2014, has continued into 2015. However, with economic instability ongoing and new environmental regulations looming, now is not the time for buyers to become complacent about tracking – and planning for – obsolescence.

Global chipmakers issued fewer end-of-life (EOL) and product discontinuance notices (PDNs) in 2014 compared to the prior year, and this trend has continued into 2015, according to data from IHS, which tracks EOLs and PDNs.

Global chipmakers issued 4,740 EOL and PDNs in 2014, IHS data show. The number of EOL/PDNs in 2014 was down from 5,716 during the prior year and represented the smallest number of notices since 2011, when 4,570 notices were issued.

For 2015, IHS has tracked just over 2,500 EOLs through the beginning of September, suggesting that, based on historical trends, chipmakers will issue under 3,900 end-of-life notices for the full year.

A single EOL notice can include dozens of discontinued parts. IHS research reveals that 500,000 parts were discontinued in 2014, down from more than 1.1 million in 2013.

EOL notices are strongly influenced by the health of the economy and are typically inversely proportionate to chip demand. Strong economic conditions resulted in healthy semiconductor demand as chip sales increased by 9.4 percent in 2014, and also resulted in the decrease in EOL/PDN documents from semiconductor manufacturers last year.

The continued downward trend in EOL/PDNs in 2015 suggests that component lines stabilized thanks to relative economic stability in the first half of the year.
Weak demand is not the only reason that semiconductor companies halt production. Product lifecycles are generally shorter now than they were 20 years ago.

The tech sector, in fact, notched up 25 months of sustained growth among outsourced contract manufacturers (OCMs) through the first half. In addition, a key European Union environmental regulation – specifically the Restriction of Hazardous Substances (RoHS) – has essentially run its course with the OCMs. Part changes/replacements have by and large been completed by original equipment manufacturers (OEMs), so their product lines have stabilized. Indeed, leaded parts now account for less than 5% of global sales.

When the economy is weak, semiconductor suppliers are forced to make tough choices about which parts to continue to build in the face of weak demand. Often they decide to scale back production for parts that are older and aren’t selling as well.

However, weak demand is not the only reason that semiconductor companies halt production. Product lifecycles are generally shorter now than they were 20 years ago. In the 1990s, the average lifecycle of a semiconductor was 10 to 15 years. Today the average is about four to six years.

Competitive pressure also influences chip manufacturers to discontinue a part because it is better for business to sell components that are in high demand and have healthy margins.

Factors for Discontinuation: Product Consolidation, Regulations and Acquisitions

The number of chips discontinued due to production consolidation declined by 50 percent in 2014 compared to 2013.

Semiconductor manufacturers may reduce the number of chips they offer in particular product families. For instance, a specific chip may come in four different packages. The manufacturer may decide to reduce the number of packages to two and discontinue the related part numbers. In some cases manufacturers may even cut entire product families and urge customers to use the replacement families.

Environmental regulations often result in discontinuations and EOL notices. When RoHS went into effect in 2006, for example, many parts that contained lead, cadmium, mercury and other prohibited substances were discontinued.

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About 50 percent of EOL notices are issued with more than 150 days before a last-time buy, while 10 percent of EOL notices are issued within 30 or fewer days.

The acquisition of one company by another can also yield EOL notices to prevent redundancy. In many of these cases, some products produced by the acquired company are also produced by the new company.

**Giving Notice**

In some cases, the shutdown of a fab due to reduced sales can discontinue production of certain chips that were made at the facility. In others, the parts manufacturing may relocate to a different facility. Both instances require proper notice to prevent adverse impacts on the rest of the supply chain.

While EOL is not a new problem for the industry, electronics industry experts warn that it becomes a more acute one when chipmakers don’t provide ample notice when they decide to stop producing a semiconductor. OEMs may not have enough time to redesign a board and use an alternate part.

There’s a standard in the industry that says semiconductor manufacturers should provide customers six months’ notice in advance of the last-time buy. Unfortunately, not all chipmakers adhere to this standard. In fact, about 50 percent of EOL notices are issued with more than 150 days before a last-time buy, while 10 percent of EOL notices are issued within 30 or fewer days.

For an OEM customer, anything closer than one month does not allow time for a board redesign and thus requires a last-time buy. But a last-time buy can be risky. If a buyer purchases parts and demand for the company's product doubles, the manufacturer will not have an adequate inventory of the newly discontinued parts. In some cases, buyers are forced to consult the open market and purchase the parts from independent distributors or part brokers, a venture that can become costly depending on the demand for the component. There is also a high risk of purchasing substandard or counterfeit parts.

On the other hand, if demand for the product falls short of the initial estimate, the manufacturer is left with a surplus of parts that will only sell below their initial value on the open market.

**Collaborating with Customers**

Some companies are better than others in their process of ceasing production of certain parts. Some collaborate with customers before setting an EOL date for the part. Xilinx Inc. informs its customers about its EOL plans and even asks for their opinion regarding the timing. If the customers push back, Xilinx moves the EOL date to accommodate their needs. This case is unique, however, because Xilinx produces microprocessors and other chips for which there are no other sources.

For more standard parts, such as dynamic random access memory (DRAM) and static random access memory (SRAM), this type of collaboration between customer and component manufacturer is less likely to occur, and customers may receive much shorter notice. Of course, the good news is that standard parts are typically made by multiple manufacturers, so if one chip supplier decides to discontinue a part, most likely several others will continue to produce the chip. EOL affects some industries more than others. Typically, it has the largest impact on industries that have long product lifecycle such as defense and aerospace. Defense and aerospace systems are often built to last for years and they have fairly older circuits that risk becoming obsolete, even when the systems are still in the field or in production.

Some networking and communication equipment also has long lifecycles and requires older parts that also risk discontinuation by semiconductor manufacturers.

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Given all the factors that can impact end-of-life decisions, buyers have several reasons for avoiding complacency about EOL and PDNs. First and foremost, the global economy remains volatile and subject to a downturn. Witness, for example, the recent economic worries related to debtor countries in the European Union, including the long-threatened “Grexit,” the recent market instability related to China’s stock market plunge, and stock volatility in the United States and elsewhere. Moreover, OCMs are likely to be challenged to maintain their pace of beating year-over-year forecasts.

In addition, new environmental legislation in the European Union could have an impact on current compliant products, making them non-compliant. RoHS is due to add four new substances, and exemptions to the regulations continue to expire. REACH has added “substances of very high concern” (SVHCs), too.

With these and other issues looming, it is crucial for buyers to have up-to-date information about parts and their likelihood to become obsolete, as well as recommendations for new designs, in order to successfully manage EOL.

Keeping buyers informed can be a difficult task as manufacturers have different protocols for handling EOL notices. Some manufacturers send EOL notices only to buyers that have purchased the part within the last two years. Some post all their EOL notices to their websites. Others send notices only to their authorized distributors.

While buyers should closely track EOL notices, they should also monitor “not recommended for design” notices issued by chipmakers. Such notices essentially serve as first indications that that there is risk associated with using a particular part long-term.

There are tools that buyers can use to help manage EOL notices. IHS, for example, maintains an up-to-date database of EOL notices, discontinued parts and parts not recommended for design. The database also includes alternative choices for EOL parts and component life cycle risk scores.

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