

SILICONEXPERT COMMUNICATIONS

Years to End of Life:

How Reliable is
EOL Forecasting?

A SiliconExpert White Paper



SiliconExpert.com

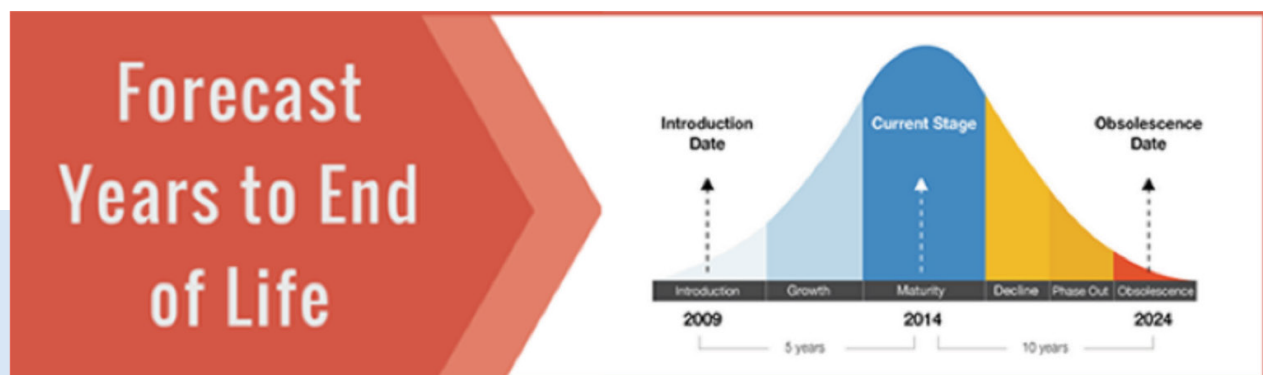
The Need for Proactive Obsolescence Management

Electronic component obsolescence presents challenges to product design that are often costly. Managing the risk associated with component lifecycles and weighing whether or not part numbers will last the whole lifecycle of a product is no easy task. As an engineer, you must balance product quality and functionality with specifications, regulation requirements and an obsolescence plan that factors both immediate and long-term component end of life.

In the event of part obsolescence, companies typically fall victim to a high demand

and limited market availability situations. Our 2021 PCN report found that 28.12% of product change notices (PCNs) were for part numbers with last time buy dates of “immediately,” meaning that waiting for a PCN may result in a costly re-design.

End of life forecasting data provides companies with the insight necessary to manage risk during the initial component selection process. This gives engineers the ability to match their component lifecycles with that of their projected product lifecycle and plan ahead with alternate part numbers that have similar form fit and function.



Forecast Years to End of Life

SiliconExpert provides estimated Years to End of Life (Y-to-EOL) as a data point in our electronic component database. The algorithm was developed as a joint partnership between SiliconExpert and The Center for Advanced Lifecycle Engineering (CALCE) at the University of Maryland to help customers plan for and

mitigate part obsolescence. The algorithm looks at historical patterns to determine the procurement life of an obsolete part and estimate the Y-to-EOL for active components. Regularly, SiliconExpert measures the accuracy and reliability of our End of life algorithm.

Test Methodology

SiliconExpert's estimated years to EOL algorithm tracks parts and identifies part numbers that exceeded their expected life span. This algorithm is the basis of our lifecycle risk prediction. With these predictions, SiliconExpert is able to flag products that are nearing obsolescence or may be subject to sudden EOL notice due to an algorithm tracking a part that has outlived its past life expectancy.

All part numbers registered in 2021 as EOL (LTB or Obsolete) are used for our algorithmic model. We always leverage the previous years of parts data to ensure our algorithms are based on the most current market trends.

Per our years to EOL algorithm, parts are flagged as either low, medium, or high risk. To assist in understanding how that spectrum falls, a medium risk component detected by our algorithm will identify an active component that is in its maturity phase soon to enter decline or end of life, per our historical data calculations. A medium risk flag is issued to respective customers using this component encouraging that customer to check with the manufacturer on future availability. These risk flags are meant to serve as a proactive tool for risk mitigation. Market conditions drastically impact component availability and thus these risk flags should be considered as a flag for review.

To measure the Y-to-EOL reliability, part numbers classified under SiliconExpert's obsolescence part numbers in 2021 are classified into two groups: part numbers that had a warning flag prior the obsolescence notification and part numbers which had no warning flag.

SiliconExpert classifies our predictions as either "accurate prediction" or "inaccurate prediction."

1. **Components accurately predicted:** The current lifecycle of the part is obsolete and the algorithm provided a warning of "medium lifecycle risk" prior to the obsolete notification.
2. **Components inaccurately predicted:** The current lifecycle of the part is obsolete, and the algorithm did not provide a warning "Lifecycle Risk was Low" prior the Obsolete notification.

Reliability Results

The overall accuracy of the SiliconExpert Y-to-EOL algorithm for 2022 is 92.97%. This is an increase from 92.89%, which we delivered in 2021. Please see Figure 1 highlighting our overall growth year after year in our prediction accuracy.

Our overall inaccuracy percentage continues to drop year after year. In 2013, our

inaccuracy hovered at 15%. That dropped to 11% in 2015, 9% in 2017, 7.41% in 2019, to 7.11% in 2021, to 7.03% in 2022.

The growth in our prediction accuracy is due to the number of part numbers continually being added to our database, as well as continual calibration of our algorithm. The more part numbers in the database, the better the algorithm

becomes in determining historical trends especially if the part numbers being added are obsolete.

With over 500 engineers monitoring and calibrating our algorithms, you can be assured we deliver the solid forecasting and intelligence to help you successfully mitigate the risk associated with reactive obsolescence.

Figure 1

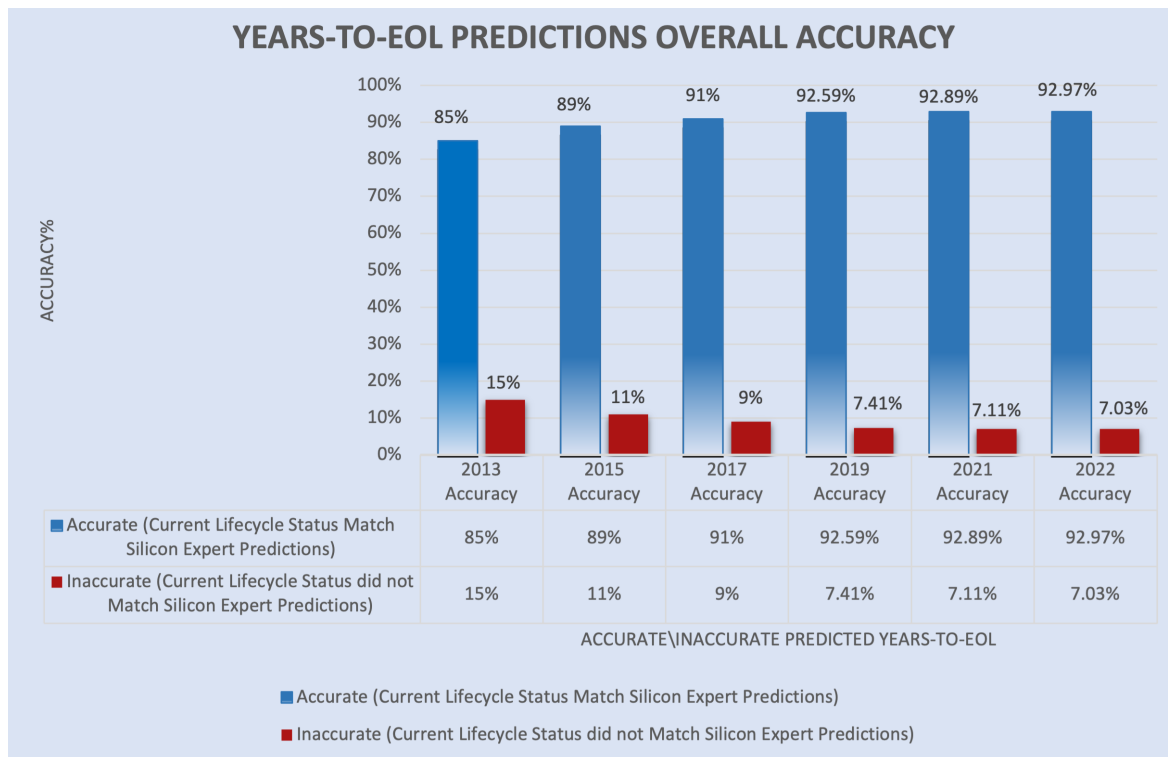


Figure 1 shows the accuracy percentages for part numbers classified as obsolete in 2021. A higher percentage is good for accurate predictions (warning flag added to part number prior obsolescence notice), and a lower percentage is better for inaccurate predictions (warning flag was not added to part number prior obsolescence notice).

Figure 2

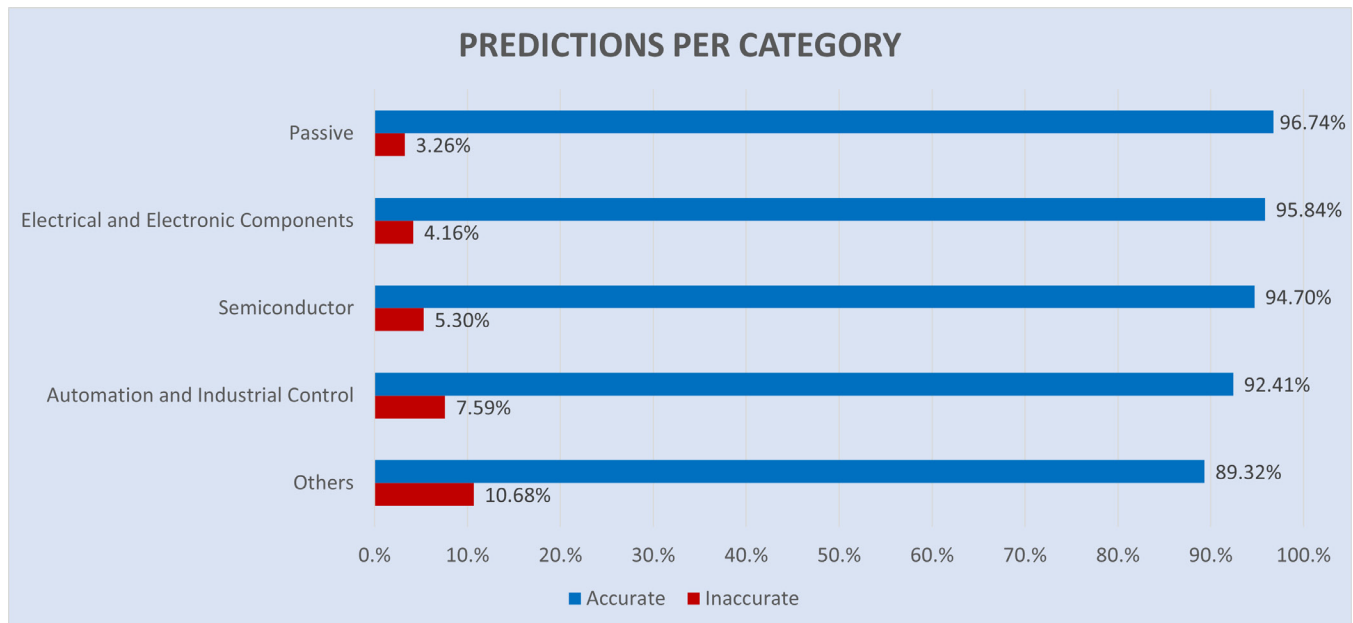


Figure 2 shows the distribution of accuracy percentages per category. The accuracy of prediction increased in 2022 to +0.08% over the 2021 value 92.89%. The inaccuracy prediction dropped to 7.03 % in 2022 compared to 7.11% in 2020.

Accurately Forecast End of Life

Designing a new product to find out after-the-fact a critical component is or has become obsolete could have detrimental impacts to project costs, timelines and delivery schedules. In the reverse, products with long life cycles are highly sensitive to market conditions forcing life cycle

change. In either instance, a proactive approach to obsolescence management is key to staying in budget, on time and profitable.

End of life forecasting data provides companies with the insight necessary to manage risk ahead of component

selection as well as through product sustainment.

This paper provides transparency into our Years to End of Life algorithm used by SiliconExpert to instill confidence in forecasting for proactive obsolescence management.

About SiliconExpert

SiliconExpert provides the relevant data and insight needed to remove risk from the supply chain.

Founded in 2000, SiliconExpert helps you make better decisions, faster. Over 400 electrical, software and data engineers handcraft our component database to deliver the most comprehensive and current tools in the industry. Customers globally use our solutions to manage risk, avoid redesigns, and mitigate obsolescence in innovative industries such as consumer electronics, telecommunications, automotive, medical and aerospace. SiliconExpert's customers include: leading commercial and government OEMs, top-tier authorized distributors, contract manufacturers and component suppliers.

Looking to be more proactive in your obsolescence management?

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