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Saving ICs from premature extinction

The short market life of many consumer products obscures the fact that many applications need and expect much longer component availability

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There are two things a project-team engineer dreads hearing years after a product has been released to market: 1) "we're having a rash of field failures" or 2) "we've received a "last buy" notice for one of the ICs in the product." In other words, there's another crisis to handle.

Solving field failures is a challenge, of course, but so is figuring out what to do when an IC in your product faces premature, unwarranted obsolescence followed by end-of-life extinction. None of the choices are pleasant: buy a large final lot and hope your assembly operation doesn't misplace them; look for an

alternate part, which can be very tricky; redesign the circuit--who has time for that?; or abandon the product altogether.

That's why my recent visit to Rochester Electronics (Newburyport, MA) was so interesting. This company's sole charter is to make ICs available after their original vendor has decided to stop making them. The parts they supply are not "knockoffs" or second/alternate sources, they are as good as the originals because they are made just like the originals. Rochester works with the original vendor in a variety of ways to do this, including licensing the design, buying the IC tooling (masks, etc), and even getting the vendor ATE equipment and programs, if necessary. They also buy up the vendor's excess wafers and unpackaged die, and then stock them to final package per a customer's order.

Why is the need for this service increasing? Not that long ago, the semiconductor industry served industrial, military/aerospace, commercial, and consumer markets in roughly even proportions (by unit volume), and the dollars and margins were in the first three segments, which required product support for many years after the original sale. The consumer market was less demanding, but still needed life of 5 to 10 years, and more.

All that changed with the explosion of mass-market applications with short product lifetimes, such as cell phones and MP3 players. Not only were the end-products obsolete and tossed out after a few years, but the components within were replaced by newer, better ICs in the next-generation product. The mindset of our industry changed from long-term availability to high-volume, short life-cycle products.

Consider this: one of the hoped-for next-big-thing opportunities for the electronics industry is the smart or automated home, with a sophisticated integral network, nodes, and controllers linking energy use, multimedia, everything. It's coming, maybe, but it is certainly taking longer than the pundits predicted or the industry would like, and everyone has a theory for why this is so. And here's mine: homeowners are not foolish.

They know it's one thing to have a TV need replacement in five or ten years, but the risk is very different for your house's infrastructure, which needs support (replacement boards and components) for twenty, thirty, or more years. Homeowners know that they are taking a big chance by going to a sophisticated system, which may need to be replaced in its entirety in a few years, at great cost and headache, due to unavailability of a single part or board. If the smart home is really going to become the norm, our industry will have to remember its previous commitment, now often pushed aside, to long-term support products.♦