

Obsolescence: Avoidance, Preparation, Conservation

Example from Enics Switzerland

Dealing with components that have been cancelled by their original manufacturers is a part of daily business in the industrial electronics branch. With an interdisciplinary approach, such obsolete components can be holistically managed – and the associated risks minimized. The partner in the development, production and care of industrial electronics takes on a central role here.

Electronic components are being replaced by newer technology at an ever accelerating pace. While on the one hand this means desired innovation and an economic driving force, on the other hand it presents manufacturers of longlasting, legacy products, particularly original equipment manufacturers (OEMs) in the industrial electronics branch, with a major challenge: The life cycle of electronic components is often shorter than the lifetime of their systems. Because of this, there exists the danger that promises made to an end-customer that a product will be producible over many years or that production throughout the service phase of the unit can be maintained, no longer can be kept – or only with enormous financial impact. The consequence is a considerable risk regarding company image and/or penalties. Obsolescence Management, i.e., ensuring the availability and process capability of electronic components over the entire life cycle of the customers' products, is therefore the central element in understanding the risk associated with cancelled components and thereby minimizing them.

OBsolescence AS A GENERAL PROBLEM

Basically, it is the duty of each participant in the value chain to provide replacement parts in order to assure producibility of a product throughout the agreed-upon timeframe. This duty includes, among other things, that the necessary information required for component management is made available, from component manufacturer all the way through to the development group of the end-customer. Among experts in the field, this information is referred to as Product Discontinuation Notifications (PDN) for component cancellations, and Product Change Notifications (PCN) for component-technical changes.

In spite of all efforts, this reactive information flow is not universally given since not all component manufacturers and suppliers comply with the corresponding standard JESD46D. The risk of not being informed about cancellations increases significantly if a lot of material is ordered at once and then lays in stock for

a long time. For example, if components have not been ordered within a two-year time period, one is removed as a customer from the suppliers information system and will certainly miss the next cancellations. In the event of such missed PDNs, blame cannot be pointed in one direction since the entire value chain is not optimally set up to handle these challenges.

A survey in Switzerland and Germany demonstrates proof that obsolescence, in the meantime, has become a real problem in general in the industrial electronics sector. Twenty of the forty questioned stated that they have to deal with more than five obsolescence problems each year. The danger of confronting cancelled components increases proportionally to the size of the component assortment.

In fact, reality also shows that cancelled components are being used already during new developments. This is basically a solvable problem – the partner for development, production and care of (industrial) electronics (the EMS) must «simply» know which components are affected! However, it is important to remember: Even an EMS specialist cannot give a 100% guarantee of information assurance since unforeseen events, such as natural catastrophes, insolvencies or other uncontrollable events, could also cause unforeseen obsolescence situations. A proactive risk assessment and the

Five Factors for a Successful Obsolescence Management

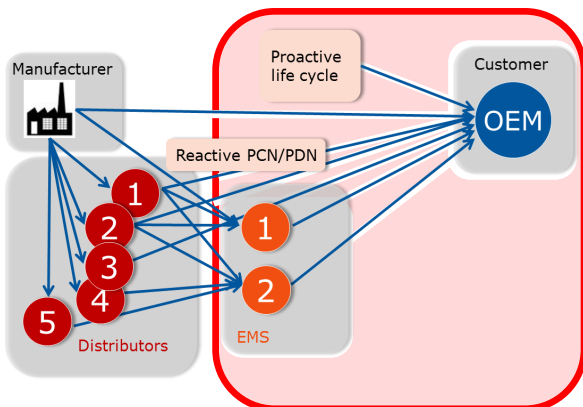
EMS services, i.e., specialists for the development, production and maintenance of electronics, are predestined for the role of providing Obsolescence Management because they function as the interface between component procurement and the OEM, through which all information has to flow. But what does an EMS partner need to have in order to provide a secured and economic Obsolescence Management? The five core factors are:

- Good sourcing strategies including technology roadmaps and contract management with the suppliers (distributors and manufacturers). Thereby, delivery assurance and accuracy is guaranteed throughout the product's life cycle.
- The capability to assess the technological risks associated with component lifetimes and to store components for long time periods.
- Alternative selection strategies as part of a professional, flexible procurement strategy.
- The capability to follow and predict the life cycle of components.
- Possess the possibility for storing components for long periods of time.

corresponding implementation of negotiated recommendations – in other words, an active Obsolescence

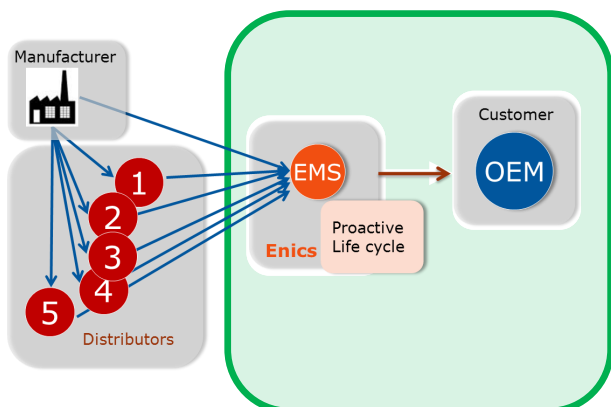
WITHOUT professional Obsolescence Management:

Original equipment manufacturer (OEM) at mercy of information flood.



WITH Obsolescence Management specialist:

Massively reduced complexity and effort for information handling for OEM regarding component discontinuations.



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Management – clearly reduce the risk of components being no longer available, with reasonable economic impact.

CLEAR CONCEPT USING THREE PILLARS

A professional Obsolescence Management requires interdisciplinary, functioning teams, and close collaboration among partners is mandatory. The first pillar represents the clever selection of components. This is made possible using technology and supplier roadmaps and is part of the procurement strategy. Using components during product development that will also be adequate in the future can lead to an optimal assurance of producibility throughout the entire life cycle. In particular, the close collaboration with – ideally audited – preferred suppliers helps the product developer to back the right «component horse».

During the production phase, the proactive data-banks used to monitor the life cycle become the second main pillar. Simultaneously, management of the flood of information must be guaranteed. In addition, the effort required to manage the rising number of «PCN/PDN» notifications from diverse sources has dramatically increased. Enics Switzerland, as an EMS specialist with its own OLM team, receives for example approximately 700 relevant «PCN/PDN notifications», which lead to 4800 customer information notices. Using the right tools and resources, like expert personnel and proactive data-banks, the EMS specialist can meanwhile analyze and channel this immense amount of information, and efficiently and completely inform the customer – an important boost for OEMs that work together with a professional OLM partner.

Last Time Buys (LTB) are the third pillar in this concept. Through the purchasing of available legacy material, the production of a product can be assured. Depending on the situation, a replacement manufacturer can also be searched that can deliver a technically equivalent alternative component. In the event that a suitable replacement is not availa-

ble, the customer may have to resort to a redesign. The resulting costs could, depending on the complexity of the product, lay in the six- to seven-figure range.

LTBs, for their part, require proper storage for long-term conservation. The components must therefore be checked against a thorough criteria catalog. Only in this way can sound recommendations be provided regarding the method of storage. For this, the know-how of technology experts is indispensable. Under normal storage conditions the process capability of components can hardly be expected to endure over a long time period. For long-term situations, high-tech storage systems are necessary. Enics Switzerland installed their own paternoster system for the long-term conservation of components in autumn of 2014. This makes it possible to care for customers' components directly and on-site in order to guarantee the highest level of security.

OLM – IMPORTANT TODAY, URGENT TOMORROW

Last but not least, attainment of security thanks to risk analysis, risk assessment and sound solutions: These are the things that distinguish Obsolescence Management. The necessity for OLM is certainly no temporary phenomenon: A flattening of the trend curve (that the life cycle of components gets shorter and shorter) is not foreseeable – quite the opposite. For the customer it remains important, both today and tomorrow, to have professional methods for the avoidance of obsolescence, as well as to prepare for their implementation with the optimum solutions. This way, the original manufacturer retains the guarantee that they will be able to fulfill their contractual obligations toward end-customers with regard to delivery obligations for years and decades.

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