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Contract Manufacturing Pitfalls:

What the Wrong Production Process Could *Really* Cost You

Conquering Complexity[®]

In the electronics industry, contract manufacturing — the outsourcing of design and production to a third party — has long been a strategy for reducing time to market and simplifying project oversight in response to fluctuating market demand. Today, however, many companies are choosing to go further, outsourcing greater portions of subassembly and device production. This increases the complexity of the entire production process. Even more importantly, it saddles manufacturing decision makers with a new challenge: *Determining how well a production process handles complex builds.*

8 Hidden Cost Centers — Uncovered



Whether your company is an OEM or a startup, you must be prepared to scrutinize the production process of a potential contract manufacturer. Ensuring your partner's process accommodates complexity is the only way to avoid the following hidden costs.

1 WORKER INJURIES AND TURNOVER

In the vendor selection process, the safety record is typically a minor consideration — if it's considered at all. Yet on-the-job accidents can have a pronounced effect on the overall cost, quality and timely completion of a project. That's because absences on the line — especially of skilled workers — can slow production and cause downtime. Even if replacement workers can be found, these individuals must still be trained and oriented to the equipment. It's a process that requires time and money. Some contract manufacturers may try to recoup these costs by passing them along to customers.

So what can you do to protect your project against injury-related costs? Choose a partner whose production methodology emphasizes safety and hazard elimination. Strong design and manufacturing partners will measure safety and turnover on their scorecards and can detail how they perform on this cost driver.

2 LATE DELIVERIES AND TIME-TO-MARKET DELAYS

In today's marketplace, there are very few high-quality, cost-effective contract manufacturers with experience in designing and producing a complete device. This lack of competition has led to a significant decline in customer service, with some vendors virtually ignoring production milestones and delivery



deadlines. However, for every day that a project is delayed, you're losing potential sales. And the rapid evolution of technology and the short lifespan of today's devices make the stakes even higher — a delay of a few months could mean missing your optimal sales window. In addition, late deliveries have a cascading effect as you try to keep pace with delivery expectations, leading to potential quality issues.

To avoid costly delays, it's essential to look for a contract manufacturer that not only respects deadlines, but can demonstrate an excellent record of on-time delivery. Always ask potential vendors to see delivery-related performance metrics.

3 EXCESS MATERIALS

While other industries have embraced lean manufacturing techniques, many contract manufacturers still rely on batch production — an approach with inherent drawbacks. Batch systems emphasize the mass production of large inventories, and they require raw materials and components to be bought in bulk and kept on hand. Because storing these materials is expensive, the contract manufacturer typically builds this into its price.

Changes in sales velocity also create problems for batch production systems. If demand for the finished product drops

during the course of the contract, the vendor will be stuck with worthless component materials and/or incomplete units. Some vendors try to hedge against this risk by padding the project cost.

That's why it's important to look for vendors whose production methods feature lean-manufacturing techniques and steps for market forecasting. This also eliminates tying up cash that can be better used to invest in growth to keep pace with customer requirements.

4 PROLIFERATION OF DEFECTS

Another downside of batch manufacturing: The potential for errors to spread throughout an entire production lot. Because parts go from one machine or work station to another until they reach the testing stage, it is possible for a mistake to occur — and go unnoticed — until the end of the process. That means an error at any point along the line could easily ruin an entire batch of units, forcing them to be reworked or scrapped. This, in turn, raises project costs and causes delivery delays.

In contrast, production systems that use principles of lean manufacturing are much better at heading off defects. That's because it has built-in processes and mechanisms for shutting down equipment as soon as a problem occurs, thus preventing its replication throughout the lot.

5 ERRATIC PRODUCT QUALITY

For most companies, this is the most obvious source of unanticipated manufacturing costs. After all, when a contract manufacturer does not deliver consistent quality, units must be reworked or scrapped. But poor quality production has less obvious consequences as well. The delays created by rework can mean lost sales, and if defective units find their way to your end customer, it can damage your company's reputation.

To avoid these issues, look for a vendor that stresses quality as a part of its culture — from management to production floor operators. Rigorous quality metrics should be built into the production process, and the vendor should be able to supply these for your review.

6 INCONSISTENCIES ACROSS FACILITIES

With some contract manufacturers, the level of quality, speed and service will vary from one facility to the next — especially among locations in “low-cost” countries. This creates a situation in which companies feel they must aggregate their projects at certain plants. In doing this, however, they're cheated of important efficiencies. For example, not being able to use the nearest production facility adds transportation and logistics costs.





Another problem: Differences in reporting systems that create project management headaches.

On the other hand, selecting a vendor with a standardized, across-the-board production process has multiple benefits. It not only simplifies project oversight and saves money, but gives you peace of mind that your needs will be met, regardless of the facility.

7 NO CLEAR PROCESS FOR NPI

New product introductions (NPI) require a special level of attention. Because the product or component has never been built before, effort must be invested up front in fully understanding and articulating the desired

characteristics and requirements of the finished unit. In addition, logical review milestones must be put in place throughout the prototyping and manufacturing process. Without a clear roadmap, the risk of errors — and extra costs — is high.

To prevent NPI missteps, seek out a production process that includes a rigorous system for defining product characteristics and ample review milestones.

8 LACK OF IN-HOUSE KNOWLEDGE

Best-of-breed contract manufacturers generally have in-house experts that can help OEMs control costs. For instance, they may be able to suggest lower-cost materials that won't compromise performance or quality. Or they may have industry knowledge that lets them aid sales forecasting and recommend target quantities.

To ensure that you can take advantage of these savings, select a vendor that offers this type of expertise.

The Process Matters

You need to ensure that the complexities of your project will be addressed — without adding extra cost. And that means doing your homework. Fully evaluate a potential vendor's production methodology. Ask about safety procedures and review recent performance metrics. Request a facility tour and be on the lookout for clutter and disorganization, as these can indicate ineffective management. (For more tips, see our Contract Manufacturer Validation Checklist.) And remember, a better production process means fewer surprises and better results.

The Contract Manufacturer Validation Checklist

- My contract manufacturer consented to a plant tour, so I could confirm that it was orderly, safe and efficient.
- My contract manufacturer key metrics (safety, cost, quality, delivery and people) and benchmarks its operation against industry standards.
- My contract manufacturer utilizes lean-manufacturing techniques and offers in-house support for market and demand forecasting.
- My contract manufacturer grades and measures its own suppliers to further guard against the proliferation of defects.
- My contract manufacturer stresses quality as a part of its culture and has the metrics to prove it.
- My contract manufacturer has a clear, standardized production methodology for all divisions and/or facilities.
- My contract manufacturer has a clearly articulated system for NPIs.
- My contract manufacturer offers value-added expertise, such as planning support, market and demand forecasting, sophisticated reporting, etc.

About Sparton Corporation

Sparton Corporation (NYSE:SPA), now in its 113th year, is a provider of complex and sophisticated electromechanical devices. We use our Sparton Production System (SPS) to produce breakthrough products and address complex manufacturing challenges — faster and more cost effectively. We have experience in many industries, including medical and biotechnology, industrial and commercial, and military and aerospace. Headquartered in Schaumburg, IL, Sparton has design centers and manufacturing facilities worldwide. For more information, visit www.sparton.com.



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