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Pamela Gordon

Get Ahead of Environmental Compliance

Redesigning to environmental requirements can provide financial benefits and competitive advantage.

If your company's managers are in a panic to meet new regulatory and customer requirements restricting hazardous substances and ordaining recycling, you might not realize that you are sitting on a gold mine resulting from product redesign and new product development.

Warnings about upcoming restricted-substance and recycling requirements are prevalent enough by now that most electronics company managers realize that, unless they act soon, sales for non-compliant products will shrink. But if the executives, managers, design engineers and marketing departments look at WEEE and RoHS *only* as regulations that need to be followed, their companies will miss business benefits from creating less expensive, more reliable, longer lasting and higher customer loyalty products (Table 1).

Capturing the Most Business Benefit

To capture as much financial and competitive benefit as possible, first, get senior executives' commitment to making substantive, positive changes in products and processes. Next, create a multifunctional design team with representatives from supply chain, manufacturing, finance, marketing and environmental management. The team will make decisions early in the product-concept phase to see that BOM reduction, lower-cost parts, reductions in manufacturing time and motion and competitive differentiation result from the redesign.

In addition to increasing the market share of your existing products by honing their design for environmental requirements, develop new products that help *other* companies meet WEEE, RoHS and upcoming environmental requirements such as EuP. For example, could your company design and market equipment or components that offer better solutions for lead-free production?

Leap Over Next-Generation Products

While your company is in a redesign process, leap over current technologies to reach third- and fourth-generation products before your competition thinks to do so.

Smaller, lighter products tend not only to attract more customers to your product but also to reduce costs of materials, manufacturing, logistics, reverse logistics and recycling. Designing products for longer life and creating new functionality in existing products promotes product reuse and postpones collection for recycling. Improving primary manufacturing processes means that ancillary processes are no longer needed.

Investigate tomorrow's technologies for your products today to meet environmental requirements more easily and lead the competitive pack.

The Goal: Earn More than You Spend

Some aspects of WEEE and RoHS will require higher costs during the transition. But through innovation and swift follow through, a company can offset this increase with a range of competitive and cost benefits.

Aspect of Environmental Compliance	Additional Benefits
Design-out non-vital parts when eliminating restricted substances; make products recyclable.	Smaller bill of materials (BOM), faster assembly time.
Design remaining parts to detach more easily for recycling.	The original assembly process is likely to be faster and easier.
Rationalize the company's products to minimize the number of products needing redesign by regulation deadlines.	Increase buying power for remaining products. Reduce costs of operations, marketing, sales and fulfillment.
Minimize moving parts and make remaining parts more durable, for longer life—delaying recycling.	Reduces complex, expensive parts. Delays costs for repair. Customer loyalty increases due to product reliability.
Provide upgrades in memory and software drivers via the producer's website.	Smaller BOM, no postage or handling costs for upgrades. Customer less likely to buy competitors' product for new functionality.
Reduce use of paints on plastic housing; decreases impurities to foster efficient recycling.	Paints are expensive/toxic; painting equipment and time are costly; clean up and permits required.
Use recycled plastic.	Can cost 50% less than virgin materials.
Increase the products' energy efficiency while designing for WEEE and RoHS.	Avoid redesign for equipment utilizing power (EuP)—the upcoming directive to reduce power consumption.

TABLE 1: Some benefits of redesigning products with environmental efficiency in mind.

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