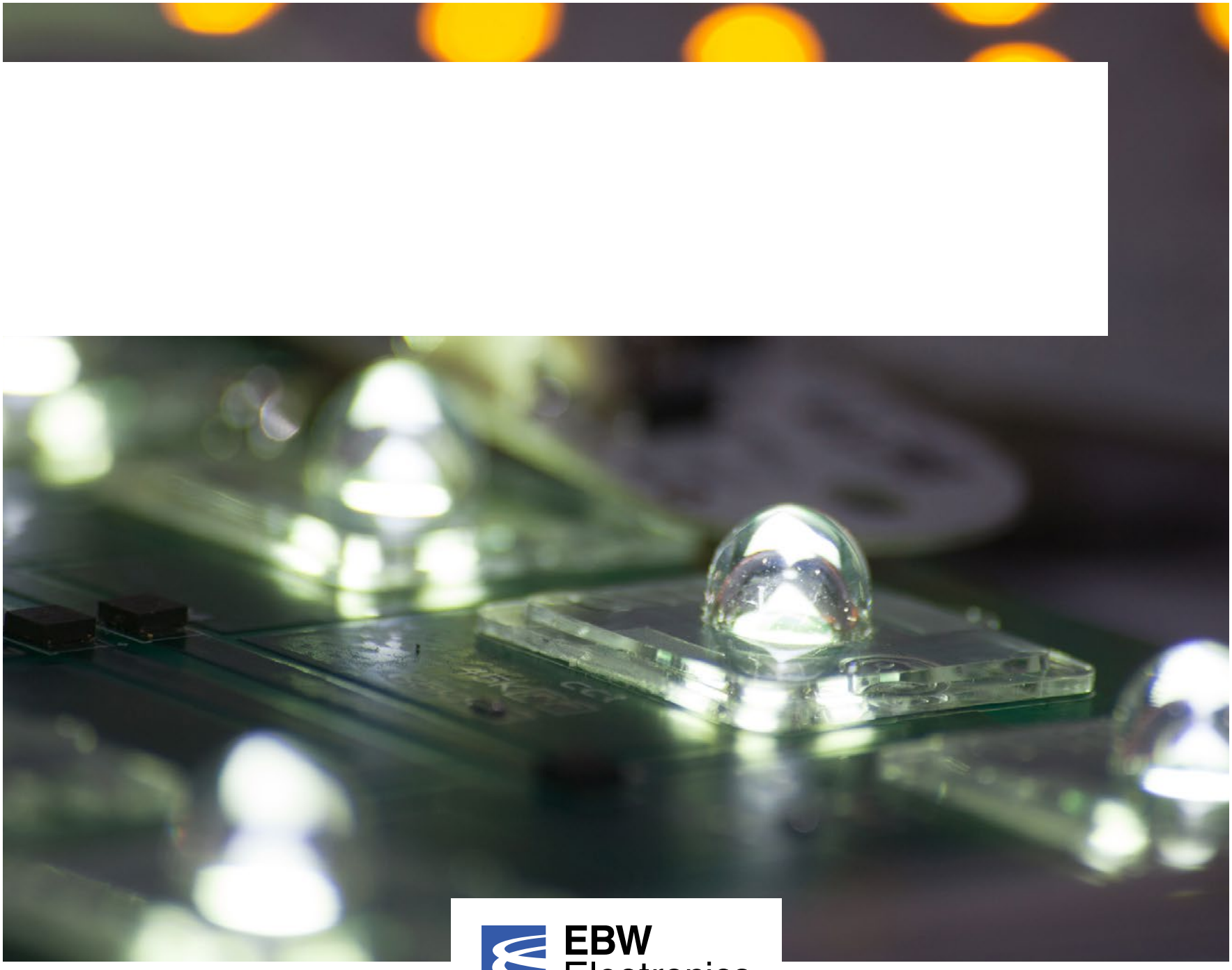


EBW Electronics

THE COLLABORATIVE OPPORTUNITY

The EMS Provider as a Strategic Partner

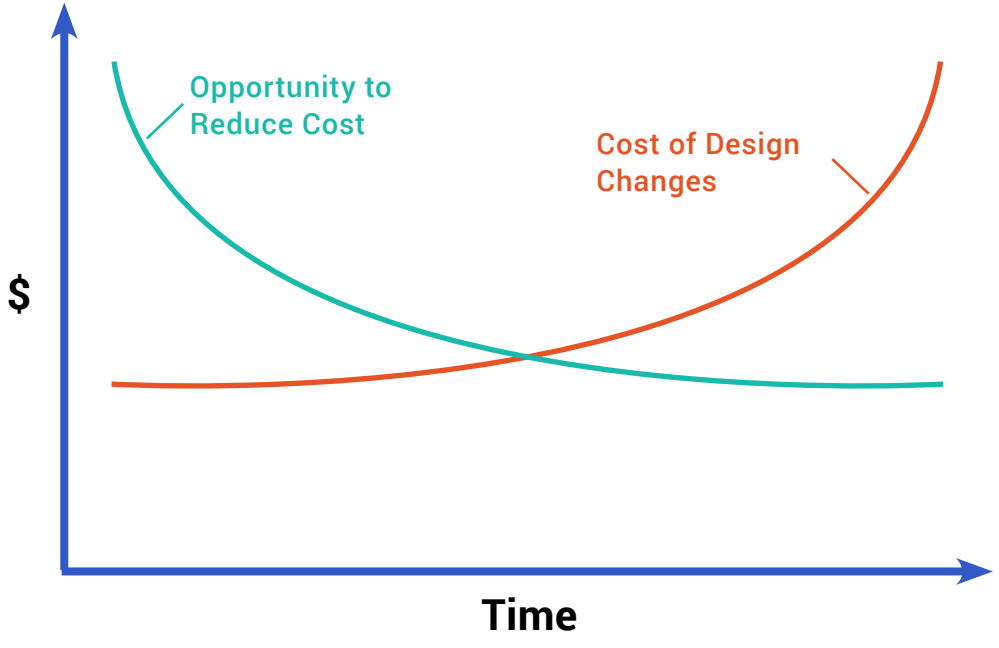
Traditionally, original equipment manufacturers (OEMs) have approached contract electronics manufacturers (CEMs) in the final phases of product development, typically after they have completed their product design. With a lowest-cost focus on short-term needs, they approach the CEM merely as a tactical vendor for manufacturing electronic components and perhaps re-designing mature products through minor modifications.

Unfortunately, this approach overlooks the significant value that benefits from the CEM's expertise and insights related to design, engineering and manufacturing processes. Indeed, CEMs are repositioning themselves as providers of electronics manufacturing services (EMS) in recognition of their broadening role and potential to significantly improve product quality and decrease costs for their OEM partners.

THE SOONER THE BETTER

In essence, OEMs face two choices: **(1)** they can rely on a CEM as a tactical partner while keeping all elements of the design phase in-house, or **(2)** they can approach their EMS provider as a strategic partner beginning in the design phase.

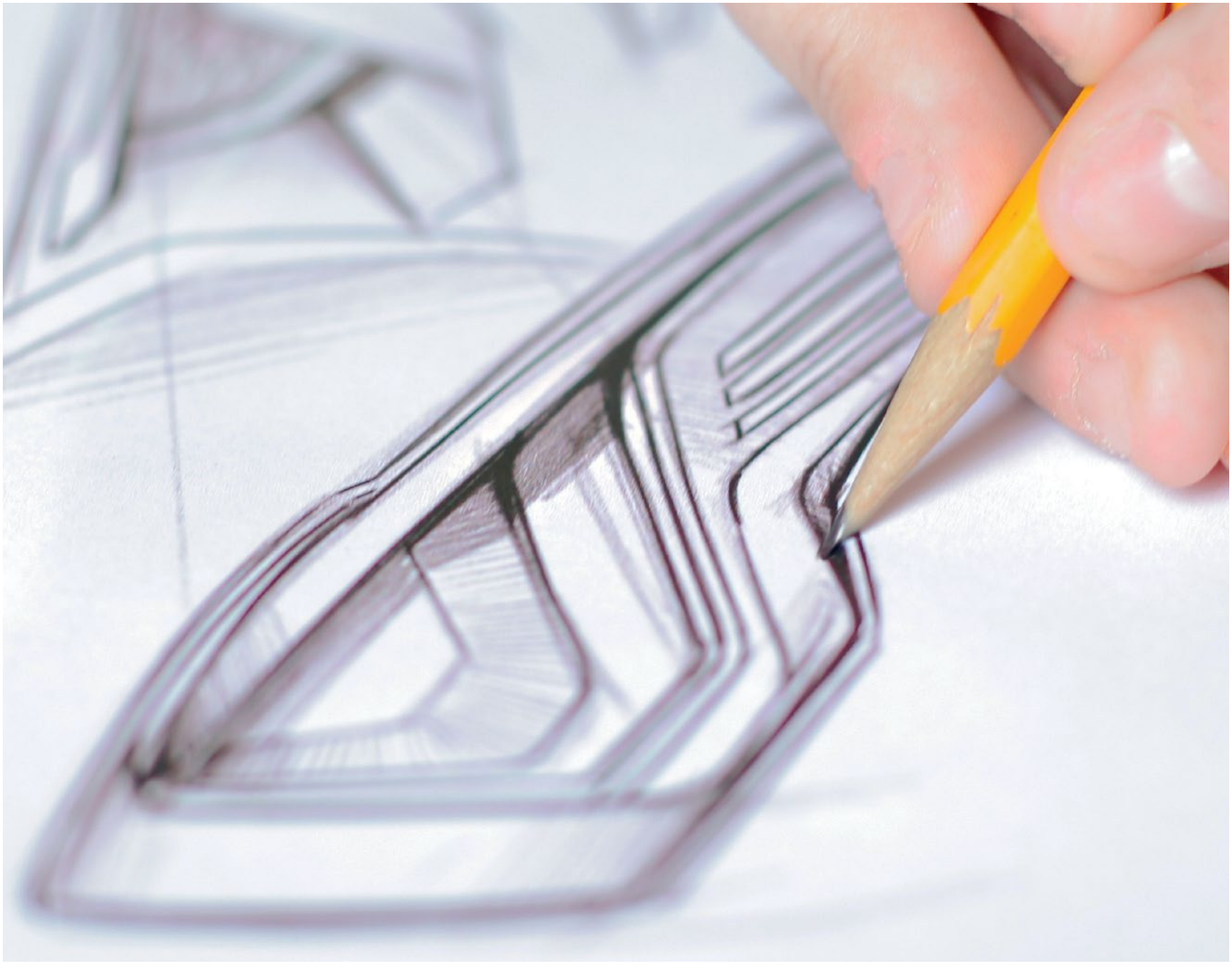
Involving an EMS provider in the design phase is critical. Why? Because at the midpoint of the product development lifecycle, it is already too late for the EMS provider to have a significant impact on overall product costs.[1] An investment early in the design phase results in tremendous savings in lifetime production costs as shown in the following graph.



COLLABORATIVE DESIGN

Outsourcing design doesn't need to be an all-or-nothing proposition. At one extreme, OEMs can keep all design in-house and outsource only manufacturing; at the other extreme, they can cede their control and outsource all design and development tasks.

More commonly, OEMs pursue design as a joint venture. They may have engineering teams from both companies collaborate on a joint design, or they may provide detailed specifications on a list of desired features to guide the EMS providers design efforts.[2] An experienced EMS provider can guide the conversation and help an OEM identify the most appropriate level of involvement in the design phase based on the OEM's goals and the nature of the new product being developed.



THE BENEFITS OF A STRATEGIC PARTNERSHIP WITH A EMS PROVIDER

1 IMPROVE PRODUCT DESIGN QUALITY

When OEMs invite their EMS provider to participate in the design phase, the collaboration can yield surprising improvements in product design and quality.

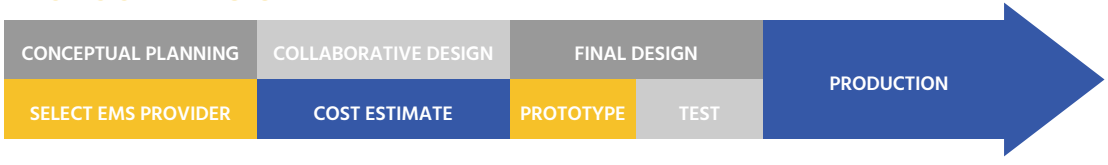
Once given the ability to influence product specifications, the EMS provider can design components and processes to better meet customer needs for functionality and quality, resulting in lower defect rates and more reliable, durable products. All these improvements increase customer satisfaction and customer loyalty, ultimately increasing the bottom line for companies throughout the supply chain.

2 DECREASE TIME TO MARKET

Working entirely in their domain, EMS providers are experts in managing complex processes.

They can leverage their manufacturing experience to ensure systems operate smoothly even as they approach capacity. By correcting potential flaws in the design phase—before they arise during production—EMS providers help OEMs deliver their products to market as quickly as possible.

EMS AS STRATEGIC PARTNER



CEM AS TACTICAL VENDOR

3 IDENTIFY ALTERNATIVE COMPONENT MATERIALS

As an experienced buyer, EMS providers are uniquely positioned to make recommendations for alternative component materials with greater availability, better functionality, and/or lower cost.

An experienced EMS provider can identify alternatives or replacements for sole-source products or products that are at risk of becoming obsolete. Then the rest of the design efforts can reflect those considerations, further improving the time-to-market and lowering costs.

EMS providers can also accelerate the time to market by suggesting ways to use standard or off-the-shelf items in place of custom or semi-custom components, a significant competitive advantage in the fast-moving high-tech industry.[3]

4 REDUCE COSTS

When EMS providers offer design-for-manufacturing (DFM) services, they can design lower-costing components and more efficient assembly units into the OEM's product.[4]

Venture Outsource provides a detailed analysis of the costs and savings of outsourced EMS providers, presenting hypothetical examples with varying "degrees of value-add associated with increased levels of outsourcing the OEM's supply chain functions to contract manufacturers that are completely vertically integrated."[5] The firm's calculations show that at every degree of value-add, the entire supply chain benefits from greater efficiency and cost savings.

5 REALIZE ECONOMIES OF SCALE

Dedicated design teams at OEMs represent a source of significant overhead, especially when they are under-utilized or even idle between projects.

By outsourcing at least some of the product design, OEMs can "enjoy economies of scale due to reuse of product designs and engineering teams."[6] These economies of scale become even more apparent when the EMS providers' design teams have access to specialized equipment and tools that the OEM could acquire only at significant expense.[7]

6 STREAMLINE PRODUCTION

CEMs' manufacturing experience positions them to identify ways to develop a modular design, design multifunctional components, and reduce the number of component parts and/or production steps.[8]

For example, in a recent engagement, EBW Electronics drew on its manufacturing experience to help the OEM design simplicity into automotive indicators, reducing the number of production steps and saving nearly 50 percent on assembly costs.

An experienced EMS provider can also develop testing capabilities and additional assembly units as it contributes to the product design, ensuring that new design requirements are rooted in the facility's capabilities.


LINE 20
LINE 10

7 LEVERAGE CAPITAL EXPENDITURES

As strategic partners, EMS providers can bring extensive resources into the relationship.

Specifically, they should be well capitalized and willing to invest in new equipment needed to manufacture the product. This reduces OEM's investment outlay in capital projects and specialized equipment. This is particularly advantageous for unproven products as the OEM wants to avoid significant capital expenditures that may have a poor ROI, but the EMS provider has a greater probability of using such facilities or equipment again in the future and therefore is more willing to make those capital expenditures.

APTEC (Accurate Placement Technology for Electronic Components) is EBWE's proprietary process that addresses headlight beam accuracy. This technology, and the new equipment required for production, was an investment made by EWBE to meet a customer's specific needs.

PURSUE YOUR TECHNOLOGY ROADMAP WITH CONFIDENCE

EBW Electronics is a world leader in LED circuit boards and LED applications, specializing in design and electronic manufacturing of printed circuit board assemblies. Originally a part of a larger company and now a widely respected expert in electronics design and manufacturing, EBW Electronics continues to evolve with the times while staying true to its family atmosphere.

Our team-oriented approach and desire for quality keep everyone working toward the same goal: making a quality product efficiently.

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