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The ODM Threat to EMS

Bill Coker

After winning the motherboard market, Asian-based original design manufacturers have set their sights on a new target—mobile phones.

What drives original equipment manufacturers (OEMs) to increase the outsourcing of the design and manufacture of their products? The answer is simply competitive market forces. These market forces include rapidly changing market dynamics such as increasing market demand, intense cost competition, development cost avoidance, rapidly shrinking product life cycles, inventory ownership postponement and, most importantly, product commoditization.

While the global market for mobile phones and personal communication devices continues to heat up, these market dynamics have traditional providers of these devices scrambling to maintain margins and grow market share by providing a wider variety of new product offerings.

Much like the personal computer (PC) OEMs, leading mobile phone manufacturers have three options to meet the growing demand for new product offerings: add more engineering capability and resources to generate more products faster and cheaper; outsource the design to third party contract design or electronics manufacturing services (EMS) companies; or source an already developed and tested product from a third party design specialist—the original design manufacturer (ODM).

Will history repeat itself in this highly competitive market segment?

Nokia, Motorola and Siemens make up 60% of the world's handset production.¹ Product realization strategies for all three vary, leveraging combinations of EMS and ODM providers. Motorola outsources approximately 20% of its handset product to EMS and ODM providers and is the only one of the three that extensively uses the ODM model.² Siemens outsources approximately 30% of its handset production to EMS companies and only uses ODMs for very specific projects.³ Nokia reportedly only outsources 20% of its global handset production and has yet to ODM a product.⁴

On average only about 40% of the total available market (TAM) is outsourced; the balance is internally produced by the OEMs.⁵ With a potential outsource upside of 60% and a mar-

ket projected to exceed 500 million phones next year, both ODMs and EMS companies are pitted against one another to win much desired market share.

To date, mobile phone manufacturers have had a limited number of EMS partners supplement their internal variable manufacturing capacities. They have used ODM partners to fill the lower end of the product offering and for less-strategic, emerging markets like Southeast Asia and South America, where the networks are less complex (voice/text).

Very few EMS companies build mobile phones today. Those few are hoping to defend their turf by acquiring similar ODM-like technical design expertise and solutions to compete head to head with the ODMs. While not a true ODM solution, these EMS providers' value proposition is based on customization rather than commoditization.

The Traditional ODM

ODMs are traditionally located in Asia. They include companies such as Arima, BenQ, Foxconn, GVC and HTC. These companies tend to leverage rapidly changing technology and develop a diverse road map of turnkey off-the-shelf design and product choices. The overriding value propositions associated with this model are time to market and inventory flexibility. By using an ODM, an OEM can reduce product realization lead times to three to four months at a fraction of internal development costs.

The ODM is hoping to sell the same or a very similar product to as many OEM customers as possible to maximize its return on investment and minimize short-term changes in demand. ODMs tend to be engineering-centric companies developing commodity-level products from standard building blocks or platform designs. Their offers range from subassemblies to complete systems. Many ODMs are more vertically integrated than EMS companies, providing internally produced components such as plastics, metal enclosures, cables and connectors.

Two major differences exist between the ODM and the EMS model. Unlike EMS providers, ODMs

typically develop, license and/or own all the intellectual property (IP) associated with the design. The second difference is the assumption of risk. ODMs tend to be less risk adverse, designing multiple variations of products, often speculating on materials and finished goods inventory and providing immediate volume flexibility. They also develop multiple alternate channels for the disposition of excess and unwanted products and materials.

On the negative side, the ODM model does not easily lend itself to customization. It is based on commoditization and volume. If an ODM has to customize a design for a particular customer, then it loses many of the benefits associated with its model. Another shortcoming is the ODM's lack of a global manufacturing footprint and regional after-market service capabilities. Products are typically produced in high volumes from one low cost location and shipped globally, limiting the OEM's ability to customize the product prior to consumption without adding additional cost.

According to research firm Technology Forecasters, Inc. (Alameda, CA), as the market recovers over the next two years, ODM growth will exceed EMS growth by 10%.

The Traditional EMS Company

Once a purely build-to-print business model, the EMS company provided just engineering and manufacturing services to its OEM customers. More recently, EMS companies have been diversifying their service portfolios to include everything from design to complete product fulfillment and after-market services. Many have made major investments in vertically integrated services such as plastics, metal fabrication, cables and even components, at the risk of becoming the overhead-burdened OEMs they replaced in the 1990s.

Why does an EMS company want to be more ODM-like?

Many compelling reasons exist, the first of which is increased margin contribution. ODMs typically report operating profits three to four percentage points higher than those of EMS companies.⁶ The second and most important reason is turf protection. EMS providers do not want to lose valuable market share to other EMS competitors or aggressive ODMs. Design is an enabling technology to feed their production manufacturing business.

In recent years and months, EMS companies have been strengthening their technical engineering capabilities by acquiring hardware, software and industrial design capabilities. Their

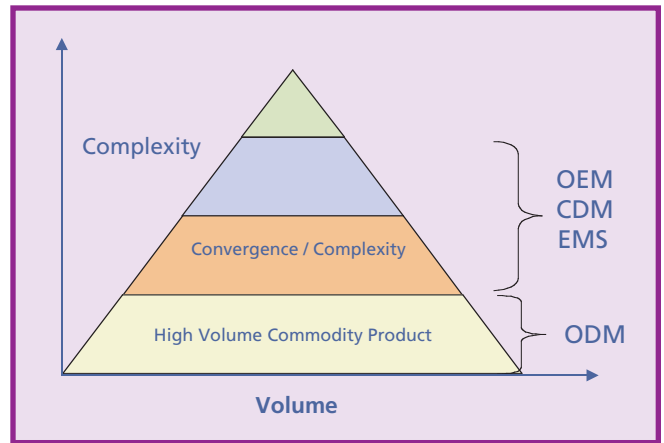


FIGURE 1: The ODM model and CDM/EMS model are both important to future OEM outsourcing strategies.

acquisitions strategically reflect their business execution strategies. For example: Sanmina-SCI recently acquired Newisys, a third-tier server development company, to support its high-end computing business strategies. Flextronics supplemented its existing mobile phone design capability by announcing the pending acquisition of Microcell. My own company, Elcoteq, recently announced its mobile phone engineering partnership with Cellon. In terms of engineering expertise the EMS companies have effectively leveled the playing field with the ODM.

By design, the EMS companies have chosen to leave the low-end commodity products to the ODM. EMS providers are focusing their resources on close, collaborative relationships with their OEM customers, and they provide more highly complex products than their ODM counterparts.

This custom design or collaborative design model (CDM) enables the EMS company to develop a much more strategic relationship with the OEM. The ODM model, on the other hand, is much more opportunistic or transactional. The benefits of the CDM model are fast time to market, specification flexibility and lower product development costs. A downside is that some of the inventory flexibility benefits of commoditization are lost.

The OEM's make/buy decision is complex. At risk is the OEM's brand name, commitment to quality, reliability and customer satisfaction. OEMs do not just buy technology or outside engineering service recklessly. They look for design partners that complement their internal resources, demonstrating and executing similar design and product qualification processes and disciplines.

Comparing the Two Models

So how do the competing ODM and EMS models compare? A variety of technology and contractual challenges face both the ODM and EMS supplier.

Compared to an ODM, the EMS companies are historically much more risk adverse. Traditional EMS margins do not support the acceptance of product liability or speculation of materials and finished goods inventories. From a contractual perspective, a

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number of legal and financial exposure issues should be considered. Intellectual property ownership, licenses and royalties need to be considered and factored into product price models. Indemnification against patent infringement, warranty and product liability exposures also must be taken into account. These complex business issues complicate both the ODM and EMS models.

Outsourcing implies access to lower cost material, labor and transportation. While ODMs manufacture high-volume quantities, their total material spend is a fraction of that of a Tier 1 EMS company. EMS providers have more leverage and provide lower material costs. While ODMs typically manufacture in China, they lack a global footprint and the ability to produce custom configuration and to support products close to the consumer. Interestingly, this shortcoming positions ODMs as potential EMS production and after-market service customers.

With the market positioned to grow again, substantial upside opportunities to gain market share exist for both the ODM and EMS. The greatest opportunity for the ODM model resides at the low end of the market where cost performance and flexibility is a prerequisite. Highly complex products will result from collaborative development between the CDM supplier and the OEM. These higher end products typically generate higher average sale prices and better operating margins.

So, let's answer the question: Is the emergence of the ODM model a threat to the EMS industry?

The answer is yes, the ODM model is a definite threat, but the EMS/CDM model provides most of the advantages of the ODM model and the flexibility of the EMS model.

The better question is: Can both models coexist? The answer, again, is yes—valid value propositions exist for both models (Figure 1). Those companies with superior design teams, close technical relationships with OEMs and manufacturing capacity in less developed markets will likely gain share over the next three to five years. ODM/CDM solutions will continue to gain acceptance as networks and chipsets continue to commoditize and product life cycles contract. ■

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