

Triumph of a new design paradigm

The reliance of ODMs and their OEM customers on outsiders for cell phone designs is staggering
By Karen D. Schwartz, Illustration by Carie Henry -- Electronic Business, 12/1/2002

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To paraphrase Tom Hanks' famous analogy in the movie "Forrest Gump," life in the cell phone industry is like a box of chocolates—you never know which company you're going to find inside. While the label on the handset may say **Alcatel, Ericsson, Panasonic, Siemens** or **Sony**, the design probably was supplied by either little-known companies like **Bsquare Corp.** or major chip makers such as **Infineon, Intel, Motorola** or **Texas Instruments**.



In fact, the reliance of original device manufacturers (ODMs) and their OEMs on outsiders for cell phone designs is staggering. Several tier-one OEMs, including Motorola Inc., Schaumburg, IL, and LM Ericsson, with U.S. headquarters in Plano, TX, have put their names on cell phones designed by others, according to industry analysts (see table, below). The consultants add that the cell phones made by second-tier OEMs—LG Electronics, Panasonic, Philips, Siemens and Sony—are almost all based on designs produced by others. As you might expect, the third-tier ODMs in Asia also are dependent on designs from others.

"I suspect most of the seven Taiwanese and 20 Chinese cell phone makers are using [third-party] designs or derivatives thereof," says David Carey, CEO of **Portelligent Inc.**, a consumer electronic consulting firm in Austin, TX, that has studied cell phone designs extensively.

The focal point of the dramatic shift in cell phone development is called a reference design or a platform. Two years ago, Infineon, Motorola and Texas Instruments just offered simple chipsets and some design schematics to OEMs and independent design houses (IDH) that wanted a fast and low-cost way to get a particular type of cell phone to market. Now the big chip makers, and a host of other reference design suppliers around the globe, offer increasingly sophisticated and complete packages. These reference platforms typically specify a processor, memory, I/O, user interface, radio-frequency circuits and core applications software. In some cases, reference platforms include the software to handle e-mail and Internet surfing. The ODM or OEM handset engineer then customizes the reference design to meet customer specifications. Typically, the OEM or ODM adds 20% of a device's functionality. Designers customize the user interface to include, for example, the name of the cellular service provider.

Even though most firms are using reference designs, the companies don't want to acknowledge it. Many OEMs and ODMs contacted for this article refused to acknowledge the use of externally developed designs.

"It's partly an issue of competitive advantage and partly because none of these ODMs or OEMs wants people to think they are simply using a generic pre-existing design," explains Carey. "They want to be seen as innovators of technology, whether they are starting with a chipset or a full design."

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