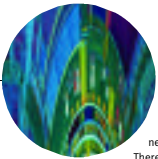# Focus Report:
Third-Party Design Services

**It takes two to tango.
Three to Third-party.**

They are viewed as mercenaries. They infiltrate to do the arduous work that people don't have the time, personnel, or possibly the skills to accomplish. There's a cornucopia of choices from which to select the correct mercenaries, and for whom it's the toughest job they'll ever love. They are third-party design services and they are fighting a common enemy – time-to-market. These engineers are electronic design's high-tech version of the A-Team.

"If you have a problem, if no one else can help, and if you can find them, maybe you can hire the A-Team."

Although outsourcing design has been around since the explosion in the electronics industry began, it has been in the past ten years that this niche industry became hip. In the past, design services were typically small organizations, filling in the gaps in the design process and offering expertise to customers.

"The market's been around since the 1960s, maybe earlier," said Gary Smith, chief EDA analyst at Dataquest. "It was made up of mom and pop operations, but in the last five years you've seen major EDA companies move into the market."

Outsourcing continues to be the trend today pushing the electronics industry. The impetus for this need has been the advances to system-on-a-chip, compact design cycles, and the seemingly omnipresent lack of qualified engineers. Indeed, outsourcing is a juggernaut of a trend, which of course benefits companies offering design services as well as the companies receiving them.

Jim Tully, a chief analyst at Dataquest, reported that there are over 900 companies offering services, with at least 600 of them in Europe. Although many different definitions of the design services market exist, Tully said that the market – which he outlines as outfits mostly doing outsourced hardware design – stands at about $1 billion.

A wave of hype

In the mid-1990s, some thought that design services would leave companies in the field skin-diving in an ocean of profits. Once the bubble popped in the late 1990s, however, reality began to surface. The extent of the cyclical nature inherent in this market became apparent. In 1998, Cadence laid off one-third of its 1,800 consulting personnel.

"Initially, there was a lot of hype and expectations from services," said Ron Collett, president of Collett International Research. "The reality has set in that services don't offer a lot of leverage. It's difficult to grow because it's difficult to replicate human beings. It's a difficult business model to sustain."

According to Dataquest, the market is growing at a rate of five percent per year. For any market to expand rapidly, a high amount of leverage, high scalability, and high-gross margin need to exist, noted Collett. Design centers may be getting the message. Service outfits are realizing that it's necessary to move beyond a pure bodies-for-hire, mercenary business model. In order to succeed in this competitive market, design services have learned to diversify their offerings.

"People are looking for a much tighter link between the client and the outsourced design team," said Tony Farinaro, vice president of Actel's (Sunnyvale, CA) Protocol Design Services Group. "You need to bring the engineers and the technology. When you look at what we do, we form a partnership with the client, an extension of their internal resources. They want it to be transparent and to work long term."

Another way to differentiate in the competitive market is with intellectual property. TSMC in Taiwan, although not trying to compete with design centers, has initiated a design service alliance program to facilitate the first-silicon success of its customers. Through the program, TSMC is concentrating on four areas: libraries, IP, EDA software, and design center alliances.

"For our alliance partners, IP is a key differentiation,"

The Internet is already playing a prominent role in the design service sector by allowing a diaspora of engineers to work on the same project by coordinating and communicating through the web.

Third-Party Design Services

Company	Services provided	Areas of specialization	Technologies	Training offered
ASIC International Oak Ridge, TN (865) 482-4616 info@asicint.com www.asicint.com	Analog, digital, mixed-signal - IC design ASIC & system design: spec through layout	Communications, audio, video ~ Large, deep-submicron ~ OC-192 FEC ~ Ultra-low power analog ~ Cryptography, cores and technologies	CMOS	Yes
Rapid Prototypes, Inc. Carson City, NV (775) 790-5000 vpengineering@FPGA.com www.fpga.com	High-performance FPGA design, systems design, signal integrity, data communications system design, HW/SW partitioning	Datacomm standards in FPGAs (PL4, Flexbus, OC-192, OC-768), synchronous RAM controllers for FPGA's, video codecs & signal processing	CMOS, LVDS, LVPECL	Yes
Sci-worx Palo Alto, Ca (650) 625-1888 info@sci-worx.com www.sci-worx.com	Turnkey design for digital, analog & mixed signal ASICs, SOC integration, synthesizable cores, consulting services	Communications, consumer, multimedia, broadband, networking, cryptography, car infotainment	Technology and vendor independent, CMOS, BiCMOS, Bipolar, FPGA	Yes
Virtual IPGroup, Inc. Sunnyvale, CA (408) 733-3344 sales@virtualipgroup.com www.virtualipgroup.com	ASIC, COT design services, RTL to GDS, p&r, verification	Digital, high-speed SOC DSM design flows	CMOS	Yes