

Discovering a Reluctant New EDA Tool Vendor

by Jonah McLeod - Editorial, isd Magazine

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Engineers looking for challenges set up a design shop, but their skill and success oblige them to become a tool supplier as well.

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It's Monday, Oct. 20, and I'm on a tight deadline trying to complete the feature article for this month's issue--the second part of my report on readers' experiences doing deep-submicron design--when I get a call from Tom Minot. Minot is a marketing guy I met while he was at Sun. He tells me that he's working for a start-up company called Micro Magic Inc. (MMI) in Sunnyvale, Calif., and that I have to see their new tools.



I agree reluctantly. This week is so tight with deadlines that people are all over me to finish my story so that they can ship the issue off to the printer. Still, I decide to go to MMI's office to see what it is they're so excited about.

At MMI, Mark Santoro, president and CEO, and the marketing manager that Minot reports to, Lisa Schmidt, show me two tools. Now, I don't normally get carried away with a new product pitch, but these two items make me sit up and take notice. Then, again, MMI is an unusual company. Mark and his co-founders are ex-Sun engineers who decided to form MMI so that they could take on engineering jobs that they found challenging--a rare example of choosing lifestyle over corporate ambition.

As they did their contract work, though, they found that they were spending more time integrating tools than doing real design. They decided to fix the problem by creating two tools, the ones they had just introduced to me, that would accomplish much of the integration--Sue and Max. Sue handles front-end design tasks, and Max back-end layout tasks.

To give you some idea of the power of these tools, I'll recount Mark's story of a recent contract job. The client wanted a CPU chip that ran the instruction set of a popular commercial RISC processor. Mark and his team created a clean-room design. Using their tools, they produced a full-custom version of the chip in just under two years. It had a clock speed of 600 MHz and a smaller die than the commercially available part (both were fabricated using a 0.25- μ m process).

That's when MMI and MMI's client were paid a visit by some men in really expensive suits from the company that owned the commercial processor. Following the visit, the project was put on permanent hold.

MMI was able to achieve such a fast turnaround for the processor design, and such an impressive result, largely because of Sue and Max. Sue takes all the front-end tools a designer normally uses--simulator, synthesizer, floorplanner, and so on--and links them together so that they share data. For example, when you create a floorplan of a design, Sue automatically back-annotates the path delays to your synthesis and simulation tools.

At the back end, Max provides full placement, with similar functionality. Additionally, with Max you can manipulate the layout by moving elements in your front-end schematic.

Together, Sue and Max can perform jobs like identifying a critical path and providing a node-to-node value for the delay. Such functions are done with a couple of keystrokes.

The tools offer a real advantage in that they allow rapid iterations on a design problem, so you get much faster feedback on it. Today, scripts can automate the flow between one tool and the next--say, synthesis and floorplanning--but moving data back and forth between them is a time-consuming task.

After a demonstration, I ask Mark and Lisa how the company intends to sell Sue

and Max. I then learn that MMI has entered the EDA business reluctantly. Initially, the company wanted to sell engineering services and intellectual property, but they kept encountering customers who demanded to have the tools as part of the IP sale.

The designers, however, are what strike me most about MMI: The people who created the tools are using them to do real designs. *

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