EDA vs. NIH: Where’s the Value?

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Position

Today’s leading EDA companies provide design technologies not only with "point tools", but via "tool suites" that support well-integrated, automated, and proven methodologies and flows. Efficient design teams not only depend upon but also aggressively leverage these existing solutions to their advantage. They recognize that the value added by their products comes from innovative features, better performance, and solid execution to meet market opportunities - not from a customized design and test flow with marginal business value. Due to the broad acceptance of standard structured test methodologies, many DFT and testing issues are now common across a wide range of product segments, system complexities, and organizational environments. Commercial solutions exist to address both specific problems and to automate the entire flow. It is very difficult and very expensive for a design team or internal CAD organization to develop and support tools and flows that have significantly greater long-term value than a state-of-the-art commercial solution simply because EDA companies can amortize their efforts and costs across a much larger number of designs. This is not to say that few designs present unique test challenges. But where existing solutions fall short, custom solutions should be developed which complement commercial tools and flows. Despite this obvious goal, legacy design flows and proprietary testability schemes continue to be pervasive in many systems houses and vertical organizations. To integrate successfully, partnerships between the design teams, CAD departments, and EDA vendors must be formed to understand the long-term issues and implement an acceptable solution. None of the parties can be expected to solve these problems alone and a strong partnership ensures that the EDA vendor’s portfolio can address their customers’ specific requirements.

As a model, look at how the relationship between fabless design companies and their semiconductor foundries has matured over the past 10 years. Today, only a small handful of designs are manufactured using a customized fabrication process. Designers assume they will have access to the best silicon technology, and work closely with their silicon vendor to understand (and even impact) its future direction. But they do not expect a foundry to individualize their process, nor do they pursue proprietary manufacturing technology as a competitive differentiator for their products. The relationship between design teams and EDA vendors can also be expected to follow a similar path. The costs and complexity to develop and support the next generation of design tools and fully integrate these into usable flows continue to multiply. Likewise, designers can rarely afford the latencies and expense associated with customized tool features. Given the current technology and business trends, it is important for all sides to recognize that the real value from the EDA industry increasingly lies in reliable and predictable flows and in specialized support and knowledge services.