

The Return of the Transistor

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Abstract

For the past thirty years, chip design has been getting farther and farther from transistor dynamics, as digital chip designers have driven complexity forward relentlessly. This has only been enabled however, by 1) the absence or scarcity of analog circuits on board with digital and 2) abstracting away the behavioral complexity of transistors. All this is now changing. These future trends will demand a dramatic increase in the use of full custom design and optimization, including the transistor-level behavior. The result is a need to be able to manage both functional and behavioral complexity, simultaneously. The industry is only staffed for the former; in large part the current generation of digital designers have all but forgotten electricity, and it would take over a decade for the industry to re-tool to be able to handle transistor-level behavior on a broad basis. The situation demands alternative approaches to chip implementation which can comprehend both system-level specifications and transistor-level behavior. Only then can the return of the transistor be welcomed, rather than feared.

Curriculum Vitae



Thomas Heydler joined Barcelona Design as CEO in Sep. 2001 from InterPro Business Solutions Inc. There he was president and CEO too, responsible for repositioning and streamlining the business to become a leader in Procurement Management Services. Prior to joining InterPro, Mr. Heydler held several senior management positions with Documentum, Cadence Design Systems and Siemens. At Documentum, he took a leadership role in growing the company's business. While at Cadence, Mr. Heydler built Cadence's European business, and helped drive the company in the transition to an Electronic Design Solution corporation. At Siemens, Mr. Heydler managed the Electronic Design Automation Business Unit. Mr. Heydler holds a Master in Electronic Engineering and Computer Science from the Technical University Munich.