

The growing importance of microelectronics from a foundry perspective

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Abstract:

Microelectronics is the dominant industrial technology of today. Its rate of innovation, spelled out by Moore's Law, is exceptional by any commercial metric, especially, as it has been on this trajectory for almost 40 years. It is not surprising, that other industrial sectors are taking advantage of the innovation engine of the semiconductors for its own product innovation: Cars are safer and more economic, medical diagnostics are performing to a significantly higher level, and energy efficiency from the generation to the consumer is a lot more efficient. "The Internet" has become the basis for our communication, organization and planning in our economies with significant impact to our society.

However, the Semiconductor industry is under a powerful transformation marked by the following trends:

- Design Complexity is facing new challenges, as technological complexity is transferred to the design space at an accelerated pace
- The SOC is dominating the design space
- Intelligent Things are emerging with unprecedented cognitive and motion capabilities
- The supply chain transformation is in full motion, with the foundry model at the forefront