

# The rise of IoT, and the role of EDA

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On April 19th, 2015, we will celebrate the 50th anniversary of Moore's law. Process technology went from several microns to a few nanometers, transistors integration capabilities increased millions of times, and volume production grew from the few thousands of units in the early digital computer era to the several billions in the smartphone one. IoT is expected to bring volume production up by one, and perhaps even two orders of magnitude in the next decade. Today, IC volume growth has been anchored on smart phones. Smart everything (cars, homes, cities) may be the next killer application, which would fuel the volume growth. IoT devices and systems will certainly span the entire spectrum, from extremely advanced and complex to "disposable". They will make metrics such as reliability and resilience, be as important as performance, power, and area. But in order for IoT to happen, our industry should dramatically improve its efficiency – all "resources" are scarce, and therefore precious. Flexibility – systems are heterogeneous by nature – and productivity – to deliver the best possible quality-of-results within the allotted turn-around-time – will be critical. As both process technology and system complexity increase, advanced EDA will be a key enabler. Advanced design implementation infrastructure, tools, flows, and methodologies will deliver a competitive advantage, and advanced IP sub-systems, consisting of hardware and software solutions will deliver complete, complex functions, ready for integration, greatly simplifying the IoT "siliconization". These two components show the only viable path towards the trillion units many industry leaders are envisioning.