

CircuitSutra:

Blending ESL with Current Methodologies

Advanced tools and methodologies have become absolutely essential to achieve the necessary productivity, quality, cost and performance expected in a design process because of the complexities of the current systems. One of the important tenets in ESL Design is the necessity of early design analysis.

As per Gartner Dataquest's definition, Electronic System Level (ESL) encompasses the concurrent design of hardware and software parts of an electronic product.

However, the important term in ESL is 'system'. All designers probably have their own description of what a system is, depending on the subcategory of the product they're working on, and at which design stage. The trouble for them is finding the right ESL design tool adapted to their needs and their vision of what their system is. The industry needs to move to system design: EDA, IP suppliers and the customers. ESL can vastly improve time to market and lower SoC implementation risks if the design ecosystem fully embraces the technology.

Circuitsutra is a prominent name in providing Electronic System Level IP and Services. CircuitSutra offers SoC modeling services to top Semiconductor & System companies in IoT, Automotive, Mobile, Storage, Networking domains etc. They work in close collaboration with their partners in the industry to define modeling standards and disseminate the best practices to their customers.

Intellect behind the Innovation

Energetic self-starter with absolute dedication, **President and CEO, Umesh Sisodia** founded CircuitSutra in November 2005 with an objective to build a company in India that would be a leader in its technological space and have a transformational impact on the semiconductor industry across the globe. Umesh honed his technical and managerial skills by working at various levels in the Semiconductor industry for over a decade, before taking the entrepreneurial plunge. Headquartered in Noida (India),

CircuitSutra has development centers in Noida and Bangalore.

All of Umesh's and his team's efforts put into CircuitSutra are well rewarded and the company continues to thrive for more. CircuitSutra has been awarded the *ISBA Entrepreneurship Award* in 2008. Recently CircuitSutra was felicitated by *Accellera* in *Design and Verification Conference 2016* for popularizing the adoption of Accellera Standards in the Indian Semiconductor Ecosystem. CircuitSutra has also participated in various Industry Conferences like NASCUG, ESCUG, DVCon Europe, EDSFair Japan, IP-ESC France etc.

Best-in-Class Services

CircuitSutra is an Electronics System Level (ESL) design IP and services company which specializes in SystemC modeling of Electronics Systems and Semiconductor SoCs. Its core competencies include Virtual Prototyping, Architecture and Performance Modeling, and SoC & System level Verification.

CircuitSutra helps their customers in reducing the time to market by using modern simulation techniques based on C, C++, SystemC, etc. Their strong portfolio of modeling IP and methodology enables them to quickly get started on the customer's project, and ramp up the new team members on the required modeling concepts. They have developed a training methodology that facilitates easy migration from adjacent domains to ESL domain; thus expanding the talent pool in this field.

CircuitSutra's mission is to accelerate the adoption of ESL methodologies in the Industry. With a deep knowledge of various standards being formulated in SoC modeling domain, they develop standards based SystemC models that can integrate with any ESL tools.

Flourishing From Bud to Blossom

CircuitSutra has maintained a laser like focus in excelling in the ESL field. This has helped them to overcome

uncertainties that occurred over the last decade and establish a strong foundation to stand on. When CircuitSutra was conceived in 2005, SystemC was an emerging technology. They have seen SystemC's evolution from research phase to pilot projects to mainstream adoption, and have actively contributed in its journey.

CircuitSutra has worked with large-scale and small-scale businesses over the years, participated in standards bodies and conferences, worked across multiple use cases and also evolved a

standard platform and a tool independent methodology (CST Modeling Library) to cater to multifarious needs of their customers. Moreover they have established partnerships with industry leaders like Synopsys and ARM to better support their mutual customers. Today CircuitSutra is a leading player in the SoC modeling domain.

Opportunities and Challenges in Today's fast-paced Industrial Regime

It has become imperative for organizations to shift from a traditional product sales-centric business model to a service-oriented business model in order to keep up with the changing trends. Embedded technology

solution providers have to provide high quality, high performance products with long life cycles which are required by embedded and applied computing markets. Virtual Prototyping plays an important role in embedded technology as it helps to dry-run and test the product before committing to a particular design. CircuitSutra has designed its modeling methodology which is a combination of reusable modeling infrastructure, modeling services and training.

Envisioning Advancements with Advantageous client-centered Models

CircuitSutra provides cutting edge expertise in the modeling domain and the re-usable modeling infrastructure to its customers. CircuitSutra has gained



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President and CEO
CircuitSutra Technologies

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broad and deep experience in working across multiple ESL use cases, tools and industries. This enables them to assemble a project team very quickly, take responsibilities to ramp up on required modeling concepts, without impacting cost and schedule for its customers.

They are also on the top of new technologies that are emerging in the field like UVM-SystemC, SystemC AMS, etc. so that they are able to ride the technology wave and enable their customers to leverage the best in class solutions.