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**SYNOPSYS CLOUD
CHIP DESIGN
PLATFORM USER
EXPERIENCE
SURVEY RESULTS**

**AN INFOSYS CONSULTING
ADOPTION AND BENEFITS
STUDY**

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ABSTRACT

This paper explores chip designers' overall experience with the Synopsys Cloud chip design platform and the FlexEDA business model – including bring-up time, quality, and value – against the backdrop of their primary goal of completing their semiconductor design project.

Synopsys commissioned Infosys Consulting to perform an adoption and benefit analysis study for an existing set of production customers of Synopsys Cloud. We interviewed design engineers and CAD managers from these companies in the semiconductor industry. The consolidated data is captured in this user experience survey analysis and overview.

Overall, customers saw an improvement of 40% in time-to-results compared to their traditional EDA deployments.

GOALS AND OBJECTIVES FOR THE TTM BENEFIT ANALYSIS

Synopsys is a leading provider of advanced tools for semiconductor chip design, verification, IP integration, and application security. Synopsys Cloud with FlexEDA combines the availability of advanced compute and storage infrastructure with unlimited access to EDA software licenses on-demand. Customers can mix and match between two deployments – Bring Your Own Cloud (BYOC) and Software-as-a-Service (SaaS) – to best address their evolving requirements. Synopsys Cloud BYOC with FlexEDA supports the AWS, Microsoft Azure, and Google Cloud platforms. The SaaS offering leverages the Microsoft Azure cloud platform for all infrastructure resources.

Synopsys wanted to conduct a time-to-market benefit study among its current customers who have adopted the Synopsys Cloud platform with the FlexEDA business model to better understand their customers' experience.

This study focused on uncovering and understanding customer feedback and experiences using Synopsys Cloud. We analyzed their views on adoption, motivation, objectives and goals, and quantitative and qualitative benefits derived from Synopsys Cloud, focusing on efficiency, productivity, and operating agility.

FINDINGS

WHY CUSTOMERS ADOPTED SYNOPSYS CLOUD

Synopsys Cloud SaaS deployment offers built-in EDA tools backed by tailored compute resources that allow customers to customize their environments to meet their chip design requirements. The customers that we interviewed were using a variety of Synopsys digital, analog, and verification tools.

The customers reported a variety of motivators for adopting Synopsys Cloud SaaS, including cost, stability, flexibility, and scalability. We outline below some of the key drivers in more detail:

- **Flexibility and scalability:** One of the key drivers for implementing a Synopsys Cloud SaaS solution is related to **the flexibility of access to unlimited licenses** and the ability to ramp up and ramp down licensing as well as compute resources. Peak demands required the addition of compute power and licenses as needed, which was enabled by Synopsys through their FlexEDA pay-per-use (PPU) licensing model.
- **Cost of set up:** Having to hire technical experts, procure, and set up environments from scratch—whether on-premises or on other cloud platforms—led the customers to choose a SaaS solution. The ready-to-go nature of the Synopsys Cloud SaaS platform, which is specifically geared towards chip design, allowed customers to **avoid high set-up costs**.
- **Performance stability:** Many customers we interviewed reported experiencing performance disruptions in their traditional environments, as well as bugs in tools and configuration stages. One of the main draws of Synopsys Cloud SaaS was its **stable and high-performing environment** that offers considerable compute power and established, state-of-the-art tools that deliver a seamless chip design flow.
- **Licensing automation & management:** The customers we spoke to wanted to focus on their design projects rather than on the administration of infrastructure and licenses, which formed a key motivator in choosing Synopsys Cloud SaaS. The ability of the platform to **scale and deploy license servers automatically** with instant license key activation offered significant value in reducing design overheads.

SIGNIFICANT TIME-TO-MARKET BENEFITS REALIZED

After adopting Synopsys Cloud SaaS, those we interviewed observed **optimizations in both job time and run time**. Based on the aggregate responses, EDA **time-to-market improved significantly**. Customers attributed this to powerful cloud compute resources optimized for specific EDA flows on Synopsys Cloud, scalable licenses, stable and established EDA tools, and prompt support for issue resolution.

- Overall, EDA runtime improved by 40% compared to traditional deployment due to scalability of licenses and compute.
- Setup time reduced from weeks to days due to availability of preconfigured flows and optimized compute.
- Quality of designs improved with additional time and resources available for verification before tapeout.
- Ability to leverage licensing automation reduced overheads for CAD and engineering teams.

In addition to these quantitative benefits, the customers we interviewed also reported several qualitative benefits after adopting Synopsys Cloud SaaS. Though not quantifiable, customers reported **increases in the overall productivity and quality of chip design**. The interviewees also observed feasible design replication from backward compatibility features due to the ability to leverage existing flows and tool versions, leading to faster adoption and execution of chip design. They witnessed a **reduction in incidents**, thanks in part to stable and performance-oriented tools and environment availability. The customers also saw **increased design engineering productivity** and decreased idle time caused by technical and licensing issues.

AREAS OF IMPROVEMENT

Customers identified a few areas of improvement to enhance the experience on the platform. These included having more flexibility with metered PPU licensing model to enable granular measurement of shorter distributed jobs, better representation of usage data on the analytics dashboard with expanded user-configurable options and real-time refresh of analytics charts and data.

SYNOPSYS CLOUD SAAS IS DEFINING QUALITY STANDARDS AND ACCELERATING TIME-TO-MARKET

Synopsys Cloud SaaS enables design optimization, effective device and process simulations, and timely access to the most up-to-date IP libraries — all of which work to increase productivity. Developers now have more time for verification and testing, leading to **first time-right designs** and **greater adherence to design-for-manufacturing principles**. These benefits ultimately allow **faster time-to-market** and enable customers to **capture greater market share**.

CONCLUSION

The TTM benefit study of Synopsys Cloud considers the quantitative and qualitative benefits that customers interviewed realized over the usage period. These customers continue to realize these benefits and are performing faster chip design in real-time with the help of established platforms and tools, accelerating their time-to-market.

APPENDIX

The TTM benefit study centered on active customers using Synopsys Cloud for digital and analog design, and verification. The study was conducted via online interviews, and the questions were segmented into six broad categories, as below.

TTM BENEFIT STUDY INTERVIEW AREAS OF INTEREST

Area of interest	Description
Motivation	Compelling factors and business justifications associated with envisioned objectives and goals that led customers to choose Synopsys Cloud over traditional deployment architectures and/or other cloud offerings.
Production adoption	Rationale behind choosing specific deployment models and products, as well as benchmarking criteria used for evaluating and selecting products.
Time-to-market value realization	Specific or overall TTM benefits observed as a result of designing SoCs on Synopsys Cloud.
Consideration	Feedback and experience scores based on a satisfaction survey, focused on positive benefits as well as areas of improvement.
Analytics	Cloud dashboard and associated business intelligence on available usage data and strategy to inform planning and decision making.
FlexEDA business model	License model and relevance for business operations, focus on benefits derived by customers and the scope of optimization.

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