Electronic Design Automation Industry

M&A - Analysis Report

By Cascade Research

SYNOPSYS®

ACQUIRES

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Overview

Introduction

The acquisition of Ansys by Synopsys, announced on January 16, 2024, represents a significant move within the technology sector, merging simulation and semiconductor design capabilities to create a Silicon-to-Systems solution provider. This strategic alignment aims to leverage Ansys' robust simulation and analysis tools alongside Synopsys' Electronic Design Automation expertise, driving innovation and expanding their market reach to both core EDA segments and high-growth adjacent industries, including automotive, aerospace, and industrial sectors. The acquisition is anticipated to enhance Synopsys' TAM by 1.5x to approximately $28 bn., with a projected growth rate of around 11%, underscoring the combined company's enhanced value proposition for addressing AI, semiconductor, and software-defined system demands. This transaction represents a significant consolidation in the EDA and simulation software market, with potential implications for competition and innovation in the industry.

SYNOPSYS®

Acquirer: EDA and Semiconductor Company

Name: Synopsys Inc.
Industry: Semiconductor and Software
CEO: Sassine Ghazi
FTE: 19,000
Revenue: $1,526 bn.
EBITDA: $436 mio.

Introduction:
Synopsys, Inc. headquartered in Sunnyvale, California, is a leading global provider of EDA software, semiconductor IP, and security solutions. Synopsys serves a diverse range of industries, including semiconductor, automotive, aerospace, and AI. The company's portfolio includes products for IC design, verification, and manufacturing, addressing the increasing demand for high-performance and complex chips driven by AI, IoT, and advanced computing applications. Synopsys reported annual revenue of approximately $6 bn. for the fiscal year ending July 2024, reflecting steady growth due to its strong positioning in the EDA and IP markets. Synopsys emphasizes innovation, with its EDA solutions supporting critical stages of the semiconductor design lifecycle and is widely regarded as a top EDA provider globally.
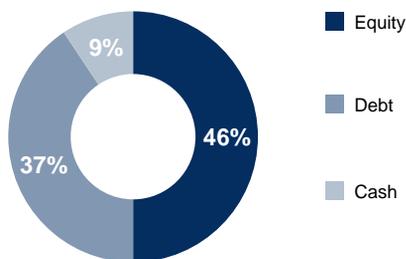
Λnsys

Target: Computer Software Company

Name: Ansys Inc.
Industry: Engineering Simulation Software
CEO: Ajei Gopal
FTE: 5,100
Revenue: $493 mio.
EBITDA: $199 mio.

Introduction:
Ansys Inc., headquartered in Canonsburg, Pennsylvania, is a leading provider of engineering simulation software with a strong financial track record, reporting $2.14 bn. in revenue for FY 2023. With the global simulation market projected to grow at a 12% CAGR through 2028, Ansys is well-positioned for expansion, particularly in emerging sectors like autonomous vehicles, 5G, and renewable energy. Its focus on continuous innovation is highlighted by its 680+ active patents and heavy R&D investments that allow it to maintain its competitive edge in such a fast-growing sector. With operations in North America, Europe, the Middle East and Africa, and Asia-Pacific it holds a dominant position in the EDA market. Ansys' high gross margins (over 90%) and strong cash flow generation make it a financially attractive target for potential acquisition, with significant growth potential as industries increasingly adopt digital twins and cloud-based simulation technologies.

Financing

Exhibition 1: Deal Financing Structure for the Acquisition of Ansys

The $35 bn. acquisition of Ansys by Synopsys is a cash-and-stock deal, with Ansys shareholders receiving $197 in cash and 0.345 shares of Synopsys common stock per Ansys share. Synopsys will finance the $19 bn. cash portion through its reserves and $16 bn. in committed debt. Ansys shareholders will hold approximately 16.5% of the combined entity, reinforcing the strategic integration and alignment between the two companies. The deal is set to close by mid-2025, with expected synergies in AI and simulation projected to generate over $1 bn. annually.
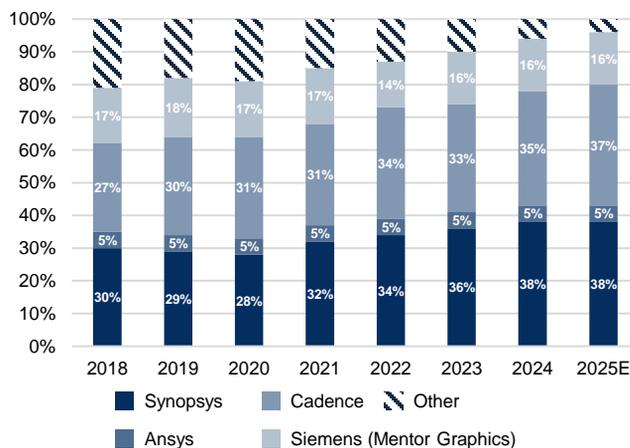
Source: Cleary Gottlieb, Synopsys to Acquire ANSYS for $35 bn. (January 16, 2024)

Strategic Implications

Exhibit 2: Market size Development from 2024 to 2029 - The EDA market expects to grow with 8.46 CAGR
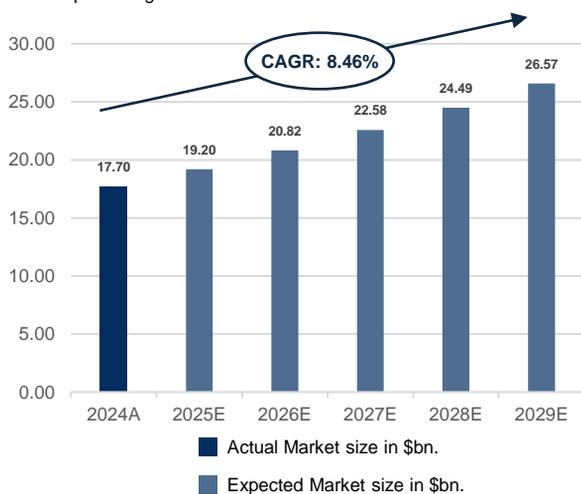
Exhibit 3: Market share of the 4 biggest players in EDA - Synopsys on path to becoming EDA and technology giant

Short Term Effects

In the short term, Synopsys' acquisition of Ansys is expected to drive operational benefits by capitalizing on Ansys' established customer base and expertise in high-margin simulation solutions. With Synopsys already holding a substantial market share of 36% in 2023, this acquisition positions it to expand rapidly in a growing EDA market, projected to reach $26.5 bn. by 2029.

The integration of Ansys' capabilities is set to enhance Synopsys' operating margins, with cost synergies anticipated across R&D, marketing, and administrative functions. These efficiencies are expected to improve Synopsys' non-GAAP operating margins by approximately 125 basis points, while also unlocking an uplift of 75 basis points in free cash flow margins. This short-term margin improvement is pivotal as Synopsys scales its resources to meet increasing demand in semiconductor, automotive, and aerospace industries.

Additionally, Synopsys is prioritizing the seamless integration of Ansys' high-complexity simulation tools with its own EDA offerings. This approach aims to strengthen Synopsys' position as a holistic solutions provider, offering streamlined, end-to-end product development capabilities to its clients. By creating a cohesive design-to-simulation workflow, Synopsys can better address customer needs in a competitive market landscape, supporting near-term growth and positioning the company as a go-to provider for comprehensive EDA and simulation solutions.

Long Term Effects

This acquisition reinforces Synopsys' position as a leading player in the Silicon-to-Systems domain, with significant implications for growth, market share, and innovation. The EDA market is projected to expand from $17.7 bn. 2024 to $26.5 bn. by 2029, with a robust CAGR of 8.46%. Synopsys is well-positioned to capitalize on this growth, especially in high-demand areas like AI, autonomous systems, and IoT, where integrated EDA and simulation solutions are critical. Integrating Ansys' simulation expertise with Synopsys' existing EDA tools enables the company to provide a complete lifecycle solution for silicon and system design, bolstering its competitive edge and fostering stronger customer loyalty.

Exhibit 3 shows that Synopsys is on track to become a dominant player in the EDA market, with its market share anticipated to increase from 34% in 2022 to 38% by 2025. This growth trajectory underscores the strategic importance of the Ansys acquisition, which enhances Synopsys' product portfolio and market penetration, allowing it to compete more effectively with other industry leaders.

The merger also significantly boosts Synopsys' R&D capabilities, allowing it to deliver advanced solutions tailored to high-growth sectors, such as semiconductor and software-defined systems. By expanding its expertise in computing and Multiphysics analysis, Synopsys can meet complex customer requirements, reinforcing its role as a comprehensive solutions provider.

Risk Factors

Exhibition 4: Synopsys' revenue development from 2018 to 2023, by region (in $mio.)
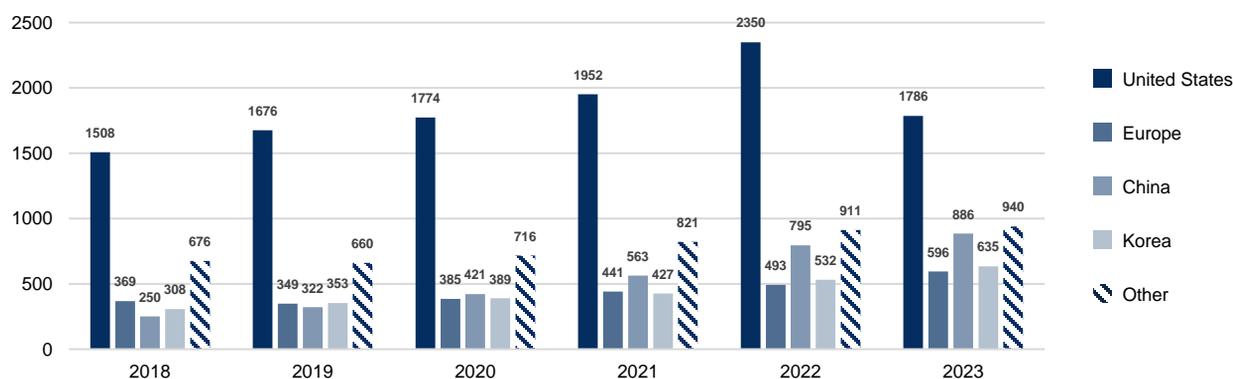
Source: US Antitrust Review of Proposed Synopsys- Ansys M&A - Bloomberg Intelligence (Bloomberg terminal) (Oct. 2024)

Regulatory Risks and Antitrust Concerns

American FTC and UK's CMA are investigating whether the merger could limit competition in EDA and engineering simulation markets. This investigation highlights the risk of extended timelines for regulatory approval and potential structural or behavioral concessions, such as divestitures, to address antitrust concerns.

However, the agreement entered on Jan. 15, 2024, is structured to concede enough time for any anti-trust review or litigation. If not completed by the Jan 15, 2025, the pact would automatically extend to July 15, 2025, and then Jan 15, 2026. This timing was structured around the fact that FTC federal court lawsuits usually last up to 6 months from filing to decision. If the deal is not completed by Jan. 15, 2026, Synopsys would owe $1.6 bn. to Ansys.

Competitive Risk and Market Structure

The $35 bn. merger of Synopsys and Ansys would create a technology giant that would further consolidate a market where both companies hold dominant positions. In fact, because of the potential market power Synopsys would gain from this, it is not surprising that the FTC conducted an antitrust review, and that Synopsys decided to divest of Optical Solutions Group to avoid any horizontal overlap in optical simulation.

It is also possible to argue that such a deal would have procompetitive benefits mostly because Synopsys' chip design and Ansys' electronic simulation software are complementary. Furthermore, the exclusion of competition through technological barriers seems difficult because of the year-long partnership and history of open standards of the two companies. The biggest buyers of the EDA industry (Samsung, Lenovo, Intel, Apple, etc.) impose open standards among vendors and will almost certainly continue to do so.

SAMR and Chinese technology Industry

The Chinese regulatory environment adds an unpredictable dimension to the merger. Despite not crossing statutory thresholds, the Chinese competition authority, SAMR, has opted to review the transaction, likely due to U.S. - China trade tensions and concerns over technology access. Given the U.S.-China trade tensions and the critical nature of Ansys' and Synopsys' technologies to semiconductor industries, SAMR could demand significant concessions, potentially limiting Synopsys' strategic flexibility in China. The risk of a lengthy review process cannot be discounted, and with the potential for political motivations to influence SAMR's decisions, there exists a latent risk of deal termination or restrictive conditions that could hamper future growth. Consequently, the merger's success may hinge on favorable diplomatic conditions as much as on the companies' legal and strategic preparations.

Alternatively, SAMR might view this deal as being of economic interest to China and give clearance. In fact, the country lacks EDA industry and the companies there might benefit from Synopsys's and Ansys' technologies more so than the two companies are dependent on the Chinese sector. It is more reasonable to believe that this situation will mimic the AMD-Xilinx case, where SAMR required conditional approvals often hinging on commitments to maintain compatibility and non-discriminatory practices towards Chinese firms.

Recent Transactions and Valuation-Multiples

Exhibition 5: Relevant semiconductors and EDA industry Acquisition from 2018 to 2024

Target Company	Acquirer	Year	EBIDTA/ Revenue Multiple
ANSYS Inc	Synopsis	2024	47.62
ESI Group	Keysight Technologies	2023	32.26
Aspentech Corp	Emerson Electric Co.	2021	15.5
Intega Group Ltd	SHV Holdings NV	2021	9.8
Andor Co Ltd	TCS Companies Co., Ltd.	2020	11.34
Red Hat Inc	IBM	2018	52.76
Median			23.88

Source: Bloomberg Terminal (Oct. 2024)

Recent years have witnessed a series of mergers and acquisitions that have significantly shaped the landscape of the EDA market. These transactions have allowed the acquirers to enhance their market share, expand their geographical reach, and improve their service offerings. Here are some of the key acquisitions and their implications:

1) **ESI Group acquired by Keysight Technologies (2023):** The acquisition of ESI Group by Keysight Technologies for approximately €913 mio. (equivalent to $987.05 mio) was a strategic move aimed at enhancing Keysight's software-centric capabilities, particularly in virtual prototyping and simulation. ESI Group specializes in predictive simulation technology and digital twin solutions that simulate product behavior in real-world conditions, primarily for the automotive, aerospace, and heavy industries. By incorporating ESI Group into its portfolio, Keysight sought to strengthen its position in the design and testing market, enabling customers to accelerate product development and lower operational costs through enhanced simulation tools.

2) **Aspentech Corp acquired by Emerson Electric Co. (2021):** Emerson Electric's acquisition of Aspentech is likely a strategic move to enhance its software portfolio, particularly in industrial automation and optimization. Aspentech is known for its advanced software solutions for asset optimization, used primarily in industries like oil and gas, chemicals, and other capital-intensive sectors. By integrating Aspentech's offerings, Emerson can provide a more comprehensive suite of tools for its industrial clients, helping them improve efficiency, reduce operational costs, and enhance sustainability through better asset performance management.

3) **SHV Holdings NV and Intega Group Ltd (2021):** SHV Holdings, through its subsidiary Kiwa, acquired Intega Group Ltd as part of its expansion in the Testing, Inspection, and Certification sector. Intega was delisted from the Australian Stock Exchange in December 2021 following a scheme of arrangement approved by both shareholders and the Supreme Court of New South Wales. This acquisition helped Kiwa enhance its position in asset and infrastructure integrity services, which aligns with its goals of providing sustainable and safety-focused solutions in industries such as construction and infrastructure.

4) **Andor Co. Ltd. acquired by TCS Companies Co. Ltd. (2020):** TCS Companies completed the acquisition of Andor Co. Ltd. in 2020 for ¥3.2 bn. (equivalent to $21.44 mio.) Andor Co., which had been listed on the JASDAQ market, was delisted following this acquisition. The strategic rationale behind this deal was to strengthen TCS's software and IT capabilities, as Andor Co. was a key player in the software solutions sector, particularly focused on package software and IT solutions. This acquisition helped TCS diversify and expand its business portfolio, enabling it to provide a broader range of services

5) **Red Hat acquired by IBM (2018):** IBM's $34 bn. acquisition of Red Hat was a landmark deal aimed at transforming IBM's position in the hybrid cloud space. The acquisition allowed IBM to become a leader in hybrid multicloud solutions by combining its cloud expertise with Red Hat's open-source technology, such as Linux and Kubernetes. This move provided businesses with more flexibility to manage applications across multiple cloud environments, addressing a significant need in the evolving cloud market.

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Team Overview

Founding President – Lukas Robrecht

Lukas Robrecht is currently pursuing a Master's in Finance at UCL, where he focuses on areas such as Asset Management, Corporate Finance and Private Equity. His academic journey includes a BA in Accounting and Finance from Coventry University, which provided him with a strong foundation in financial principles and analysis. Lukas has gained practical experience through various internships and projects, particularly in investment banking and private equity. His passion for the TMT and infrastructure sectors has driven him to engage in financial modeling and valuation projects, allowing him to develop his skills further. Beyond academics, Lukas is committed to applying his knowledge in practical settings, including founding Cascade Research, which aims to empower students to explore financial research and valuation.

M&A Analyst – Adriano Principe

Adriano Principe is an MSc Finance student at UCL, holding a BSc in Economics and Management from the University of Geneva where he engaged in valuation theory and macro analysis. Fluent in French, English, and Italian, and currently learning German, Adriano thrives in multilingual environments. His previous roles at Orabank Togo and Lombard Odier have provided him with solid experience in market analysis, data automation, and trade settlement. His role as VP of IFSA Geneva, allowed him to organize events with companies like Credit Suisse. With a keen interest in M&A and valuation within TMT and Healthcare, Adriano is leading the M&A Report team at Cascade Research.

M&A Analyst – Charles Crook

Charles holds a BSc in Economics from the University of Nottingham, where he built a solid foundation in economic theory and financial analysis. Charles gained hands-on experience managing multi-asset funds during a summer internship at Barings Asset Management, followed by a 9-month off-cycle internship at Tatton Investment Management, where he managed fund-of-funds portfolios across public asset classes. In addition to his professional experience, Charles has demonstrated strong leadership in other student-run initiatives. As Portfolio Manager for the Nottingham Equity Fund, he led investment decisions, and as Lead Deal Analyst at Sortino M&A Group, he produced detailed M&A deal reports and guided a team of analysts.