Cadence Design Systems Inc
(CDNS)

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Summary

- In computing world, it is engineers' jobs to get the products that perform to customers' satisfaction and expectation. And, it is Cadence's afford to help engineers to plan, to design, to code and to test their works on electronic system. Principally, the goal for Synopsys is to provide an **automation platform** to automate every possible step of these processes to reduce cost and time, to accelerate the products of IC, electronics, digital and software to the market and to assure the expected quality.
- Primary customers are semiconductor and electronic system companies. Cadence provides tools and help companies design ICs.
- Today's design of semiconductors and electronic is getting more complex and designed systems are getting vast ever. The most important is that companies need excellent tools in this competitive market in order to create newest products and to the market fast. In another words, the realty of world of semiconductor and electronic is to die or to adapt and design.
- Synopsys and Cadence are the two major service providers for semiconductor and electronics design industries.
- Investment in Cadence or other global trade companies involve geopolitical risks especially with China in national security. Advanced, highly functional semiconductors are very important to scientific, weaponry development, and China's ambition in global position is always looking for to advance its development in every aspect of the nation. Therefore, semiconductor

industry will always be an area of competitive importance. Companies' business will always be limited by those issues.

Business

- In here, the term of Integrated Circuits (ICs), chips and silicon are exchangeable.
- Cadence Design Systems is software as a service business (SaaS). Basically, Cadence provides computational software, special-purpose computational hardware, IP and services that help engineers create semiconductors, electronic systems and ensure the security and quality of systems.
- Cadence offers software, hardware, services and reusable IC design block (IP). Customers use Cadence products to design, simulate, configure, analyze and verify their designed products
- Why is the semiconductor design so important and becoming a national security issue? It is because of its complexity of design and manufacturing, especially the advanced semiconductors, and it is paramount to retain the advantage over adversaries. As company stated that an advanced semiconductor may contain billions of transistors, and incorporate billion of transistors into a space of Puffs box.
- Cadence has following product categories
    - **Customer IC Design and Simulation**: Customers use to create schematic and physical representations of ICs down to the transistor level, to simulate and verify, and to prepare for manufacturing.
    - **Digital IC Design and Signoff**: can be used to create logic representation of digital circuit or IC which can be verified before the design representation is implemented or converted to silicon manufacturing.
    - **Functional certification**: which is to bug dictation, to verify the circuitry or software has met the functional specification before

manufacturing.IP (Intellectual Properties) are pre-verified, customizable functional blocks.

    - **IP**: can be integrated into customers' IC design, accelerating development, reducing risk of errors.
    - **System Design and Analysis**: Are used to develop PCBs and advanced IC package by customers and to analyze electromagnetic, electro-thermal and other multiphysics effects. Due to facts that signal in close proximity in IC and electronics, interference avoidance is becoming more important than before.

- CNDS provides software using time-based licenses. Time-based licenses usually provide a term of 2-3 year. During the term, Cadence provides continuously upgrade and improvement of software. Payment term is usually net 30 days. A small portion of software provides timeless licenses which do not have right for new technology improvement. Designed IPs provides nonexclusive license agreement on a fixed amount and specific period of time service or on collection of royalties as customers ship their product with our IPs to their customers. Also, Cadence offers emulation and prototyping hardware which are either sold or leased to customers.
- Cadence has 12700 employees as 12/31/2024. Company did not provide employment info by regions as Synopsys did. Also, company took away information about DEI from 2024 10-K filing comparing 2023 10-K filing.
- Cadence provides paid volunteer time-off, international service immersion projects and grants to employee who are giving back to their communities.
- CEO Anirudh Devgan who jointed company on March 2012 has served as Chief Executive Office since December 2021, and served various positions as President of Cadence, EVP Research and Development, SVP President Research and Development.
- We own land and buildings at our corporate headquarters located in San Jose, California. We also own properties in New Mexico, India, Greece and Italy. As of December 31, 2024, the total square footage of our owned buildings was approximately 1,330,000.

<u>Note</u>

- There is a big different that Synopsys reports that majority of their employees are in India but not Cadence. However, from their financial data, there is little difference on their margins between Synopsys and Cadence. The assumption is majority of Cadence's employees should be hired outside of the United States. The conclusion is Cadence somehow has less transparency in their reporting.
- Cadence generally issues shares related to its stock-based compensation plans from shares held in treasury.
- Also, CDNS has not issued stock option for employees' compensation instead use stock units.
- The growth of Cadence's recurring revenue seems declining in the past few years. Recurring revenues are usually the better source for revenue growth.
- TSMC and Cadence partnered to AI advanced design flows. TSMC gave OK for leading digital and design flows for implementing and signoff from Cadence Design Systems on TSMC's latest 3 nanometer and 2 nanometer technologies
- Mr. Lip-Bu Tan was Cadence's former CEO who led company's turnaround in 2009 and gave shareholder the price return of 3000%, and increase sale to \$2.8 billion in 2021 from \$853 million in 2009. He once said that he has strong feeling of company's **culture of accountability and integrity**.