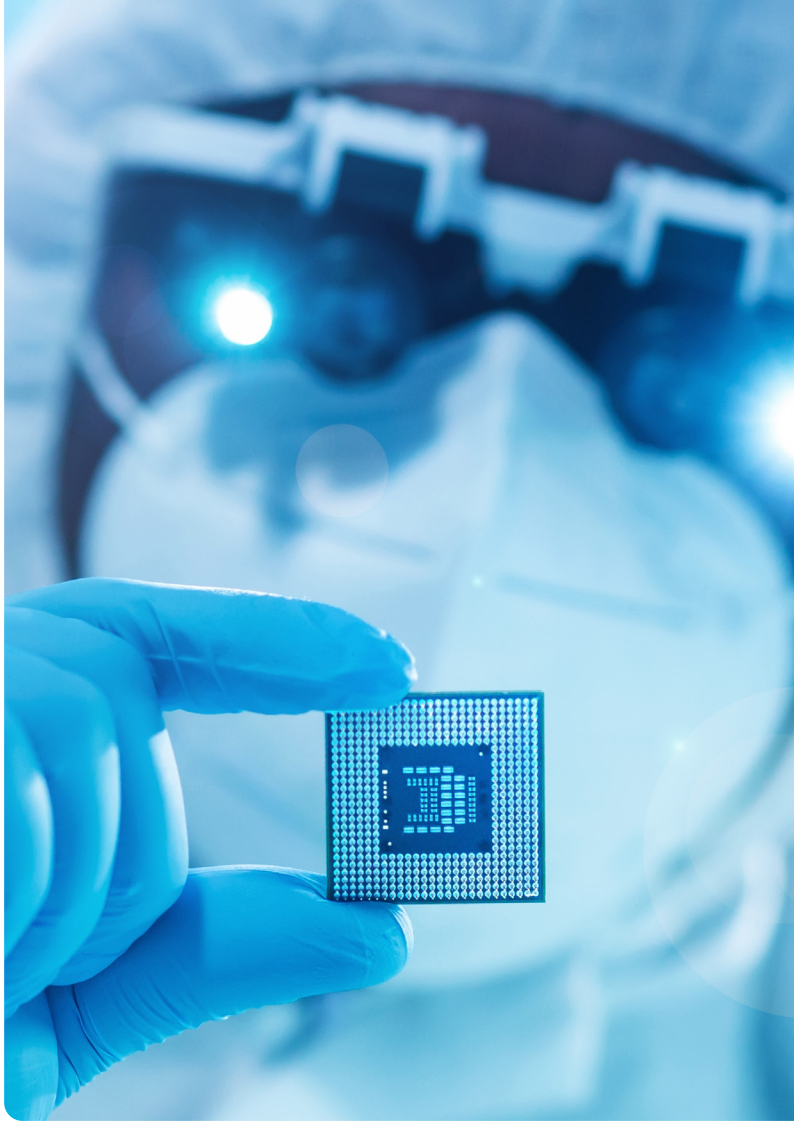


HCLTech

**Powering the
semiconductor
transformation
in Southeast Asia**



The semiconductor imperative: A catalyst for growth

Rapid technological evolution has led to the semiconductor industry becoming a pivotal growth catalyst. However, even though it is poised to become a trillion-dollar industry by 2030, it faces unprecedented challenges. These include geopolitical tensions, fragile global supply chains and the relentless march of obsolescence.

Yet, amidst these uncertainties lies immense opportunity. Advanced technologies such as Artificial Intelligence, digital twins and enhanced automation, underpinning Industry 4.0, offer resilient pathways forward, transforming challenges into avenues for innovation and growth.

Southeast Asia's semiconductor boom

The heart of this transformation beats strongly in Southeast Asia. The region's semiconductor market is on an impressive ascent, projected to swell from \$27.64 billion in 2021 to **\$41.88 billion by 2028, marking a CAGR of 6.1%.**

Vietnam

Already among the global top 10 for the export of semiconductor devices and integrated circuits, Vietnam is a major force in the ASEAN semiconductor industry due to government support, a strong science and technology foundation and a skilled workforce. This, combined with its cost-effectiveness and high participation rate in free trade agreements, positions Vietnam for significant growth in the sector.

Thailand

Strategically located at the heart of ASEAN, Thailand's export capabilities are unmatched, supported by a substantial workforce and the Eastern Economic Corridor's (EEC) innovation ecosystem. Enhanced government incentives further cement its status as a semiconductor industry hub.

Malaysia

With a robust talent pool of over 600,000 in the E&E sector, supported by extensive education and training infrastructure, Malaysia excels in connectivity through its advanced seaports and highway systems, backed by a pro-business environment and competitive investment incentives.

Philippines

Distinguished by its highly skilled, English-proficient and service-oriented labor force, Philippines offers a young demographic with flexible work schedules, complemented by government incentives that balance higher logistic and power costs.

Indonesia

Boasting a large consumer market and a young, competitive workforce, Indonesia is a burgeoning hub for multinationals, supported by strategic access to the Straits of Malacca and substantial government incentives within 19 Special Economic Zones.

Singapore

A prime headquarters location for bridging Asian and Western markets, Singapore invests heavily in R&D, boasting a sophisticated talent development ecosystem, alongside significant government investment to foster semiconductor R&D excellence.

Navigating ASEAN-specific challenges with HCLTech expertise

- **Advanced manufacturing complexity**

The semiconductor manufacturing process is becoming increasingly complex, driven by the demand for more sophisticated technologies. This complexity is best handled with digital twin and advanced technology understanding to meet both production timelines and quality control measures.

- **Automation**

Semiconductor firms are using automation to manage intense cost pressures from both rising raw material prices and the need to invest in advanced manufacturing technologies. Balancing cost efficiency with innovation remains a significant challenge.

- **High-capital equipment with long gestation times**

The necessity for high-capital equipment, coupled with long gestation times, puts semiconductor companies at risk of delayed returns on investment. Navigating these waters requires deep industry expertise and strategic planning.

- **Fragmented industry with distinct requirements for all stakeholders**

The semiconductor industry's fragmentation presents unique challenges, as companies must cater to distinct requirements across different markets and stakeholders. Achieving cohesion and efficiency across this diverse landscape is increasingly difficult.

- **Growing demand**

Rapidly growing demand for semiconductors, fueled by advancements in technology and increasing digitalization, is pushing companies to their limits in terms of production capacity and supply chain management.



HCLTech's innovative strategies for semiconductor excellence



Key enabling technologies: Empowering the semiconductor ecosystem with digital twin, automation and managed Fab operations-edge technologies that drive efficiency, scalability and innovation.



Obsolescence engineering services: Future-proofing semiconductor manufacturing through strategic obsolescence management, ensuring longevity and reliability of components.



Engineering and AI service offerings: Tailored AI and end-to-end engineering solutions designed to optimize manufacturing processes, enhance semiconductor product design and accelerate time-to-market.



Workato automation: Streamlining operations and enhancing productivity with Workato's integration-led automation platforms, tailored for the unique needs of the semiconductor industry.



Security services: Comprehensive cybersecurity solutions protecting critical infrastructure and sensitive data against emerging threats.

HCLTech- Your trusted partner for semiconductor success

HCLTech leads semiconductor innovation, offering tailored solutions for C-level executives, department heads, IT and Security and Procurement leaders. Our services are designed to navigate the complex demands of the semiconductor/manufacturing landscape, ensuring your organization not only meets but exceeds industry standards and expectations in a fiercely competitive market. With a focus on strategic partnerships and cutting-edge technology, we empower your business to achieve its full potential.



Key differentiators

- **Silicon lifecycle services:** Offering end-to-end lifecycle management for silicon, from concept to end-of-life, ensuring maximum value and performance throughout.
- **Partnerships and collaborations:** Strong partnerships with industry leaders and innovators ensure cutting-edge solutions for our clients.
 - **Partnerships with 7 of the top 10 OEMs**
Collaborating with the world's leading OEMs to deliver superior semiconductor solutions, reflecting our commitment to excellence and reliability.
 - **TSMC Design Center Alliance partner**
As a proud partner in the TSMC Design Center Alliance, we boast full-stack capabilities, from design to fabrication, ensuring top-tier product quality.
 - **Collaboration with a vast pool of Silicon IP vendors for customized chip solutions**
We specialize in crafting bespoke chip solutions that meet specific needs, combining flexibility with high performance from our pool of pre-verified IP suppliers to provide custom silicon for our clients.

Our Partners:  

24+

Years of experience in the semiconductor industry

Large team of engineers

45,000+ Engineers

Global engineering footprint across VLSI, Hardware, Software and Mechanical functions

\$20M+

Strategic investments in Engineering OSAT lab, multiple ATE testers, Qualification Lab (Automotive AEC-Q-100), Broad market (JESD-22) solution frameworks and dedicated client labs

Everest Group's PEAK Matrix Assessment 2023

#1 Engineering services provider

Leader in software product engineering services

Beyond numbers: Stories of impact

Case Study: Transforming MOCVD systems with innovative product development

Partnering with the world's leading MOCVD equipment manufacturer, HCLTech set out to revolutionize product development, focusing on speeding up new product introductions and reducing market time. Leveraging decades of expertise, advanced labs and innovative solutions, we delivered a software technology platform that enhanced efficiency and scalability.

Our comprehensive approach, from PDLC ownership to developing advanced simulators and implementing factory automation standards, resulted in a significant acceleration of product launches and cost reductions. This collaboration yielded a common framework for new product development, achieving a 70% reuse of code, 30% cost savings, and a remarkable improvement in system reliability, exemplifying our commitment to driving client success in a competitive landscape.

Case Study: End-to-end turnkey silicon development for AI startup with analog, digital SoC development

HCLTech partnered with an AI startup to develop a disruptive SoC with both analog and digital silicon design requirements. We undertook the entire silicon development process, leveraging our vast SoC experience to ensure first-time success. This included chip design, identification of FAB and OSAT partners, thorough bench validation and the establishment of manufacturing test and qualification procedures – all utilizing our extensive lab resources and innovative solutions.

Our end-to-end ownership streamlined the process, guaranteeing a swift market launch and enabling ongoing production management and parts shipment to end users.



HCLTech is uniquely positioned to empower Southeast Asia's semiconductor industry with cutting-edge technologies and deep domain expertise. We are committed to partnering with regional players to navigate the complexities of the market and achieve their full growth potential.

Sandeep Sarkar
SVP ASEAN



The semiconductor industry in Southeast Asia is on an exciting trajectory. At HCLTech, we are passionate about helping companies capitalize on this growth by providing them with the tools, strategies and success record to overcome challenges, optimize operations and achieve industry leadership.

Rangarajan S
AVP ASEAN



HCLTech

Transform your semiconductor journey today

Get in touch. To find out more about our capabilities, contact:

Arun Rajendran
Country Head – Diversified Industries

✉ arun.rajendran@hcltech.com

☎ +601114488151

Pankaj Krishnan Nandakumar
Area Sales Director

✉ pankajkrishnan.nanda@hcltech.com

☎ +65 83439796

Address:

📍 HCL Singapore Pte Ltd, 8 Cross Street, #08-01, Manulife Tower,
Singapore 04842

📍 HCL Malaysia Sdn Bhd – L5-E-1B Level 5 Enterprise 4 Technology Park Malaysia
57000 Kuala Lumpur Federal Territory of Kuala Lumpur

About HCLTech

HCLTech is a global technology company, home to more than 219,000 people across 60 countries, delivering industry-leading capabilities centered around digital, engineering, cloud and AI, powered by a broad portfolio of technology services and products. We work with clients across all major verticals, providing industry solutions for Financial Services, Manufacturing, Life Sciences and Healthcare, Technology and Services, Telecom and Media, Retail and CPG, and Public Services. Consolidated revenues as of 12 months ending June 2024 totaled \$13.4B. To learn how we can supercharge progress for you, visit hcltech.com.

hcltech.com

