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Delivering Value through Innovation

India Semicon Landscape

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India Semicon

Design Talent Dominance

India accounts for **20% of global semiconductor design engineers**, making it the world's second-largest base after the U.S. Top global companies such as Intel, AMD, Qualcomm, and Texas Instruments have established major R&D centers in India, leveraging this deep talent pool for chip design, verification, and firmware.

Transition to Manufacturing & Packaging

India is moving beyond just design into **fabrication and advanced packaging (ATMP)**. Projects like **ISMC's analog fab** and **Vedanta-Foxconn's digital fab** are signs of this transition. In parallel, **Micron's ATMP plant in Gujarat** is already under construction.

Startups & Innovation in Deep Tech

Startups like **KRUTRIM (AI chips)**, **Signalchip (5G chipsets)**, and **Steradian (Radar SoCs)** are innovating in complex domains, often matching global performance benchmarks while being completely designed and developed in India.

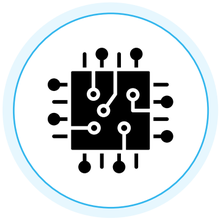
Government Driving Growth with Bold Initiatives

$10B Semicon India Program

A comprehensive push from the Indian government aimed at developing a **holistic semiconductor ecosystem** — from chip design to fabrication and packaging.

Design Linked Incentive (DLI)

Offers **up to 50% of eligible design expenditure** to startups, MSMEs, and academic institutions to boost IP generation and prototype development.



Manufacturing Incentives & Display Fabs

The government will cover **up to 50% of the project cost** for establishing fabs and **display manufacturing units (TFT LCD/AMOLED)** in India

Chips to Startup (C2S)

A capacity-building initiative to **train 85,000 engineers** in VLSI and embedded design through hands-on projects and institutional partnerships.

National Quantum & AI Compute Missions

Investment in **supercomputing infrastructure** and **AI chip development** to foster indigenous development of processors, accelerators, and system-level compute infrastructure

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Domestic Market – A $100 Bn+ Opportunity

1

Current and Future Market Size

India's semiconductor market stood at ~$27–30B in 2022 and is projected to exceed **$100B by 2030**, driven by electronics consumption and digital transformation.

2

Consumer Electronics Demand

India is the **second-largest smartphone market** globally. Other growth segments include smart TVs, laptops, IoT wearables, and home automation – all chip-intensive products.

3

Automotive Transformation

The shift to **electric vehicles (EVs)**, smart infotainment, and **ADAS technologies** is increasing the demand for specialized automotive-grade semiconductors.

4

Telecom, Cloud & AI

The rollout of **5G/6G infrastructure**, cloud data centers, and generative AI applications is driving demand for **custom silicon and high-performance computing (HPC)** chips.

5

Defence, Industrial, Space

ISRO, DRDO, and private players are incorporating FPGAs, ASICs, and custom silicon into **space systems, radar, avionics, and industrial automation**, strengthening the need for domestically developed chips.

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MNC R&D Investment

Global Confidence in India's Semiconductor Ecosystem

India’s unique combination of a **cost-effective workforce** and a **deep pool of skilled semiconductor engineers** is drawing significant investments from leading global players. Multinational corporations are expanding their R&D and manufacturing footprint, signalling trust in India's long-term potential as a semiconductor hub.

Major Investment Announcements

AMD	Committed **$400 million** to establish a state-of-the-art engineering center in India focused on developing **AI SoCs, high-performance CPUs, and GPUs**.
micron	Investing **$2.75 billion** to set up a large-scale **ATMP (Assembly, Testing, Marking, and Packaging)** facility in **Gujarat**, enabling domestic chip packaging capabilities.
RENESAS	Launching a new **R&D center in Noida**, with a focus on advanced **3nm semiconductor design**, further strengthening India’s deep-tech research.
Qualcomm	Opening a **6G research and development center in Chennai**, placing India on the map for next-generation wireless innovation.
APPLIED MATERIALS	Announced a **$400 million investment** in a collaborative **semiconductor equipment and materials R&D lab**, focused on next-gen fabrication technologies.
TATA	Planning India’s **first large-scale commercial semiconductor fabrication unit**, a major step toward achieving self-reliance in chip manufacturing.

Emerging OSAT Strength

India is also gaining momentum in **Outsourced Semiconductor Assembly and Test (OSAT)** services. Companies like **HCL-Foxconn** are entering the segment with a focus on **display driver chip packaging**, positioning India as a competitive player in the semiconductor backend ecosystem.

Design & Services – India’s Competitive Edge

Robust Services Industry 01

India’s semiconductor services ecosystem is mature, covering **RTL design, physical design, DFT, verification, validation, emulation, and post-silicon debug**.

Leading Companies 02

Players like **InSemi, Sankalp, MosChip, Tata Elxsi, VVDN, Wipro**, and **HCL** are offering end-to-end services across digital, analog, and mixed-signal domains.

AI/ML Era Transformation 03

There’s increasing demand for service providers who can work on **AI chip optimization, compiler-toolchain co-design, model compression**, and **hardware-aware ML deployments**.

System Integration & IP Development 05

Engineers are building **domain-specific IPs** for verticals such as automotive, industrial automation, 5G/6G, and consumer AI – marking a shift from traditional services to **IP-driven service models**.

Future Readiness 05

With global work being outsourced, Indian engineers must upgrade themselves in **AI hardware, chiplet design, RISC-V architecture, and advanced packaging** to stay competitive in the next decade.

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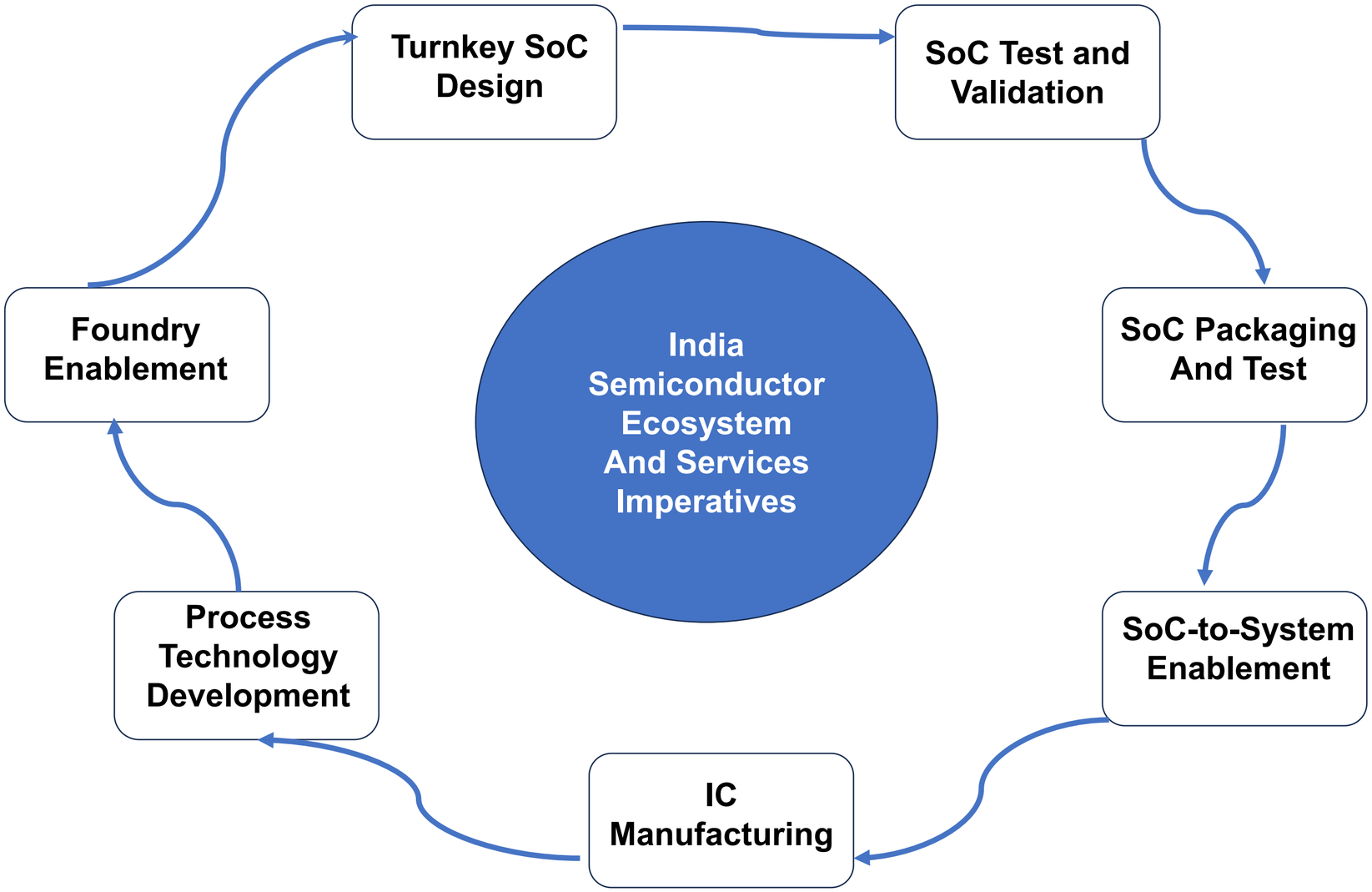
Growth Drivers for India’s Semiconductor Ecosystem



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Future Outlook & Conclusion

India's Full-Stack Semiconductor Evolution

India is transitioning from a design-centric hub to a complete semiconductor ecosystem—encompassing **chip design, fabrication, advanced packaging (ATMP)**, and **indigenous IP development**. With support from government incentives and private investment, the foundation for a sustainable, end-to-end value chain is firmly in place.

Innovation, Talent & Strategic Collaborations

The emergence of **fabless startups**, growing **IP ownership**, and a focus on **next-gen skills** (AI hardware, RISC-V, chiplets) are reshaping India's role in global innovation. Partnerships with global leaders like **Foxconn, AMD, and Powerchip**, coupled with local execution, will accelerate India's semiconductor ambition.

Global Relevance & Leadership by 2030

As the world seeks **supply chain diversification**, India is uniquely positioned to become a **trusted global semiconductor hub**. With a large domestic market, policy-driven growth, and a world-class talent base, India is no longer just a participant—but a **potential leader of the global chip revolution** in the coming decade.

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Thank You

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