

4. Importance Of 'Pax Silica' For India – International Relation

Recently, the United States convened the inaugural Pax Silica Summit, emphasizing reducing coercive dependencies, securing the flow of critical minerals, and promoting trusted digital ecosystems.

Meaning and strategic idea of "Pax Silica"

Etymology and concept – "Pax Silica" combines Pax (peace) and Silica (core semiconductor input) to frame a new kind of "peace" built on stable, trusted technology supply chains rather than military alliances.

Underlying proposition – In the AI-semiconductor era, chips + critical minerals + manufacturing capacity + data/energy infrastructure become the backbone of economic security; therefore, "peace and prosperity" depend on reducing coercive dependencies and ensuring resilience across the stack.

"Pax Silica" is being argued as necessary

Supply-chain security for critical minerals – The initiative is framed around securing inputs essential for advanced technologies—especially critical minerals/REEs and associated logistics/manufacturing chains.

Reducing dependence on China (and "coercive dependency" risk) – Pax Silica is positioned as a response to risks from concentrated supply chains and the possibility of export controls or geopolitical leverage being applied to technology inputs.

Trusted ecosystem for frontier tech – The framing is not only minerals and chips, but a broader "trusted stack" that includes advanced manufacturing and supporting infrastructure for AI-era supply chains.

Economic stability and strategic balance – The rationale is that monopolised nodes (minerals processing, lithography, advanced packaging, memory, etc.) create systemic fragility; diversification and coordinated capacity building can reduce global disruption risk.

Allied technological collaboration as a "coalition of capabilities" – The design logic emphasises that each member contributes a niche capability—R&D, manufacturing, lithography equipment, capital, logistics—creating complementarity rather than duplication.

Ethical/secure digital infrastructure – Several summaries of the initiative highlight "trusted" systems—secure supply chains plus governance norms around technology infrastructure (including cybersecurity and associated standards).

Sustainable mining and circularity – The agenda is commonly bundled with responsible sourcing, recycling, and green manufacturing as a legitimacy and resilience pillar for critical-mineral supply chains.

Composition- why these countries fit the "capabilities" map

Core technology and manufacturing nodes

United States– convening power, advanced R&D ecosystem, and broader technology governance push.

Japan, South Korea, Singapore, Netherlands, UK, Israel– commonly cited as key participants due to roles in chips/AI ecosystems, manufacturing bases, and cybersecurity/defence-tech capabilities.

Netherlands (ASML)– strategic choke-point capability in advanced lithography equipment that underpins leading-edge chipmaking.

Capital, logistics, and energy/infrastructure

Qatar and UAE– brought in as capital-heavy partners with ambitions in AI infrastructure and strategic logistics/industrial capacity.

Observers / possible expansion – Observers reported include Canada, the European Union, OECD, and Taiwan, signalling an expansion pathway.

India's prospective role- India can realistically add value

Demand-side scale + digital public infrastructure - India's large and fast-growing digital economy can provide a major market pull for trusted chips, secure hardware, and AI infrastructure, improving the commercial viability of diversified supply chains.

Semiconductor industrial policy runway - India's ongoing push in chip design, OSAT/packaging, and fabrication can be aligned to Pax Silica's "de-risk and diversify" objective—particularly in midstream segments (assembly, packaging, testing) where entry barriers can be lower than leading-edge foundry competition.

Human capital and engineering depth - Large STEM talent pools can support chip design services, verification, embedded systems, and AI tooling—useful in a "coalition of capabilities" architecture.

Critical minerals coordination - India can strengthen its role through overseas mineral partnerships, processing capacity, and standards for responsible sourcing—especially if tied to Quad-like critical minerals coordination (conceptually aligned to Pax Silica's mineral-security thrust).

Benefits for India

Technology access and co-development (not just "transfer") - The realistic upside is joint R&D, standards alignment, and supplier qualification—which is often more feasible than direct transfer of the most tightly controlled frontier manufacturing IP.

Investment and ecosystem thickening - Membership/association can improve investor confidence via "trusted supply chain" signalling, potentially accelerating

- a. advanced packaging and testing clusters
- b. specialty chemicals and materials ecosystem
- c. equipment servicing and calibration networks

Supply-chain shock insulation - Diversified sourcing and aligned procurement can reduce exposure to sudden export restrictions or single-node failures in minerals/components.

Tech governance seat - Participation can give India leverage in shaping norms around trusted supply chains, data-centre buildouts, and security standards.

Challenges for India- expanded and more exam-relevant

Strategic autonomy and signalling risk - Any US-led capability bloc creates perception risks in China relations and in India's broader non-aligned positioning; India would need calibrated participation (issue-based, capability-based).

Capability gap across the semiconductor stack - India's constraints are not only fabs; they include

- a. tool/equipment ecosystem
- b. ultra-high purity materials
- c. advanced packaging know-how
- d. deep supplier qualification cycles

Policy divergence with market-led members - India's subsidy/protection orientation can clash with partners preferring more open procurement and competition rules; this may surface in rules-of-origin, local content, and incentive design.

Expectation management - If India is the first major developing economy entrant, it may face dual expectations- "scale fast" on manufacturing while also aligning on sensitive governance norms (export controls, screening, cybersecurity standards).

Strategic implications– Pax Silica could reshape the global order

Toward a dual ecosystem (de facto bifurcation) – A credible Pax Silica supply chain could accelerate bifurcation into two broad technology spheres—trusted/secured supply chains versus China-centric capacity—especially in sensitive nodes (advanced chips, AI infrastructure).

Competitive industrial policy as the new normal – Expect more coordination on– critical mineral offtake agreements, joint stockpiles, standards, and trusted vendor lists—industrial policy conducted through coalitions rather than purely domestic programs.

Indo-Pacific stability via economic–security interdependence – By aligning incentives across minerals, manufacturing, and logistics, the grouping aims to reduce vulnerability-driven tensions and create predictable pathways for investment and technology diffusion.

Source– <https://www.thehindu.com/news/international/the-importance-of-pax-silica-for-india/article70529093.ece>

