

ASEAN in the Age of AI: How Technology Governance Tests ASEAN's Strategic Autonomy

The AI era has started and is moving fast. With adoption and growth of AI, semiconductors, artificial intelligence, and critical data systems are expected to dominate the landscape of great power rivalry. Southeast Asia faces a challenge that cannot be answered by the diplomatic playbook the region normally uses.

The rise of Indo-Pacific minilateral frameworks is more than just diplomatic activities. It marks the beginning of the end of the way the organizational power of technology is being allocated in the region.

The Nature of Technological Vulnerability

ASEAN's dilemma is qualitatively different from previous moments of great power competition. Non-alignment in the Cold War period was genuinely liberating in terms of strategic maneuverability. Since the end of the Cold War, interdependence generated leverage for the regional middle powers. However, the logic of technological interdependence is different. ASEAN leaders are just beginning to understand the logic.

Consider the evolution of the [semiconductor supply chain](#). ASML's monopoly in the market for extreme ultraviolet lithography machines, in excess of 90 percent of the advanced market for lithography machines, indicates the new strategic chokepoints. It is more than market power; it indicates the beginning of what one might call the "gaps in technological sovereignty" that cannot at all be bridged by diplomatic efforts. When the Netherlands adopted tougher [export controls for ASML machines sold to China in 2024](#), partly because of the pressure from the United States, it indicated how quickly third-country policies cascade in the regional supply chain.

Regional by-products in Southeast Asia are very significant but also inadequately recognized. [Malaysia's 13 percent market share of the world's semiconductor testing and packaging activities](#), together with the assembly business in Singapore, the Philippines, and Vietnam, represents an important element in the world's electronics chain. However, the whole system hangs on equipment rights owned by few companies operating in regions that prioritize strategic rather than market-oriented policies.

The Minilateral Architecture's Strategic Logic

The shift from security dialogue to technology governance in the likes of the [Quad](#) represents the structural dynamics. Minilaterals are more than closed clubs. They are also the new sites for the determination of technological standards, access terms, and investment provisions. De facto regimes of technology governance in the form of the working groups on critical technologies in the context of the Quad and the collaboration on quantum computing and/or AI capabilities by the members of the [AUKUS agreement](#) are being developed outside the multilateral framework.

This is because the new paradigm embodies what some international political economy experts might observe to represent the transition from the logic of ‘shallow’ to ‘deep’ integration. This is because instead of the alignment of tariffs and rules in the previous trade regimes, the new “tech” minilaterals are effecting what turns out to represent ‘trust architectures.’

The [Indo-Pacific Economic Framework](#) is one such case. Its fragmentation, where Singapore is part of supply chain understanding while the rest of ASEAN is not, is not a problem but rather the point. This is because it captures the tension between the inclusive language of regionalism and the logic of exclusion in tech competition.

Understanding the "Trusted Supplier" Paradigm

[Export controls on advanced computing equipment in the United States in October 2022](#)

signified more than the onset of a new policy. They represented the beginning of an entirely new paradigm for the regulation of the flow of technology on the international scene.

"Trusted supplier" paradigms do not merely limit the sale of certain goods but also generate levels of trust.

This two-category system generates rippling consequences that are difficult for the conventional tools of economics to quantify. When considering where to build new plants, the one aspect of TSMC's analysis that's no longer paramount and no longer even in the top two is the cost of manpower. What mattered instead was the ability of countries in the region to qualify for waivers from export controls.

However, the financial statistics do not provide the whole picture. Seen in the context of its being positioned as a “neutral” against the backdrop of China, the 40 percent year-on-year increase in the technology manufacturing FDI in Q3 2024 in the Vietnamese economy is understandable. However, the neutrality being pursued by the Vietnamese economy in the aforementioned context appears to stand challenged in the wake of the regimes of technology governance.

Historical Comparisons & Contrasts

ASEAN's current challenge appears to represent the same challenge the association faced during the Cold War period. However, the dissimilarities are more revealing than the similarities. ASEAN was able to maintain its neutrality during the 1970s and 1980s by keeping its economy open while collectively responding to conflicts in the region. This was made possible through the [Zone of Peace, Freedom & Neutrality \(ZOPFAN\)](#) principle adopted in 1971.

However, the challenge in today's technology competition is that it does not provide any middle ground like ideological alignment. Technology systems require interoperability standards, data protocols for governance, and supply chain functionalities that are no longer compatible within the competitive environment. This challenge for the [European Union's digital sovereignty](#) in maintaining its own regulation within the dependency on the technology platforms of the United States and China also holds lessons for ASEAN.

The Infrastructure Dilemma

Infrastructure investment embodies these dynamics. ASEAN countries considering the Chinese [Belt-and-Road Initiative](#) and Western offerings such as the [Partnership for Global Infrastructure and Investment](#) offered by the G7 must weigh more than the cost of the loan. [AidData research](#) indicates that the terms of the Belt-and-Road Initiative involve loan interest rates 2–3 percentage points higher than multilateral alternatives. This captures the cost dilemma but not the larger implications.

Issues related to the maritime domain also stand out. Securing the [South China Sea/Strait of Malacca maritime region's 3.4 trillion dollars in trade every year](#) requires the guarantee of free flow. However, the region does not have the integrated maritime surveillance infrastructure in place. Western and Chinese interests for providing the region's maritime domain awareness solutions also involve significantly more than the supply of equipment.

Reconsidering ASEAN's Options in

Instead of perceiving minilaterals as centrifugal forces undermining centrality, ASEAN could seek to transform them into structures to manage through engagement. This would involve progressing from the protectionist approach of conserving the existing architecture to the proactive approach of building new architecture for the regulation of international relations in light of technological truths.

The establishment of ad hoc technology governance institutions, either through region-wide institutions, compliance levels on tiered structures, or joint negotiation strength, is one such avenue. However, to succeed in technology governance, one must understand that the traditional model of decision-making through consent might no longer work in the context of the pace and complexity inherent in technology. It might become the rule rather than the exception in economic integrations like through [RCEP](#) & [CPTPP](#).

Despite constituting a weakness in the pursuit of collective positions, the diversity in the region might prove advantageous if leveraged. Varying levels of ASEAN members' relations within the different technology realms could possibly present the association's own niche strength in terms of its convening power. Not in the mediation of the Washington-Beijing standoff per se but in the representation of different perspectives.

The Collective Action Problem

Both the United States and China find themselves facing the same set of incentives to take part in ASEAN-led efforts in governing their relations. Washington values Southeast Asian countries' membership in the "friend-shoring" agreement but fails to gain clear anti-China coalitions from the regimes in the region. China requires Southeast Asian countries' market access but faces rising concern over the region's interest in the technological solutions proposed by China.

This allows for the possibility of what may perhaps be termed in the context of the theory of games the determination of the outcome the two powers might arrive at in terms of their degree of compliance in the context of the framework that ASEAN must seek to establish.

Implications for Regional Order

Technology Governance: This is more than simply a policy challenge. It's remaking the very terms of the regional order. ASEAN's response to the challenge of technology governance will decide much more than ASEAN's economic future. It will determine the future relevance of ASEAN's role in international affairs. The clock is ticking quickly. Every month brings new supply chain developments. Every month brings new technologies.

Traditional strengths of the association in terms of 'consensus-building, 'informal diplomacy,' and 'non-interference,' might not suffice in the face of this challenge. However, the association's ability in 'managing diversity,' 'encouraging dialogue,' and 'practical strategic ambiguity' in other areas could form the backdrop for innovation. It is not the ability of ASEAN to maintain its 'tradition' that is in doubt but its ability to 'upgrade its pace' enough to stay 'relevant in the new order increasingly shaped by capabilities rather than geography.'

But in order to approach solutions effectively, the first step must involve an understanding of the dynamics at play. The strategic technology competition is more than just something to manage through the same existing terms. It is instead the beginning of the structural shift in how regions for the future are defined in an arena in which the possibilities are defined by technological capabilities.