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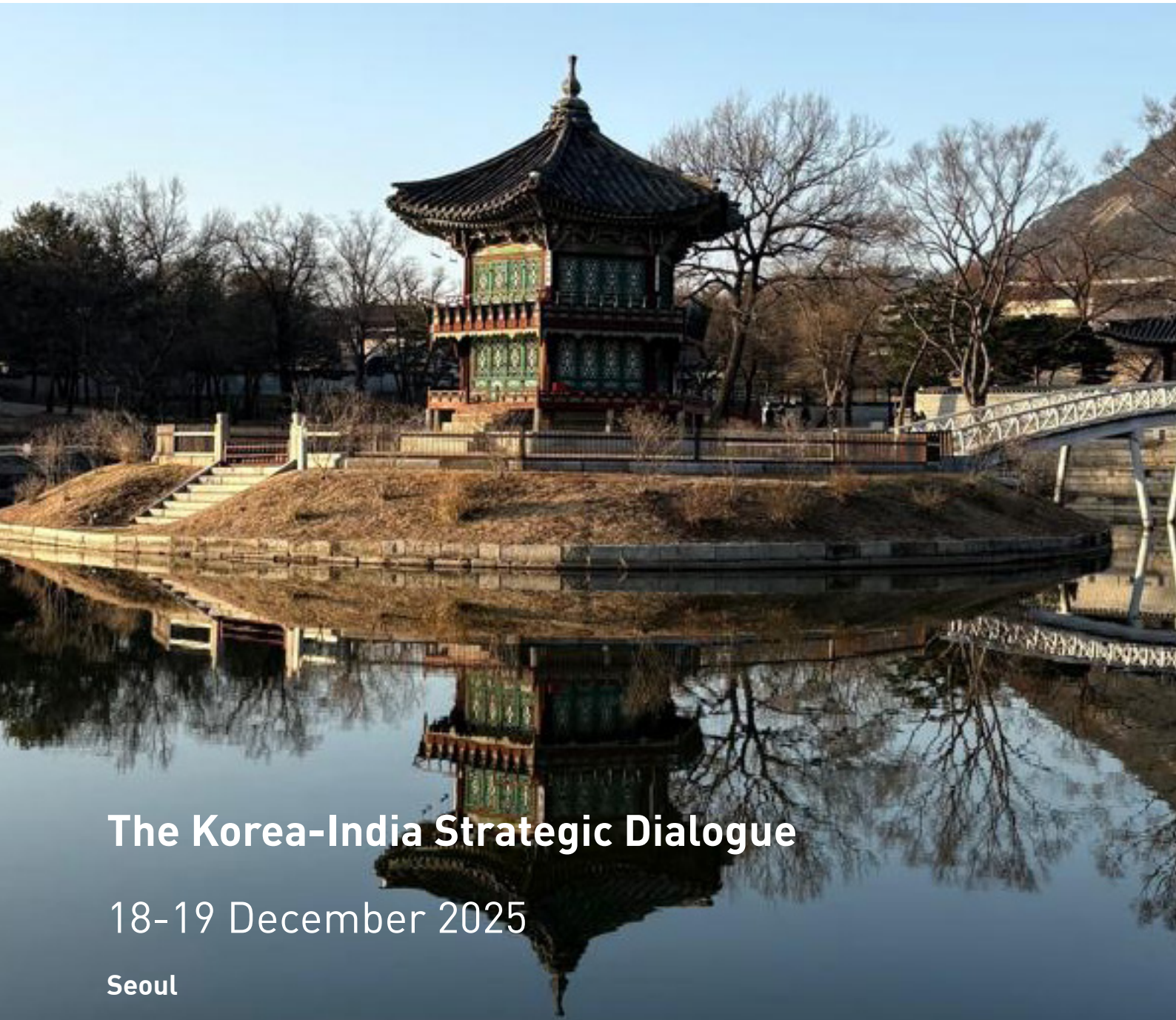

The Korea-India Strategic Dialogue

18-19 December 2025

Seoul

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Introduction

The 24th edition of the India-Korea Strategic Dialogue was held in Seoul from 17 to 19 December 2025. The dialogue unfolded against a backdrop of profound global transformation. The discussions provided an assessment of the structural and strategic constraints shaping the contemporary India–Korea relationship, particularly in trade, investment, maritime cooperation, emerging technologies, and people-to-people engagement.

While India and Korea possess clearly complementary industrial, technological, and economic strengths, the partnership has yet to achieve proportional depth or scale. Persistent challenges include stagnant bilateral trade, cautious Korean strategic engagement beyond its immediate region, regulatory and demand-side frictions in India, and an overconcentration on capital-intensive sectors (most notably semiconductors) that generate limited employment and ecosystem spillovers. At the same time, rapid shifts in the global order, including intensified US-China rivalry, trade protectionism, supply chain securitisation, and geopolitical shocks such as the war in Ukraine, have altered the operating environment globally. Across sessions, a consistent theme emerged: India-Korea cooperation is no longer optional or peripheral, but strategically necessary, as both countries face similar pressures. Having built a solid foundation in manufacturing and trade, the relationship must now evolve into a deeper, more structured partnership: one that moves beyond narrow sectoral enthusiasm toward sustained, demand-driven industrial cooperation, policy alignment, and ecosystem-based engagement. This recalibration is particularly critical in maritime infrastructure and shipbuilding, energy transitions, digital and financial systems, advanced technologies, defence production, and youth and cultural exchanges, all of which sit at the intersection of economic resilience and strategic stability.

Briefing by Ambassador Gourangalal Das, Ambassador of India to the Republic of Korea

The bilateral relationship between India and the Republic of Korea (RoK) is currently defined by a paradox: strong industrial complementarity offset by stagnant economic growth and a lack of strategic institutionalisation. While India views Korea as a critical partner for "Make in India," Korea's strategic focus remains largely confined to its immediate neighbourhood and its primary security alliance with the United States.

Current engagement is hindered by a "business-first" approach from the Korean side that lacks long-term geopolitical anchoring. This is evidenced by a significant investment gap, where only a fraction of pledged Korean capital has materialised, and a focus on capital-intensive sectors like semiconductors that do not solve India’s urgent need for mass employment. Furthermore, regulatory frictions in maritime procurement and a fragmented demand signal continue to deter deeper integration into Korean supply chains.

Korea historically aligns with one principal partner at a time (previously China, now the US). The "India-Korea-US" trilateral is currently fragile due to political transitions in Washington, and "US+1" strategies are not yet formal Korean government policy.

The Investment Execution Gap: Between 2016 and 2024, less than 10% of projected Korean investment materialised (INR 346 crore of 4,000 crore). This suggests that while intent is high, the "boots-on-the-ground" regulatory experience in India remains a deterrent. Cooperation in sectors like shipbuilding (e.g., Kochi Shipyard) fails because it is treated as a standalone project rather than an integrated ecosystem involving ports, energy firms, and finance.

Policy Recommendations

1. India should move away from chasing narrow sectoral wins and instead focus on Integrated Industrial Clusters. In the maritime sector, this means aligning port authorities, Indian oil companies (as procurers), and shipbuilders to provide Korean investors with a "plug-and-play" environment.

2. While semiconductors are prestigious, the government should pivot toward labour-absorbing high-tech sectors. Leverage Korea's lead in battery tech to build a domestic EV supply chain. Capitalise on Korea's willingness to export nuclear technology despite its domestic "anti-nuclear" stance.

3. Abolish "Right of First Refusal": Review protectionist port and shipping policies that discourage foreign JV participation.

4. Enable Indian private firms to be more attractive partners by extending tax concessions and financing incentives, currently limited to zones like GIFT City, to a broader range of strategic JVs.

5. Actively position Indian manufacturers to fill the vacuum in markets where Korean exports are currently constrained, specifically utilising Indian industrial capacity to substitute Korean goods in sanctioned or restricted markets like Russia.

India-Korea Strategic Dialogue

Session 1: Changing World Order and Korea–India Relations

The international landscape is currently undergoing a profound structural transformation, characterised by the erosion of the post-Cold War liberal international order and the intensification of great-power rivalries. Session 1 focused on the strategic convergence between the Republic of Korea (ROK) and India as they navigate this fragmented global environment. Traditionally defined by a transactional trade relationship centred on automobiles and electronics, the bilateral partnership is now evolving into a strategic imperative rooted in economic security and technological sovereignty.

As multilateral institutions like the WTO and the UN face paralysis, and the United States adopts an increasingly revisionist and protectionist stance, middle powers find themselves in a "G-minus-2" scenario. In this vacuum, the session highlighted that India and Korea are no longer merely "value-add" partners but are essential stabilisers. The discussion underscored a shift toward "minilateralism", flexible, action-oriented groupings, as the primary vehicle for maintaining a rules-based order in the Indo-Pacific.

The session established that the current global upheaval is not a temporary political fluctuation but a deep "tectonic shift." A primary point of consensus was the changing role of the United States. Historically, the guarantor of the global order, the U.S. is now perceived as a revisionist actor, dismantling the very multilateralism and alliance systems it once constructed. This retreat from a unipolar system toward aggressive industrial policies and sphere-of-influence politics has forced middle powers to recalibrate their dependencies.

A significant portion of the analysis focused on the alignment between the Lee Jae-myung government's "pragmatic, interest-based diplomacy" and the Modi government's pursuit of "strategic autonomy" and "multi-alignment." Despite different geopolitical traditions, both nations have reached a shared realisation: technology and economic security are now the bedrock of national defence.

India views itself as a burgeoning "pole" in a multipolar world and a leader of the Global South, seeking to counter regional encirclement while avoiding formal military blocs. Korea is diversifying its partnerships to reduce over-reliance on single superpowers, utilising its technological prowess as diplomatic leverage.

The "Three Pillars" of the relationship, automobiles, electronics, and general manufacturing, are now viewed as the "foundation phase." The session identified a critical need to move into "high-stakes" sectors. The analysis suggests that the integration of Korea's high-end technological capabilities with India's "Viksit Bharat 2047" vision (aiming for developed nation status by 1947) is the logical next step. This involves moving beyond a "buyer-seller" dynamic toward co-development and joint industrial ecosystems.

The failure of large-scale international bodies has elevated the importance of "minilaterals" such as KAII (Korea-Australia-Indonesia-India) and BIMSTEC. These frameworks allow for faster decision-making and provide a platform for India and Korea to exercise agency without being bogged down by the gridlock of great-power vetoes.

Policy Recommendations

1. Establish regular, integrated committees that bridge security, economic, and technology policies, moving beyond the "summit-only" model to create a predictable rhythm for long-term planning.

2. Economic security coordination: Align industrial policies to build "trusted" technology ecosystems. This includes synchronising supply chain strategies to mitigate vulnerabilities to external political coercion or global shocks.

3. Pivoting to advanced tech: Actively incentivise joint ventures in semiconductors, space exploration, and digital governance. Transitioning to co-development models in these areas will ensure long-term mutual interest.

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4. Maritime and defence infrastructure: Capitalise on "low-hanging fruit" by expanding cooperation in shipbuilding, logistics, and maritime security. This is particularly vital for securing Indo-Pacific sea lanes amid a declining U.S. naval presence. Energy resilience: Focus on clean energy transitions and nuclear energy cooperation as a means of ensuring long-term resource sovereignty.

5. Knowledge exchanges: Expand research fellowships and professional networking between the two nations' policy communities. Cultivating a foundation of "cultural fluency" and mutual trust among future leaders is essential for sustaining the partnership through future geopolitical shifts.

Session 2: The Impact of the US Tariff Regime on Global Trade and Supply Chains

The world is witnessing a systemic disruption of the global trade and investment landscape, primarily driven by the United States' shift towards aggressive protectionism, export controls, and state-led industrial policy. The discussion established that the current upheaval is not a transient political phase but a structural fusion of trade, technology, and national security into a singular policy framework. For middle powers like India and South Korea, this "post-rules" era presents a profound challenge to existing economic models. Participants noted that both nations are currently ensnared in a "dual dependency" trap, relying on American market access while remaining deeply integrated into Chinese production ecosystems. The session concluded that unilateral adaptation is no longer a viable strategy; rather, the India–Korea relationship must transition from a traditional trade partnership to a coordinated strategic alliance to navigate the erosion of multilateral norms. With the World Trade Organization's (WTO) dispute settlement mechanisms effectively paralysed, the session highlighted how trade access is now contingent upon geopolitical loyalty and regulatory alignment rather than price or quality.

A move from rules-based multilateralism to power-driven economic statecraft. The US tariff regime was characterised as structural and unpredictable, utilising "reciprocal tariffs" that frequently penalise allies as heavily as competitors. Simultaneously, China's state-led model, fuelled by industrial overcapacity, and the European Union's assertive regulatory standards have created a tri-polar pressure cooker for middle powers. This environment has forced a shift in supply chain logic from "lowest-cost efficiency" to "resilience-oriented architectures" and "trusted ecosystems."

A significant portion of the analysis focused on the technological and economic "near-perfect match" between the two nations. Korea's prowess in high-end manufacturing execution and technology standards provides the ideal counterpart to India's massive scale, public digital infrastructure, and expanding labour pool. This synergy is particularly potent in high-stakes sectors. Joint industrial ecosystems are viewed as essential for strategic autonomy. Collaboration in EV batteries and clean energy allows both nations to create a competitive alternative to the US-China binary. As US naval dominance faces potential overextension, the burden of securing maritime trade routes, a vital global public good, falls on regional powers.

The discussion further explored how Foreign Direct Investment (FDI) has lost its purely market-driven nature. Over half of global investment decisions are now dictated by geopolitical alignment. This trend disproportionately favours "mega-deals" in critical minerals and high technology, often marginalising Small and Medium Enterprises (SMEs). This shift necessitates new bilateral mechanisms to ensure SMEs are not excluded from the emerging industrial corridors.

Policy Recommendations

1. Integrated trade-security governance: Both governments should break down the silos between trade and national security departments. Policy decisions regarding export controls or technology standards must be vetted through a dual lens of economic benefit and strategic risk.

2. Upgrade of the comprehensive economic partnership agreement (CEPA): The existing FTA architecture is considered outdated. It requires

an urgent overhaul to incorporate digital trade protocols, facilitate labour mobility for high-tech workers, and synchronise technology standards.

3. Establishment of Joint Industrial Corridors: Moving beyond parallel diversification, India and Korea should incentivise co-investment in "frontier sectors" such as semiconductors and green hydrogen. This includes creating dedicated industrial zones and "green lanes" for Korean SMEs to integrate into India's manufacturing ecosystem.

4. Coordinated "Washington Strategies": Given that both nations face similar pressures from US trade enforcement, participants recommended sharing legal strategies and risk assessments to better navigate the unpredictable US policy environment.

5. Trilateral engagement in the global South: India and Korea should collaborate on infrastructure and development projects in Africa and Southeast Asia. By offering a transparent, rules-based alternative to extractive models, they can secure long-term influence in the world's fastest-growing emerging markets.

Keynote Address by Hyun Cho, the Minister of Foreign Affairs

In his keynote address at the 24th India-Korea Strategic Dialogue, His Excellency Hyun Cho, the Minister of Foreign Affairs, provided a sophisticated analysis of a global order defined by "sustained turbulence." Characterising current international instability as structural rather than temporary, exacerbated by the war in Ukraine and intensifying geopolitical rivalries, Minister Cho argued that resilient partnerships among like-minded nations are now a strategic imperative. He positioned the relationship between India and the Republic of Korea as essential for regional stability and the cultivation of a balanced global order. Minister Cho highlighted that while India has emerged as an increasingly influential global actor, Korea has similarly moved towards a more proactive geopolitical stance, with their partnership underpinned by the strong personal rapport between Prime Minister Narendra Modi and President Yoon Suk Yeol.

Economically, the Minister framed the partnership as a perfect synergy between Korea's advanced manufacturing expertise and India's vast market, skilled workforce, and rapid digitalisation. To move this relationship forward, policy efforts should prioritise shifting engagement towards future-oriented sectors such as Artificial Intelligence, semiconductors, and green energy. By aligning Korean technological roadmaps with India's Viksit Bharat 2047 goals, both nations can transition from traditional trade to high-value joint R&D. Furthermore, the successful K9 Vajra artillery programme serves as a mature blueprint for defence; the recommendation is to scale this model of co-production and technology transfer into naval shipbuilding and aerospace, while simultaneously increasing the complexity of joint naval, air, and ground exercises.

Minister Cho also emphasised that the bedrock of this special strategic partnership is a shared commitment to democratic values and a burgeoning cultural connection. Beyond the popularity of yoga and K-pop, he advocated for the institutionalisation of creative synergies through co-production agreements in film and digital media. To support this, policymakers should focus on strengthening people-to-people exchanges by simplifying visa procedures for students and professionals, particularly in STEM fields, to anchor the relationship in robust societal connections.

Finally, the address underscored the necessity of deep strategic coordination to manage Indo-Pacific uncertainties. Minister Cho recommended institutionalising regular dialogues between National Security Advisors and foreign policy principals to align priorities on multilateralism and climate action. Drawing on his own extensive experience, the Minister concluded that a sustainable partnership must transcend mere calculated interest; it must be built on a foundation of trust, respect, and "empathy and openness." By harmonising these strategic, economic, and cultural pillars, India and Korea can effectively navigate the structural disruptions of the modern era

Session 3: Shipbuilding, Automotive, and Defence Production

The strategic partnership between India and the Republic of Korea (ROK) has reached a critical inflection point, characterised by a transition from traditional trade to high-stakes industrial co-creation. As Korea asserts its ambition to become the world's fourth-largest defence exporter, India is simultaneously accelerating its "Atmanirbhar Bharat" (self-reliant India) initiative to mitigate regional security pressures and modernise its military infrastructure. Session 3 highlights that while the political will for cooperation is at an all-time high, the partnership must now bridge the "execution gap" to move beyond a buyer-seller dynamic. With India projected to become the world's third-largest economy and Korea seeking to de-risk its supply chains from China, a time-sensitive window has opened to integrate Korea's advanced engineering with India's massive scale and domestic demand.

The discussion centred on the premise that defence and maritime cooperation are no longer peripheral but are the "catalytic sectors" required to unlock the full potential of the bilateral relationship. Despite the 2010 Comprehensive Economic Partnership Agreement (CEPA), trade volumes have remained below their theoretical potential; however, defence industrial collaboration, built on long-term trust and dual-use technology, offers a roadmap for deeper economic integration.

The K9 Vajra-T self-propelled howitzer, co-produced by Hanwha Aerospace and Larsen & Toubro, serves as the definitive proof of concept. The analysis suggests that the success of the K9 project provides a repeatable model for other domains. The challenge lies in duplicating this success across more complex platforms. For instance, the land domain offers synergies between Korea's K2 Black Panther main battle tank and India's indigenous rocketry programs. Similarly, in the aerospace sector, the potential for joint R&D between India's Tejas and Korea's KF-21/FA-50 fighters represents a frontier for high-end technology transfer.

Shipbuilding emerged as the most immediate and scalable pillar of the partnership. India's "Maritime Amrit Kaal Vision 2047" aims to propel the nation into the top five global shipbuilding ranks, yet its current infrastructure remains fragmented. Conversely, Korea is a global titan in maritime technology and is currently seeking alternative subcontracting hubs. This convergence is particularly potent in "Green Shipping." As the industry shifts towards hydrogen and electric propulsion, India and Korea could leapfrog traditional diesel technologies through joint ventures in naval architecture and sustainable maritime systems.

The emergence of the Korea Aerospace Agency (KASA) in 2024 provides a natural counterpart to the Indian Space Research Organisation (ISRO). The analysis points to a complementary relationship where India's cost-effective launch capabilities can be paired with Korea's sophisticated satellite and surveillance technologies. Furthermore, the integration of AI-driven defence and cybersecurity into the bilateral agenda reflects a shift towards "frontier" defence, where India's vibrant startup ecosystem can provide agile software solutions for Korea's hardware-heavy defence platforms.

Policy Recommendations

1. Institutionalisation of the Defence Secretariat: Establish a permanent India-ROK Defence Cooperation Secretariat within both Ministries of Defence. This body would serve as a "fast-track" mechanism to bypass the bureaucratic "corporate fatigue" that often stalls major procurement projects.

2. Expansion of the K9 model to naval systems: Launch a specific "Korea–India Naval Shipbuilding Partnership Initiative." This should focus on the joint production of frigates, corvettes, and next-generation submarines (leveraging Korea's KSS-III expertise), moving beyond the current stagnation in naval cooperation.

3. Phased strategic roadmaps: Implement short-term (1–3 years) and long-term (9-15 years) roadmaps that mandate technology transfer clauses in every major bilateral contract, ensuring that Indian industry gains the "high-end engineering" know-how over time.

4. Semiconductor and critical tech alignment: Form a Bilateral Semiconductor Task Force, potentially under a US-India-Korea trilateral framework, to encourage firms like Samsung and SK Hynix to establish fabrication facilities in India's defence industrial corridors.

5. Incentivising the SME ecosystem: Actively attract Korean component manufacturers (SMEs) to Indian defence hubs by providing a predictable regulatory roadmap and cross-border venture capital funds targeting startups in AI and robotics.

6. Triangular security cooperation: Position the bilateral relationship as a core pillar of Indo-Pacific security by regularising trilateral naval exercises (India-Korea-Japan) and coordinating within "Quad-Plus" frameworks on maritime domain awareness.

Session 4: Korea–India Partnership in Digital Transition and SMEs/ Startups

The bilateral relationship between India and the Republic of Korea is undergoing a fundamental shift, transitioning from a traditional trade-based model towards a sophisticated, digital-first partnership. This evolution is driven by the complementary nature of their current economic stages: India has pioneered a globally recognised Digital Public Infrastructure (DPI), often referred to as the "India Stack," which has achieved unparalleled scale in financial inclusion and public service delivery. Conversely, Korea possesses world-class deep tech capabilities, institutional expertise, and substantial capital reserves. The session underscored that the strategic objective is to bridge India's massive domestic scale with Korea's technological "polish," creating a synergistic ecosystem that benefits not only the two nations but also serves as a blueprint for the broader Global South.

India's DPI, encompassing identity (Aadhaar), payments (UPI), and data exchange, has transitioned from a public utility to a primary factor of production. For startups and Small and Medium Enterprises (SMEs), this infrastructure reduces the cost of customer acquisition and fosters rapid innovation. However, a significant "market intelligence" gap persists. While Korean investors recognise India's potential, many remain deterred by perceived regulatory complexities and a lack of granular data regarding the Indian market.

The session noted successful precedents, such as the fintech firm AFINIT and the rising popularity of Korean cosmetics, as evidence of market viability. However, there is a clear imperative to pivot from consumer goods towards advanced technology sectors. India is actively seeking Korean investment in semiconductors, 5G/6G, and AI, moving beyond the historical dominance of Korean clothing and manufacturing firms.

India is characterised as a price-conscious, competitive volume market. Consequently, Korean SMEs cannot simply transplant domestic models; they require "India-tailored" strategies to succeed. The dialogue also identified the next frontiers for DPI, Energy and Health Stacks, as the most fertile ground for immediate bilateral collaboration, particularly as AI integration becomes a global standard for healthcare delivery and green energy management.

A recurring theme was the limitation of traditional venture capital in addressing early-stage social impact and deep-tech ventures. The analysis suggested that blended finance, the strategic combination of public grants, official development assistance (ODA), and private equity, is essential to mitigate risk. This is particularly vital for supporting women-led enterprises and green-tech startups, where the return on investment may be long-term, but the social and economic dividends are high.

Policy Recommendations

1. Institutional frameworks for information symmetry: Establish a formal government-to-government (G2G) mechanism to share market intelligence and regulatory updates. This includes creating an "entry green lane" to help Korean startups navigate Indian regulations through local incubators and joint venture platforms.

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2. Financial support mechanisms: The Korean government, in collaboration with the private sector, should move to create a "Fund of Funds." This dedicated financial vehicle would provide the necessary capital cushion for Korean SMEs attempting to scale within the Indian ecosystem.

3. Sectoral expansion into health and energy: Policymakers should prioritise the interoperability of digital systems in healthcare and energy. By aligning standards early, both nations can co-develop AI-driven solutions for diagnostic health and smart grid management.

4. Localised cooperation: Encourage "city-to-city" and "municipality-to-municipality" partnerships. These smaller-scale collaborations often produce more immediate, practical results and can serve as testing grounds for larger national rollouts.

5. Joint export of the "digital model": India and Korea should leverage their combined expertise, India's experience in large-scale operations and Korea's technical precision, to jointly pitch digital solutions to emerging markets in Africa and the Indo-Pacific. This positions the partnership as a leader in the digital transformation of the Global South

Session 5: Deepening Financial Market Cooperation

Centred on the structural evolution of the Indian market and the specific barriers preventing a surge in Korean inflows. The strategic alignment of the Indian and South Korean financial ecosystems identifies a significant disconnect between India's economic trajectory and Korean capital allocation. While India's market capitalisation has ascended past the $5 trillion milestone, cementing its status as a global powerhouse, South Korean institutional participation remains disproportionately low. The discussion underscored that while the appetite for diversification among Korean pension funds and asset managers is evident, the bilateral financial bridge remains underutilised due to regulatory friction and a persistent lack of familiarity with the Indian landscape. A primary point of consensus was the transformative role of the "domestic anchor" in India.

Participants highlighted a seismic shift in India's market resilience, driven by a domestic investor base that has expanded from 40 million to over 140 million in just five years. This surge provides a cushion against global volatility; however, the session concluded that foreign participation remains an indispensable pillar for long-term stability and the funding of large-scale infrastructure projects. The dialogue suggested that Korean capital is the ideal partner for this "patient capital" requirement, yet it remains on the sidelines.

A striking revelation during the session was South Korea's absence from the top ten list of foreign investors in India. The analysis attributed this not to a lack of opportunity, but to information asymmetry and operational friction. Early Korean entrants who adapted their operational models to the local environment have realised significant returns, yet new entrants are often deterred by the perceived complexity of Indian entry points.

The private markets, specifically private equity and infrastructure funds, were identified as the most promising frontiers, currently experiencing a growth rate exceeding 30% annually. The session noted that for Korea to capture this growth, there must be a transition from treating India as a peripheral market to viewing it as a core strategic destination for long-term institutional portfolios.

The discussion further explored the natural synergy between the two nations:

Korea's Contribution: Sophisticated risk-management expertise, massive pension fund liquidity (notably the NPS), and advanced capital-market infrastructure.

India's Offering: Unrivalled scale, a digital-first economy, and a high-growth manufacturing sector requiring sustained capital expenditure.

Policy Recommendation:

1. Institutionalised Regulatory Dialogue: The most urgent recommendation involves the

creation of a Financial Working Group. This body would serve as a direct link between regulators (such as SEBI and the FSC) and major pension fund managers. The goal is to benchmark India's access processes against other global hubs (like Singapore or Dubai) to ensure that Korean investors face a familiar and streamlined environment.

2. Streamlined Entry for "Trusted Investors": To combat operational friction, the report advocates for a Fast-Track status for major Korean sovereign and pension funds. By simplifying documentation and providing greater tax certainty, India can lower the barrier to entry for the exact type of "patient capital" it seeks. This includes clarifying the tax treatment of various investment vehicles to prevent the "hot money" volatility associated with short-term retail flows.

3. Collaborative Investment Frameworks: The launch of Co-Investment Vehicles and joint fund-of-funds structures. These platforms would pair Korean capital with Indian "boots on the ground" expertise, effectively outsourcing the local due diligence and operational management to entities that understand the nuances of the Indian market. This model reduces the perceived risk for Korean asset managers who lack a physical presence in the subcontinent.

4. Targeted Sectoral Deployment: There was a strong consensus that cooperation should be directed toward priority sectors including green energy, digital transformation, and ESG-related infrastructure. By aligning financial cooperation with broader bilateral goals in technology and sustainability, both nations can ensure that capital flows contribute to long-term economic resilience rather than speculative gains.

Session 6: AI, Semiconductors, and Energy Cooperation

The contemporary geopolitical landscape has witnessed a fundamental shift where technological prowess is no longer merely a metric of economic success but a prerequisite for national survival. As Artificial Intelligence (AI), semiconductors, and green energy emerge as the primary theatres of global competition, the bilateral relationship between India and South Korea has taken on newfound strategic importance. While the United States and China currently maintain a duopoly over the global tech stack, this session highlighted a burgeoning "third way" led by middle powers. By leveraging open ecosystems and inclusive innovation, India and South Korea aim to build a resilient technological corridor that prioritises strategic autonomy and accessibility, ensuring that the next generation of foundational technology is not monopolised by a few closed-source giants.

The transition of AI from a specialised laboratory pursuit to a foundational layer of global infrastructure is a central theme of the current industrial era. Industry leaders, most notably Samsung, have pivoted towards an "AI-centric" corporate philosophy, seeking to integrate AI across diverse sectors ranging from semiconductors to consumer appliances. This strategy is driven by the "AI for All" vision, which posits that advanced capabilities must be disseminated throughout society to remain viable.

A critical pillar of this transformation is the evolving role of India within the South Korean innovation ecosystem. India has moved beyond its historical role as a provider of basic software support to become one of Samsung's most vital global R&D hubs. This partnership is now yielding high-end intellectual property, such as the development of Galaxy AI. Participants noted that India's R&D potential is viewed by Korean firms as potentially exceeding that of traditional hubs in Europe or North America, offering a unique combination of high-quality engineering and scaled application.

The consensus among session experts was that AI cannot be divorced from its physical requirements. Semiconductors serve as the lifeblood of the digital transition, and the structural complementarities between Korea and India offer a potent hedge against global supply chain volatility. South Korea maintains a dominant position in memory chip fabrication and large-scale manufacturing, while India is aggressively building its ecosystem through a subsidy policy modelled after the US CHIPS Act.

The analysis underscored that India's strengths in chip design, combined with its emerging capabilities in assembly, testing, and specialty materials like Gallium Nitride (GaN) for defence, provide a fertile ground for Korean investment. By aligning these strengths, both nations can mitigate the risks of "digital colonisation" and reduce over-reliance on a single superpower's supply chain, thereby securing their respective economic futures.

A shared dilemma identified during the session is the immense capital and "compute" requirements needed to maintain technological sovereignty. Both New Delhi and Seoul face the risk of becoming dependent on proprietary US models or China-led open-source initiatives that may come with restrictive strings attached.

To counter this, there is a strong push for "Sovereign AI", models that are rooted in local cultural contexts and Asian languages. India's National AI Mission, which includes the curation of 12,000 hours of indigenous language data, serves as a blueprint for this. The session emphasised that open-source AI is not just a technical preference but a strategic necessity. By collaborating on shared, transparent models, India and Korea can create a secure alternative to closed global stacks, ensuring their policy independence in both commercial and military spheres.

The technological race extends into the green transition, where India's ambitious goal of 500 GW of renewable energy by 2030 aligns with South Korea's leadership in clean tech. South Korea remains the world's second-largest battery producer, possessing advanced intellectual property in Battery Management Systems (BMS) and thermal regulation. Discussions highlighted significant breakthroughs in cathode roasting to enhance Lithium Iron Phosphate (LFP) battery performance, potentially extending ranges beyond 500km. This synergy allows for a "Green" supply chain where Korean material science meets Indian market scale and manufacturing ambitions.

Policy Recommendations

1. Institutionalise joint R&D programs: Move beyond traditional vendor-client relationships to establish bilateral research laboratories. These facilities should focus specifically on edge computing and device-level AI to reduce latency and enhance data privacy.

2. Establish a bilateral compute framework: To lower the barrier to entry for startups, both nations should pool computational resources. This shared infrastructure would allow smaller firms to train Large Language Models (LLMs) without the prohibitive costs of private cloud services.

3. Support open-source standardisation: Jointly fund and advocate for open-source AI tools. This ensures a transparent technological environment and prevents the emergence of proprietary "black box" systems that could threaten national security.

4. Harmonise green tech certification: Implement a common certification process for recycled materials and carbon-capture technologies. Synchronising these standards will accelerate cross-border trade and build a more resilient, circular supply chain for EV batteries and hydrogen fuel cells.

5. Create a formal platform for Indian and South Korean energy firms to collaborate on smart grids and hydrogen production, focusing on the integration of AI to optimise energy distribution and carbon sequestration.

Session 7: Youth and Cultural Exchanges

The bilateral relationship between South Korea and India has entered a transformative phase, catalysed by the unprecedented surge of the "K-Wave" (Hallyu) across the Indian subcontinent. Once a niche interest, Korean dramas, music, and skincare have permeated Indian mainstream markets, particularly among the youth. However, Session 7 highlights that while this cultural affinity is a potent tool of soft power, it currently operates as a largely one-sided, consumption-based phenomenon centred in urban hubs. To transition from a fleeting trend into a deep-rooted institutional partnership, the dialogue emphasises that culture must be viewed as a

strategic pillar. In a multipolar world, cultural resonance serves as the essential bedrock of trust required to sustain cooperation in more rigid sectors like defence, trade, and technology.

Unlike many of their regional neighbours, India and South Korea enjoy a relationship characterised by a "clean slate." The absence of historical friction or territorial disputes allows for a level of mutual goodwill that is rare in modern geopolitics. This lack of historical baggage has enabled Korean brands such as Samsung and LG to integrate so deeply into the Indian psyche that they are often perceived as "almost Indian." This psychological integration represents a pinnacle of soft power that provides a sturdy foundation for future youth engagement.

A critical takeaway from the session is the need to move beyond a transactional model where Korea is the exporter and India the consumer. While India represents a massive market of over 15 million K-content consumers, the untapped potential lies in collaborative production. By merging India's $20 billion entertainment industry with Korea's sophisticated digital storytelling and gaming expertise, the two nations can evolve from a "creator-audience" dynamic into a formidable creative partnership on the global stage.

Despite high levels of enthusiasm, the "youth gap" in education remains a significant barrier. The analysis points to several systemic hurdles. A lack of English-taught programmes in Korean universities discourages qualified Indian candidates. The frustrating lack of mutual degree recognition complicates career paths for returning students. Cultural exchange remains disproportionately focused on metropolitan centres, neglecting the vast digital appetite in India's Tier-2 and Tier-3 cities.

Policy Recommendations

1. Institutionalising the creative economy: The creation of a permanent "Creative Industries Forum" is recommended to facilitate joint ventures in film, gaming, and digital media. This would transition the relationship from "soft power consumption" to "economic co-production," leveraging the strengths of both Bollywood and the K-content ecosystem.

2. To foster a new generation of bilateral leaders, the following steps are vital: Youth Fellowship Schemes: Establish an annual Korea-India Youth Fellowship providing funding for short-term research and cultural projects, supported by a structured alumni mentoring network. Credit Streamlining: Governments must work toward the mutual recognition of university credits and expand the availability of English-medium degrees in Korea.

3. Specialised visa and migration categories: The introduction of fast-track, reciprocal visas specifically for students, interns, and young professionals is essential. Dedicated cultural visa categories would ease the movement of "cultural ambassadors," signalling a high-level commitment to deepening people-to-people ties.

4. Decentralisation of cultural diplomacy: Cultural initiatives must move "Beyond the Metros." By taking language programmes and festivals (like Sarang) into India's Tier-2 and Tier-3 cities, the partnership can tap into a larger, more diverse demographic. Simultaneously, targeted tourism campaigns focused on heritage, wellness, and music should be launched to capitalise on India's growing outbound travel market.

5. Countering one-dimensional perspectives: Finally, the session advocates for using educational exchanges to actively dismantle stereotypes. By promoting a more nuanced understanding of India's vast diversity and Korea's democratic resilience, both nations can ensure that their partnership is built on mutual respect rather than superficial trends. Supporting Track 2 platforms and youth-led public diplomacy projects will empower the next generation to design and implement their own visions for the bilateral future.

Conclusion

The Dialogue underscored that the principal constraint on India–Korea relations is not a lack of goodwill or complementarity, but an execution and institutionalisation gap in translating shared strategic intent into durable outcomes. In an era of sustained global turbulence, characterised by the erosion of the post-Cold War order and the politicisation of economic interdependence, middle powers such as India and Korea face heightened vulnerability, but also unprecedented opportunity.

The discussions highlighted the need for a decisive shift in bilateral engagement: from transactional trade to long-term industrial partnerships; from isolated projects to integrated ecosystems; from ad hoc business interactions to institutionalised strategic coordination; and from cultural consumption to people-to-people infrastructure anchored in youth, education, and co-creation. Cooperation in advanced manufacturing, shipbuilding and maritime technologies, digital public infrastructure, fintech, financial markets, AI and semiconductors, clean energy, and defence production emerged as both economically rational and strategically imperative.

Equally, the Dialogue reinforced that the sustainability of the partnership will depend not only on capital and technology, but on trust, predictability, and human connectivity. Stronger regulatory clarity, credible demand signals, empowered joint venture frameworks, and deeper cultural and educational exchanges are essential to anchoring the relationship in the long term. Taken together, the sessions point toward a clear strategic conclusion: India and Korea are indispensable partners in shaping a more resilient, balanced, and inclusive regional and global order. By aligning their economic engagement with geopolitical realities and future growth drivers, the two countries can transform their partnership from a largely opportunity-driven relationship into a structurally embedded pillar of stability in the Indo-Pacific and beyond.

AGENDA

DAY 1	
08:30–09:00	Registration and networking
09:00-09:10	Opening Remarks 1.**Guido Song**, President, The Korea Foundation 2.**Taeho Bark**, President, The Seoul Forum for International Affairs 3.**Indrani Bagchi**, CEO, Ananta Centre
	Welcome Remarks by the Co-Chairs **Young-kwan Yoon**, Chairman, Asan Institute for Policy Studies and Former Minister of Foreign Affairs and Trade
09:10 – 09:20	**Address by Gourangalal Das**, Ambassador of India to the ROK
09:20–10:50	SESSION 1. **Changing world order and Korea-India relations in the Indo-Pacific and minilateral groupings** Moderator: Sang Hyun Lee, Senior Fellow, Sejong Institute Korean Speakers (2): **Jae-bok Jang**, Former Ambassador of the ROK to India **Chanwahn Kim**, Professor, HUFS Indian Speakers: **Indrani Bagchi**, CEO, Ananta Centre **C Raja Mohan**, Distinguished Fellow at the Council on Strategic and Defence Research
10:50-11:00	Break
11:00-12:30	SESSION 2. **US tariff regime, trade and global supply chain** Moderator: Indrani Bagchi, CEO, Ananta Centre Korean Speakers (2): **Chul Chung**, President, Korea Economic Research Institute (KERI) **Tae Sik Han**, Business Economist, LG Business Research Indian Speakers: **Pramit Pal Chaudhuri**, India Practice Head, The Eurasia Group **Naushad Forbes**, Chairman, Ananta Centre and Co- Chairman, Forbes Marshall
12:30–14:00	**Luncheon** **Keynote address by Hyun Cho, Minister of Foreign Affairs**

AGENDA

DAY 1	
14:00–15:30	SESSION 3. **Shipbuilding, automotive and defence production cooperation** Moderator: **Choong Yong Ahn**, Distinguished Professor, Chung-Ang University Korean Speakers (3): **Jung-Chul Bae**, President, Korea Marine Equipment Research Institute **Won Joon Jang**, Associate Professor, Jeonbuk National University **Peter K. Lee**, Research Fellow, The Asan Institute for Policy Studies Indian Speakers: **Subhomoy Bhattacharya**, Professor of Practice & Director, Centre for Regulatory Governance, Jindal Global Law School, O.P Jindal Global University
15:30-15:45	Break
15:45-17:15	SESSION 4. **Korea-India partnership in digital transition and SMEs/startups** Moderator: Kyungjin Song, Research Fellow, Asiatic Research Institute, Korea University Korean Speakers (2): **Charlie Lee**, CEO, AFINIT **Jeong Tae Kim**, CEO, MYSC Indian Speakers: **Arvind Gupta**, Head and Co-Founder, Digital India Foundation
18:00-20:00	**Reception and Dinner**

AGENDA

DAY 2	
09:00-10:00	SESSION 5. **Greater potential for cooperation in financial markets** Moderator: **Yoon Je Cho**, Former Ambassador of the ROK to the United States and the United Kingdom Korean Speakers (3): **Jong-hyun Won**, Chairman of Trustee Responsibility Committee, National Pension Service (NPS) **Jun Young Hong**, Chief Business Officer, Mirae Asset Global Investments Speakers: **Ananth Narayan**, Former Whole Time Member, SEBI
10:00-11:00	SESSION 6. **AI, semiconductors**, and energy cooperation Moderator: **Pramit Pal Chaudhuri**, India Practice Head, The Eurasia Group Korean Speakers (2): **Daehyun Kim**, Executive Vice President and Head of the Global AI Center, Samsung Research **Yunju Ko**, Chief Sustainability Strategy Officer, LG Chem Indian Speakers: **Aditya Ramanathan**, Research Fellow, Takshashila Institute
11:00-11:15	Break
11:15-12:15	SESSION 7. **Youth and cultural exchanges** Moderator: **Prof. Yeon-jung Ji**, ROK Naval Academy Korean Speakers (2): **Soon-Cheul Lee**, Professor, Busan University of Foreign Studies **Sanjay Kumar**, Journalist, The Korea Herald Indian Speakers: **Indrani Bagchi**, CEO, Ananta Centre
12:15-12:30	Lunch
14:00-16:00	**Guided tour of Gyeongbokgung Palace, Seoul**

KOREAN DELEGATION

1. Amb. Hyun CHO, Minister of Foreign Affairs
2. Amb. Guido SONG, President, The Korea Foundation
3. Prof. Taeho BARK, President, The Seoul Forum for International Affairs
4. Prof. Young-kwan YOON, Chairman, Asan Institute for Policy Studies and Former Minister of Foreign Affairs and Trade
5. Dr. Sang Hyun LEE, Senior Fellow, Sejong Institute
6. Mr. Jae-bok CHANG, CEO, CityNet Secretariat, Former Korean Ambassador to India
7. Prof. Chan Wahn KIM, Director, Institute of Indian Studies, HUFS
8. Mr. Tae Sik HAN, Research Fellow, LG Business Research
9. Dr. Chul CHUNG, President Chief Research Officer, Korea Economic Research Institute
10. Prof. Choong Yong AHN, Distinguished Professor, Chung-Ang University, Graduate School of International Studies
11. Dr. Jung Chul BAE, President, Korea Marine Equipment Research Institute
12. Prof. Won Joon JANG, Associate Professor, Jeonbuk National University
13. Dr. Peter K. LEE, Research Fellow, The Asan Institute for Policy Studies
14. Dr. Kyungjin SONG, Research Fellow, Asiatic Research Institute, Korea University
15. Mr. Cheol-won Lee, CEO, AFINIT
16. Mr. Jeong Tae KIM, CEO, MYSC
17. Prof. Yoon-je CHO, Distinguished Professor, Yonsei University
18. Dr. ChongHyun WON, Chair of Council on Fiduciary, Korea National Pension FundManagement Committee
19. Mr. Junyoung HONG, Executive Director, Mirae Asset Global Investment
20. Mr. Daehyun KIM, Head of AI Center, Samsung Research
21. Amb. Yunju KO, Chief Sustainability Strategy Officer, LG Chem
22. Prof. Yeon-jung JI, Assistant Professor, Republic of Korea Naval Academy
23. Prof. Soon Cheul LEE, Professor, Busan University of Foreign Studies
24. Dr. Sanjay KUMAR, Journalist, The Korea Herald

INDIAN DELEGATION

1. Naushad Forbes, Co-Chairman, Forbes Marshall Private Ltd and Chairman, Ananta Aspen Centre
2. Gourangalal Das, Ambassador of India to the Republic of Korea
3. Aditya Ramanathan, Research Fellow, Takshashila Institute
4. Ananth Narayan, Former Whole Time Member, SEBI
5. Arvind Gupta, Head and Co-Founder, Digital India Foundation
6. Indrani Bagchi, CEO, Ananta Centre
7. Pramit Pal Chaudhuri, India Practice Head, The Eurasia Group
8. C Raja Mohan, Distinguished Fellow, Council on Strategic and Defence Research
9. Subhomoy Bhattacharjee, Professor of Practice & Director, Centre for Regulatory Governance, Jindal Global Law School, O.P Jindal Global University

Snapshots


The 24th
Korea-India
Strategic
Dialogue
The 24th
Korea-India
Strategic
Dialogue


The 24th
Korea-India
Strategic
Dialogue
The 24th
Korea-India
Strategic
Dialogue


Hyun CHO
Minister of
fairs of


The 24th
Korea-India
Strategic
Dialogue


Young-kwan YOON
Indrani BAGCHI


The 24th
Korea-India
Strategic Dialogue


Congratulatory Remarks
Gourangalal DAS


The 24th
Korea-India Strategic Dialogue

KERI Korea Economic Research Institute

Navigating the Dual Shock: A Korea–India Strategy in the New Era of U.S. Tariffs and Supply Chain Realignment

The 24th Korea-India Strategic Dialogue
December 18, 2025

Chul Chung

President / KERI
Chief Research Officer / FKI

CONTENTS

KERI Korea Economic Research Institute

1. New Trade Reality

KERI Korea Economic Research Institute

The World is Entering a New Trade Regime

KERI Korea Economic Research Institute

- Geoeconomics now drives market access
- Technology + Security + Industrial Policy convergence
- Korea and Indica stand at the center of this transformation

04

The underlying mechanism of the "Dual Shock" (US tariffs + China overcapacity)

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- **Diagnosis: not a cyclical disturbance, but a structural shift**

Shock 1: The U.S. Tariff-Tech-Security Regime

- **The U.S. tariff regime is no longer a trade instrument. It is a unified package of industrial policy, national security rules, local content rules, and technology standards.**
  - **Product-specific tariffs with strategic intent**
  - **Industrial policy + supply chain "trust" criteria**

05

The underlying mechanism of the "Dual Shock" (US tariffs + China overcapacity)

KERI

Shock 2: China's Structural Overcapacity

- **Key Sectors: EVs, Batteries, Solar, Steel creating systemic price depression**
- **Global cost distortion and market instability**
- **Accelerating reshoring and friend-shoring pressures**

- **Together, an integrated shock that is transforming global industrial geography.**

06

Why Dual Shock matters for Korea and India

KERI Korea Economic Research Institute

- ❖ Both are mid-sized powers with manufacturing depth and deeply connected to the U.S. and China
- ❖ Dual shock → amplified risks and new opportunities to both
- ➢ Korea = Technology + Standards + High-quality Manufacturing
- ➢ India = Scale + Market + Digital Public Infrastructure (DPI)
- ➢ "Tech x Scale x Rules" ¯ the most competitive configuration under the new global order; Strategic Complements
- ◆ Eg. Samsung + India's electronics ecosystem,
  Hyundai Kia + India's automotive scale
- ❖ Both may benefit from supply chain reconfiguration

07

2. Evolution of Global Supply Chains

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Shifting Supply Chain Paradigms

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Phase 1: Cost Optimization (2000-2015)

- **China-centric, market/efficiency-driven: Alfaro & Chor (framework)**

Phase 2: Risk Diversification (2015-2022)

- **Focused on resilience following trade war, geopolitics, pandemic shocks**

Phase 3: Strategic Alignment (2015-)

- **Focus: Strategic alignment with security & technology ecosystems**
- **Key Drivers: Chokepoint technologies (AI, semiconductors, EVs, batteries)**

09

Characteristics of the Alignment Phase

KERI

- **Tariffs integrated with industrial policy**
- **"Trusted Supply Chain" status shapes market access**
- **Anti-subsidy rules, carbon standards, rules of origin → Geopolitical Tools**
- **Standards competition in AI, semiconductors, EVs, batteries intensifying**

010

3. Strategic Challenges for Korea and India

KERI Korea Economic Research Institute

KERI Korea Economic Research Institute

Challenge 1: Diversification vs. Consolidation

- **Dual Shock requires Dual Strategy**
  - **1. Diversification**
    - **New production bases in India, ASEAN, Mexico, Middle East**
  - 2. Consolidation
    - **Deepen U.S. aligned value chains (EVs, batteries, semiconductors, materials)**
- **Opportunity:**
  - **Korea's manufacturing precision × India's production scale**
    → A next-generation value-chain partnership

012

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Challenge 2: Navigating CPTPP–EU Connectivity

- Even non-members, both countries face expanding CPTPP influence
- EU's carbon (CBAM), environmental (ESG), labor regulations becoming global benchmarks
- Korea & India increasingly operate under "rule convergence pressure"
- Joint Needs: Shift from *Passive Adaptation → Active Rule-Shaping*
  - Digital trade rules cooperation
  - Interoperability in supply-chain documentation and origin rules
  - Joint participation in standards-setting bodies (ISO, IEC, ITU)

013

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Challenge 3: China's Industrial Overcapacity

- Shared vulnerability in EV, batteries, solar, steel industries
- Joint Action Agenda:
  - Anti-subsidy/anti-dumping strategy cooperation
  - Common environmental and carbon-intensity compliance
  - Joint ventures in Middle East, Africa, ASEAN

* Building *a fair and sustainable regional industrial ecosystem*, to counter China's distortions

014

4. Policy Recommendations

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Towards a Korea-India Supply Chain Partnership

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Pillar 1: Korea-India Trusted Supply Chain Corridor

- Focus sectors: semiconductors, batteries, automotive, electronics
- Mutual recognition of testing and certification
- Critical minerals traceability compliance
- Joint R&D and integrated testing clusters

Pillar 2: Joint Task Force on U.S. Tariff & Regulatory Strategy

- Shared tariff-impact models
- Coordinated legal interpretations
- Quarterly scenario analysis exercises

016

Future-Proofing the Partnership

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Pillar 3: Digital & AI Trade Infrastructure Collaboration

- India's Digital Public Infrastructure (DPI) + Korea's AI & smart manufacturing
- AI-enabled customs, trusted-data frameworks, supply-chain automation

Pillar 4: Twin-Hub Model (Production + R&D)

- Linking Clusters: (Chennai / Gujarat) ↔ (Ulsan / Pyeongtaek / Gwangju)
- Integrated Manufacturing – R&D - Testing hubs

Pillar 5: Third Country Expansion

- Cooperation: industrial triangle (Korea-India-Middle East/Africa/ASEAN)
- Co-developing industrial parks: renewable energy + EV + digital infrastructure

017

5. Conclusion

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From Uncertainty to Opportunity

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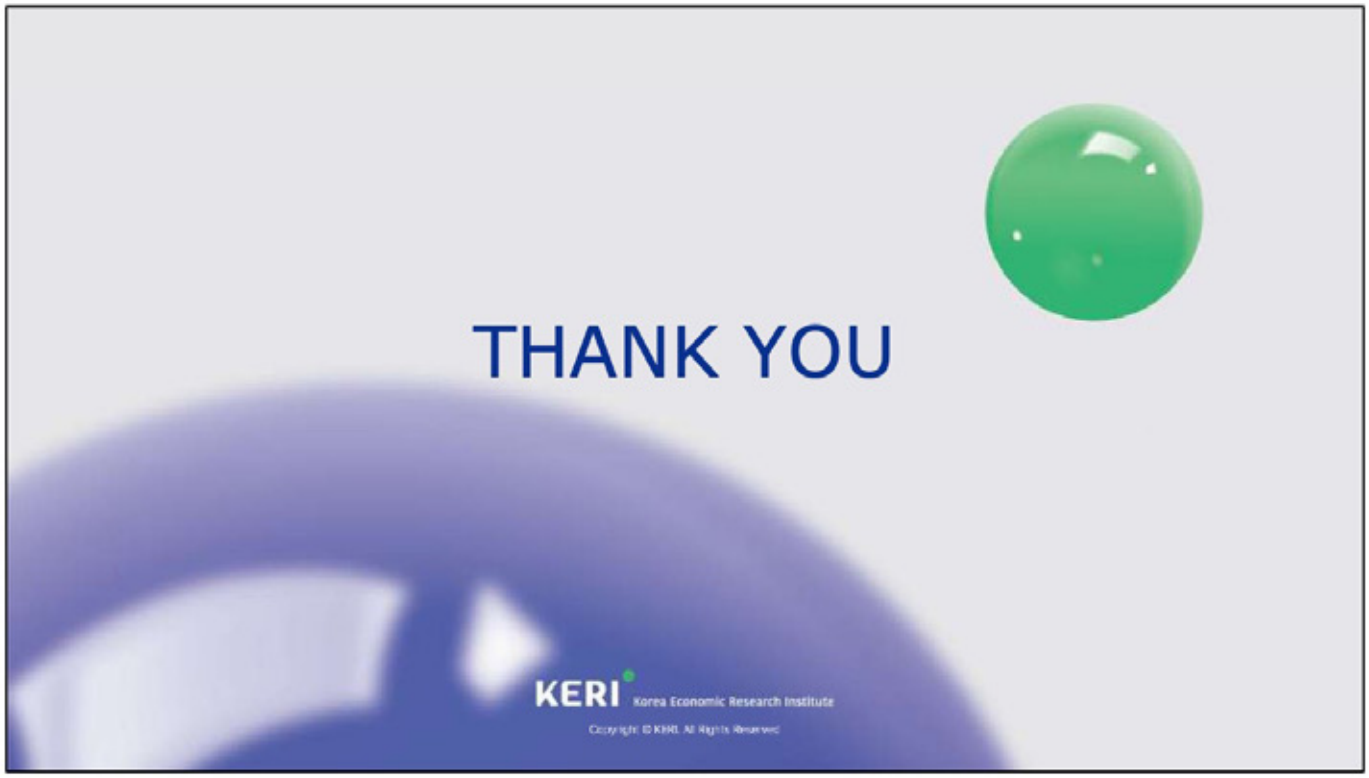
- The Dual Shock is rewriting the global industrial order
- Korea and India are uniquely positioned to transform this disruption into shared opportunity by leading in:
  - Resilience
  - Technology upgrading
  - Standards-setting
  - Sustainable supply-chain development
- Call to Action: Move from cooperation to co-design, from adaptation to agenda-setting, from partners to strategic complements.

019




The 24th Korea-India Strategic Dialogue
x
- Shipbuilding production cooperation -
KOMERI
Dr. Jungchul Bae


KOMERI
Your Global Partner in Green Marine Equipment
Korea Marine Equipment Research Institute
KOMERI 2030 LEADING
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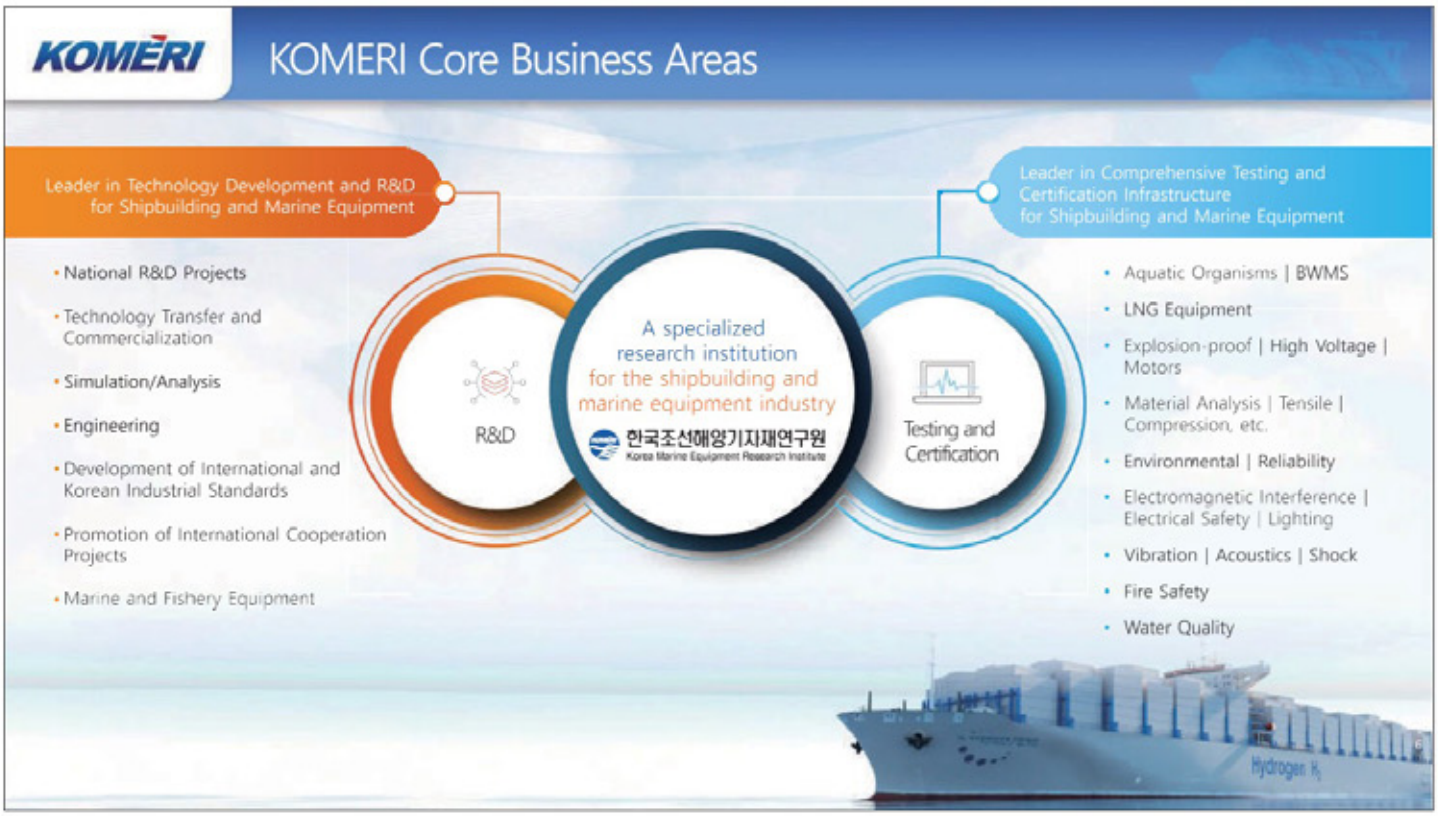
I. KOMERI Introduction
II. Global Shipbuiling & Marine Equipment Trends
III. Korea's Strength in Marine Equipment Technology
IV. KOMERI Core Business Areas (for India)
V. KOMERI – India Marine Technology & Innovation Support Center
한국조선해양기자재연구원
Korea Marine Equipment Research Institute


KOMERI
Overview
Fuel Gas Technology Center |
Marine Environment Center |
Middle Ship Technology Center |
Coastal Maritime Technology Research Center |
Jeju Center
Marine Electronics Equipment Testing & Certification Center
Marine Engineering Support Center |
Advanced Green Technology Center |
Eco-friendly Hybrid Technology Center |
Electric Propulsion Safety Technology Center |
Headquarters
Maritime Substantiation Center |
| Date of Establishment |
December 18, 2001
| Legal Basis |
Article 42 of the Industrial Technology Innovation Promotion Act (Specialized Manufacturing Technology Research Institute)
| Purpose of Establishment |
To continuously develop the shipbuilding and marine equipment industry through comprehensive technical support, including R&D and testing/certification for shipbuilding and marine equipment and their related parts and components.


KOMERI
Organization
Structure | 5 Divisions, 2 Offices, 10 Centers, 4 Business Units
Personnel Status | Total of 265 employees (49 Ph.D. holders, 133 Master's degree holders)
Co-Chairpersons
Board of Directors
Auditor
President
Office of Ethics and Auditing
Management Support Office
Senior General Manager
Alternative Fuel Division
Marine Environment Center
Fuel Gas Technology Center
Smart Equipment Division
Marine Engineering Support Center
Marine Electronics Equipment Testing & Certification Center
Human Resource Development Unit
Floating Offshore Wind Power Unit
Performance Enhancement Division
Green Equipment Center
Multipurpose Marine Demonstration Center
National Defense Technology Research Unit
Green Propulsion Division
Electric Propulsion Safety Technology Center
Eco-friendly Hybrid Technology Center
Service Facility Unit
Small and Medium Ship Innovation Division
Coastal Maritime Technology Research Center
Small and Medium Ship Technology Center


KOMERI
Our Vision
Leadership
Sustainable Growth
Expertise
KOMERI LEADING
New Technology
Reliability
Collective Intelligence
Continuous-Development
Mission
Enhancing the international competitiveness of the shipbuilding and marine equipment industry
Your Global Partner In Green Marine Equipment
Vision
Leading the Future of the Shipbuilding and Marine Industry with Technology and Trust: FIRST-MOVER
First | Based on groundbreaking core technologies and trust,
Second | As a pioneer creating new future value for the shipbuilding and marine industry,
Third | KOMERI supports the growth of the shipbuilding and marine industry through enhanced technical capabilities and customer-focused services.
5


KOMERI
KOMERI Core Business Areas
Leader in Technology Development and R&D for Shipbuilding and Marine Equipment
National R&D Projects
Technology Transfer and Commercialization
Simulation/Analysis
Engineering
Development of International and Korean Industrial Standards
Promotion of International Cooperation Projects
Marine and Fishery Equipment
R&D
A specialized research institution for the shipbuilding and marine equipment industry
한국조선해양기자재연구원
Korea Marine Equipment Research Institute
Testing and Certification
Leader in Comprehensive Testing and Certification Infrastructure for Shipbuilding and Marine Equipment
Aquatic Organisms | BWMS
LNG Equipment
Explosion-proof | High Voltage | Motors
Material Analysis | Tensile | Compression, etc.
Environmental | Reliability
Electromagnetic Interference | Electrical Safety | Lighting
Vibration | Acoustics | Shock
Fire Safety
Water Quality

KOMERI

R&D

R&D

Leader in Technology Development and R&D for Shipbuilding and Marine Equipment

- National R&D Projects
- Technology Transfer and Commercialization
- Simulation/Analysis
- Engineering
- Development of International and Korean Industrial Standards
- Promotion of International Cooperation Projects
- Marine and Fishery Equipment

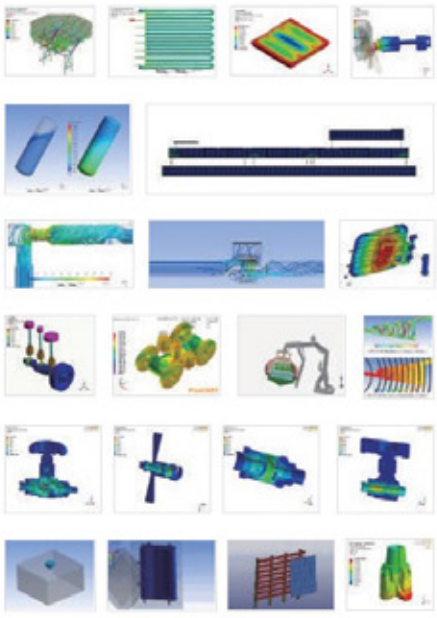
- Autonomous Ship Technology Sector
- Small Vessel Sector
- Green Equipment Sector
- Coastal Equipment Sector
- Green Gas Fuel Sector (LNG, ammonia, hydrogen, etc)
- Small and Medium Vessel Sector
- Marine Environment Sector
- Hybrid Propulsion Systems
- Explosion-proof and Reliability
- Marine and Fishery Equipment
- Electric Propulsion Systems
- Renewable Energy Systems
- Smart Yards
- TLO/Standardization
  Korea-Russia Marine Equipment Center/
  International Explosion-proof Standards

7

KOMERI

R&D | Engineering

Sector	Engineering Details
3D Modeling	• Review of interference between components • 3D modeling and visualization of equipment based on design drawings
Structural Stability	• Review of structural stability of equipment in marine environments • Design review of equipment according to operational loads • Evaluation of structural characteristics of equipment according to international standards • Evaluation of thermal deformation and thermal stress • Review of residual deformation and residual stress from welding • Engineering of equipment utilizing composite materials • Explosion-proof Performance Review • Fatigue performance evaluation • Optimal design
Thermal Characteristics	• Verification of fire resistance and thermal insulation performance of equipment • Evaluation of thermal characteristics of equipment according to international standards • Fire spread prevention engineering
Flow Characteristics	• Evaluation of flow performance for various valves and fluid machines • Analysis and evaluation of cavitation phenomena in propellers • Performance evaluation of agitator • Analysis of engine cylinder behavior
Soundproofing Performance	• Verification and design of soundproofing wall performance
Vibration Performance	• Evaluation of inherent vibration characteristics of equipment and resonance avoidance design • Analysis of frequency response characteristics of equipment
Behavioral Characteristics	• Analysis of structural behavior due to drop, collision, shock, and explosion • Time-based analysis of structural behavior • Visualization of structure operation based on procedures
System Characteristics	• Engineering of energy loss and operational characteristics based on system operation
Defense Sector	• Evaluation and design review of shock resistance performance of naval ship/submarine equipment • Evaluation and design review of vibration resistance performance of naval ship/submarine equipment • Review of performance design requirements for equipment operation
Others	• Review of mechanical stability of other ship/marine equipment and terrestrial structures



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Testing and Certification

KOLAS

Officially recognized as a testing organization under the Framework Act on National Standards and KS Q ISO/IEC 17025 by the Korean Agency for Technology and Standards for its quality system and testing capabilities

Testing and Certification

Comprehensive Testing and Certification Infrastructure for Marine Equipment

- Aquatic Organisms / BWMS
- LNG Equipment
- Explosion-proof / High Voltage / Motors
- Material Analysis / Tensile / Compression, etc.
- Environment / Reliability
- Electromagnetic Compatibility / Electrical Safety / Lighting
- Vibration / Acoustics / Shock
- Fire
- Water Quality

Electrical Testing

- Electromagnetic Emission Testing (Busan Noksan)
- Lighting Testing (Busan Noksan)
- IP Testing (Busan Noksan, Ulsan)
- Electrical safety testing (Busan Noksan, Ulsan)
- Environment & Reliability (Busan Noksan/Mieum, Ulsan)
- ESS and PCS Testing (Busan Mieum)
- Electrical and solar module testing (Busan Mieum, Jeonnam Mokpo)
- Motor and Power Conversion Device Testing (Ulsan)
- Software Testing (Ulsan)
- International Explosion Proof Certification Testing (Ulsan)
- High Power, High Voltage Testing (Ulsan)
- Battery Performance and Fire Explosion Safety Testing (Ulsan)

Thermal and Temperature Measurement

Chemical Testing

- Petroleum Products Testing (Busan Noksan)
- Air Quality Testing (Busan Noksan, Jeonbuk Gunsan)
- Water Quality Testing (Busan Mieum)

Defense Testing

- Electromagnetic compatibility (Busan Noksan)
- Environment & Reliability (Busan Mieum)
- Acoustic characteristics (Busan Mieum)
- Vibration characteristics (Busan Mieum)
- Shock Testing (Busan Mieum)

Biology Testing

- Biological environment testing (Gyeongnam Geoje)
- Large pool utilization for performance testing of marine environmental equipment and on-board items (Structures) (Busan Mieum, Gyeongnam Geoje)

Acoustic and Vibration Testing

- Acoustic Performance Testing (Busan Noksan/Mieum)
- Vibration Testing (Busan Mieum)
- Localized Noise Testing (Jeonnam Mokpo)
- Multi-Channel Vibration and Noise Testing (Jeonnam Mokpo)
- Shaft Power and Shaft Twist Measurement Testing (Jeonnam Mokpo)

Mechanics Testing

- Shock Testing (Busan Mieum)
- LNG Fuel Propulsion and Bunkering Equipment Testing (Busan Mieum)
- Performance Testing of Equipment Considering Dynamic Motion (Busan Mieum)
- Plastic Mechanics Testing (Gyeongnam Geoje)
- Metal Mechanics Testing (Gyeongnam Geoje)

Other Testing

- International Explosion-proof Service Facility (Ulsan)
- Engineering Services for Marine Equipment (Busan NoksanMieum, Gyeongnam Yangsan, Jeonbuk Gunsan)
- Maneuvering Safety Testing (Jeonnam Mokpo)
- Generator Load Testing (Jeonnam Mokpo)
- Bore & Laser Shaft Alignment Measurement Testing (Jeonnam Mokpo)
- Engine Auxiliary Module Test System Testing (Jeonbuk Gunsan)

9

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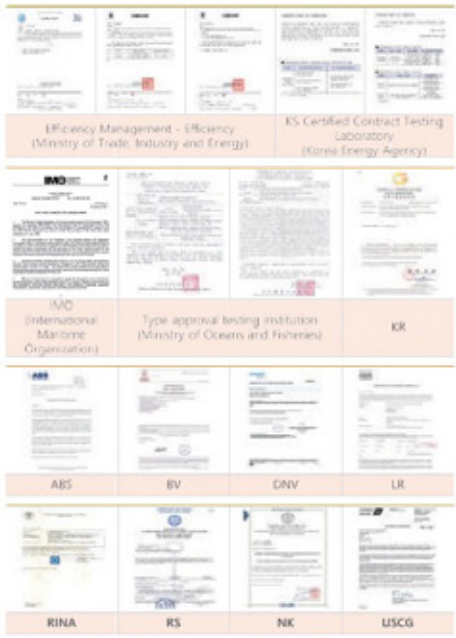
Testing and Certification | Accreditation for Testing and Certification Organizations

Accreditation Organizations		Scope (as of March 2023)
KOLAS (Internationally recognized testing institution)		• 7 facilities in Busan covering 16 fields including the shipbuilding sector with 600 testing standards • Awarded the KOLAS Best Accredited Testing Institution by the Minister of Trade, Industry and Energy (2009, 2016)
IMO (International Maritime Organization)		• Registered as a fire testing institution (FTP Code Part 1, 2, 3, 4, 5)
Ministry of Trade, Industry and Energy	Efficiency management testing institution	• Three-phase induction motors and LED lamps with built-in/external converters
	High-efficiency testing institution	• Light fixtures and LED lamps
Korea Energy Agency (KS Certified Testing Institution)		• Testing for small/medium solar power inverters and solar power junction boxes
Korea Standards Association (KS Certified Testing Institution)		• Testing for converter-type refrigerated LED lamps, external converter-type LED lamps • Recessed and fixed LED fixtures, and LED floodlight fixtures
Ministry of Oceans and Fisheries (Type Approval)		• Ship's ballast water management systems (Land-based, Shipboard, and environmental) • Designation of 50 items, including electric rudder angle indicators
		• Designated as a sound insulation performance testing institution and onboard noise measurement institution (Busan, Jeonnam)
		• Designated for fishing vessel products (remote distress signal transmitter)
KR (Korean Register of Shipping)		• KOLAS accreditation in all fields (electric, chemical, thermal and temperature measurement, acoustics, vibrations, biology, mechanics) • BWMS D-2 Commissioning • Measurement of URN (Underwater Radiated Noise) from ships
ABS (American Bureau of Shipping)		• Fire, BWMS D-2 Commissioning • Underwater Noise Measurement
BV (Bureau Veritas)		• Electric, electromagnetic, environmental, fire, acoustics, vibrations, BWMS D-2 Commissioning
DNV-GL (Det Norske Veritas - Germanischer Lloyd)		• BWMS D-2 Commissioning
LR (Lloyd's Register)		• Fire, ship ballast water treatment systems (Land based, Shipboard/USCG/Administration type approval) • BWMS D-2 Commissioning, LNG Valve Test Facility
RINA (Registro Italiano Navale)		• Shipbuilding, industrial electrical equipment, electromagnetic, environment and reliability, fire, acoustics, vibrations, tensile testing, aquatic organisms
RS(Russian Maritime Register of Shipping)		• Cryogenics, acoustics, machinery, electromagnetic compatibility, explosion proof • BWMS D-2 Commissioning
NK (Nippon Kaiji Kyokai)		• BWMS D-2 Commissioning
UL (Underwriters Laboratories)		• Electrical safety (electrical devices, lighting), motors, electromagnetic compatibility
USCG (United States Coast Guard)		• Ballast water treatment systems (Land-based, Shipboard, environmental), fire (FTP Code Part 1, 3)



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Testing and Certification | Key Testing Equipment

Fire Testing

- Type Approval Testing for Classification Societies and MED Approval
- Ministry of Oceans and Fisheries Approval Testing for Marine Equipment
- Ministry of Land, Infrastructure, and Transport Fire Resistance Structure Testing
- Ministry of Oceans and Fisheries Fire Resistance Structure Testing
- Other Fire Resistance Tests According to International Standards
- Durability Testing of Doors

Fire Reaction Testing

- Type Approval Testing for Classification Societies and MED Approval
- Ministry of Oceans and Fisheries Approval Testing for Marine Equipment
- Fire Resistance Testing for Finishing Materials in Construction by the Ministry of Land, Infrastructure, and Transport
- Fire Testing for Exterior and Interior Equipment in Railway Vehicles by the Ministry of Land, Infrastructure, and Transport
- Other combustion tests according to international standards

Explosion Testing

- Explosion-proof Performance Testing of Equipment Installed in Gas and Dust Explosion Hazard Areas
- KOLAS (Korea Laboratory Accreditation Scheme) National Certification Testing
- International Explosion-proof Certification Tests (IECEx, ATEX, North American Certification)
- IP Testing for Large Equipment (Degrees of protection provided by enclosures (IP Code))

Electrical Safety Testing

- Assessment of potential hazards arising from the use of electrical and electronic devices in marine applications
- CE and other international certification support for household appliances, electrical, electronic devices, and machinery
- Support for national certification testing (KOLAS) (excluding some tests)

Electromagnetic Interference Testing

- Measuring unwanted electromagnetic radiation emitted from electrical and electronic devices
- Evaluating resistance to unwanted electromagnetic radiation
- Protection of domestic radio environments and enhancement of the international competitiveness of domestic products

Lighting Equipment Testing

- Support for type approval testing of marine equipment for the Ministry of Oceans and Fisheries
- Testing and evaluation of the high efficiency management equipment and efficiency management systems
- Testing and evaluation of electrical safety and optical performance requirements of lighting applications in marine and general sectors
- Support for research, development, and technical assistance for special lighting applications in marine, aviation, and automotive sectors, including explosion-proof lighting

11

KOMERI

Testing and Certification | Key Testing Equipment

Environmental Reliability Testing

- Analysis and evaluation of equipment performance and impact in complex environments based on storage, transportation, and usage conditions
- Support for national certification testing (KOLAS), government-type approvals, defense materials, and R&D certification services
- Execution of environmental and reliability testing, support for reliability evaluation

Aquatic Organisms Testing

- Verification testing for type approval of ballast water management systems (USCG, IMO, government)
- Verification testing for type approval of marine pollution prevention equipment (sewage treatment plant)
- Conducting tests in the fields of water quality and marine biology
- Verification testing for in-water cleaning systems on ship

LNG Equipment Performance Testing

- Cryogenic Fluid Equipment and Package System Performance Verification Testing (LNG bunkering equipment, fuel propulsion systems, compressors, heat exchangers, etc.)

Cryogenic Valve Performance Testing

- Performance testing of LNG and cryogenic valves (support for KOLAS national certification testing)
- Dipping tests for other cryogenic components using chambers (down to -196°C)

Power and Rotating Machinery Characteristic Testing

- Testing to estimate characteristics and efficiency by evaluating electrical performance (voltage, current, etc.) and mechanical performance (torque rotation speed, etc.)
- Performance and reliability evaluation for rotating machinery under controlled environmental conditions (temperature and humidity)

Emissions Measurement Testing

- Verification of exhaust gas emission concentration for mobile and fixed sources
- Analysis of exhaust gas measurements under onshore and offshore environmental conditions
- Exhaust gas measurement testing in compliance with IMO standards
- Support for national certification testing (KOLAS)
- Other gas measurement testing according to international standards

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KOMERI

Testing and Certification | Key Testing Equipment

High voltage testing

- Reliability evaluation through insulation diagnosis and lifespan assessment testing of high-voltage equipment, as well as aging tests and reliability evaluation through the simulation of marine environments for high-voltage materials

Performance and reliability testing

- Product characteristics analysis and performance testing evaluation
- Evaluation of the impact and performance testing of wired and wireless network environments on ships
- Visual inspections and performance testing for type approvals of various classification societies and ship equipment

Shock testing

- Shock testing/interpretation evaluation of onboard equipment for naval vessels
- Shock load testing considering the installation environments of army tanks and other equipment
- Evaluation of the shock resistance suitability of shock insulation devices (such as elastic mounts)

Testing of large-capacity energy storage devices and power conversion devices

- Large capacity energy storage devices applied to eco-friendly ships
- Characteristic testing of fuel cells and power conversion devices
- Measurement of electrical performance (voltage, current frequency, efficiency, etc.) and stability (environmental resistance, performance, system interconnection), along with reliability evaluation

Testing of petroleum products

- Testing of ship fuel (bunker fuel, diesel) and other petroleum products according to ISO 8217 ship fuel standards
- Fuel analysis testing, including fuel composition, residual carbon, and sulfur content tests
- Tests for flow point, lubricity, operation, and composition analysis

Full-scale fire testing

- Recognition testing for building finishing materials by the Ministry of Land, Infrastructure and Transport
- Physical model testing of composite finishing materials for exterior walls according to the Ministry of Land, Infrastructure and Transport's announcements
- Fire testing of external finishing systems for buildings (KOLAS)
- Real-scale fire testing of marine and terrestrial finishing materials (R&D)

13

KOMERI

Testing and Certification | Key Testing Equipment

Mechanics (material properties) testing

- Verification testing of material property values (tensile, compression, bending) (0–1200kN)
- Applying fatigue to materials to assess their resistance and determine fatigue recovery deformation characteristics (0–500 kN)

Software testing

- Software static and dynamic testing
- Software functionality and performance testing
- Functional safety testing for SIL certification

Battery & PCS Reliability Testing

- Battery abuse testing
- Battery performance testing
- Battery functionality testing
- Battery safety testing

Vibration testing

- Verification of dynamic characteristics and durability of test samples according to their intended use and design objectives
- Vibration and shock testing of onboard and land-based equipment
- Elimination of design and structural defects that cause failures when subjected to vibration through simulated experiments in the laboratory
- Assessment of material integrity and welding compatibility under extreme environments, including cryogenic conditions

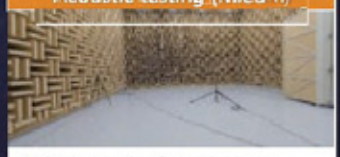
Engine Equipment Testing

- Performance testing of engine auxiliary devices using a 1.5MW DF engine (capable of performance testing by fuel type)
- Performance testing of engines and various auxiliary devices utilizing a free-bed/fuel supply system

Acoustic testing (Noksan)

- Sound absorption testing of materials (such as sound absorbing materials, curtains, etc.)
- Sound insulation testing for ship cabins, building materials, etc.
- Floor impact sound (inter-floor noise) testing of floor cushioning materials
- Performance testing of standard impact sources for floor impact noise (lightweight/heavyweight)

Acoustic testing (Micum)



- Radiated noise testing of onboard equipment (including naval vessels)
- Measurement of sound power levels for air conditioning systems (fans, etc.)
- Acoustic performance testing of silencers for ship/plant HVAC systems
- Radiated noise testing for environmentally labeled electronic products
- Indoor/outdoor noise testing for railway vehicles

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14

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Global Shipbuilding Market Overview

Market Size & Growth Outlook

- The global shipbuilding market was valued at USD 161.94 billion in 2024.
- It is projected to grow at a CAGR of 3.38% from 2025 to 2032.
- The market is expected to reach USD 211.28 billion by 2032.

- ✓ Expansion of international trade
- ✓ Rising demand for large and high-efficiency vessels
- ✓ Rapid adoption of eco-friendly and high-performance ship technologies

Regional Market Insights

Asia-Pacific (APAC) — Global Dominant Region

- The world's largest shipbuilding cluster, led by **China, South Korea, and Japan**
- Benefits from strong **government support**, and a **highly integrated industrial ecosystem**
- **Technological innovation** combined with **cost competitiveness** continues to fuel APAC's global leadership

Europe (EU)

- Advanced engineering capabilities and strong compliance with strict environmental regulations
- Global competitiveness in **cruise ships** and **specialized vessels** (e.g., research vessels, offshore platforms)
- Differentiation through **eco-friendly ship technologies** and **low-carbon solutions**
- A regulation-driven market that fosters **investment in innovative ship technologies**

KOMERI

KOMERI core business areas for India

MARINE EQUIPMENT TECHNOLOGY DEVELOPMENT

Marine Technology Support & Collaboration

- Joint R&D with India shipyards and equipment manufacturers
- Technology localization support for Korean and India firms
- Design optimization, simulation and engineering analysis
- Support for India market regulatory compliance
- Development and cooperation on international marine equipment standards

COMPREHENSIVISE TESTING & CERTIFICATION

Local Comprehensive Testing & Certification Services

- On-site testing support for BWMS, LNG equipment and clean energy systems
- Performance evaluation of pumps, valves, motors, rotating machinery
- Durability & environmental testing support for India operations
- EMC, electrical safety and power quality assessment services
- Pre-certification testing for India shipyards and marine equipment supplier

KOMERI R&D Project

Establishment of a Full-Scale Demonstration Platform for Medium-Sized Hybrid Ship Propulsion Systems

- ✓ The **IMO** targets *Net Zero emissions before 2050* in the international shipping sector.
- ✓ Strengthened global regulations are accelerating the transition toward **hybrid–electric propulsion** and **low-carbon /zero-carbon fuels**.
- ✓ There is a growing need for a dedicated **testing and evaluation infrastructure** to support eco-friendly technology development by Korean shipbuilding and marine equipment companies.

Establishment of a Full-Scale Hybrid Propulsion System Test Center

- Construction of **testbeds** to support engineering verification
- Evaluation environment for **power generation**, **electric propulsion**, and **power conversion equip.**

Installation of Full-Scale Hybrid Powertrain Demonstration Facilities

- **6.0/1.5 MW-class** power generation, electric propulsion motors, SGM performance
- Integrated performance evaluation of **hybrid propulsion systems**

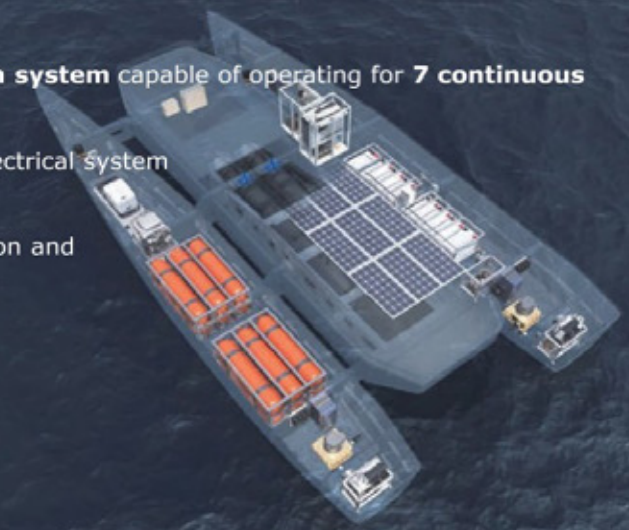
Establishment of a Support System for Marine Equipment Companies

- Providing **advanced technical support** for component performance enhancement
- Forming and operating an **industry expert network**

KOMERI R&D Project

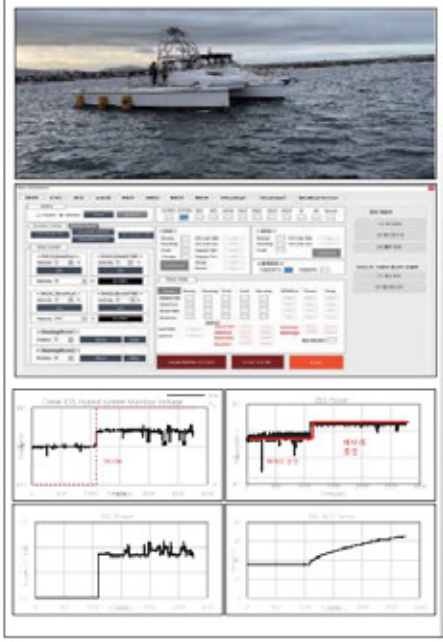
Development of a Fuel-Cell-Based Hybrid Electric Propulsion System

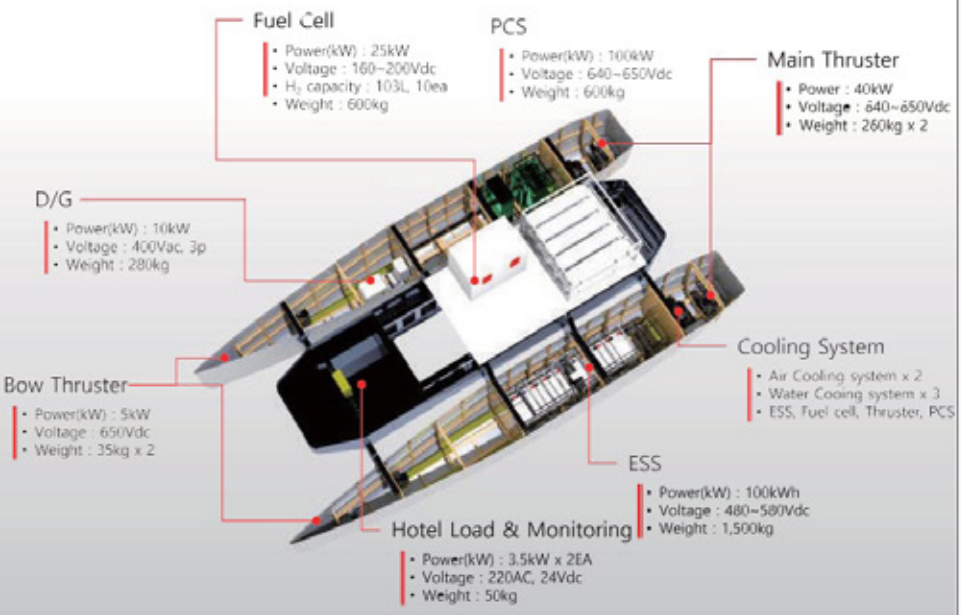
- ✓ Develop a **fuel-cell-based hybrid electric propulsion system** capable of operating for **7 continuous days** at a **maximum speed of 10 knots**.
  - Develop a hybrid electric propulsion and integrated electrical system based on fuel cells
  - Establish a fault-diagnosis system for electric propulsion and integrated power systems
- ✓ Project Period : June 1, 2020 – May 31, 2027



KOMERI R&D Project

Development of a Fuel-Cell-Based Hybrid Electric Propulsion System

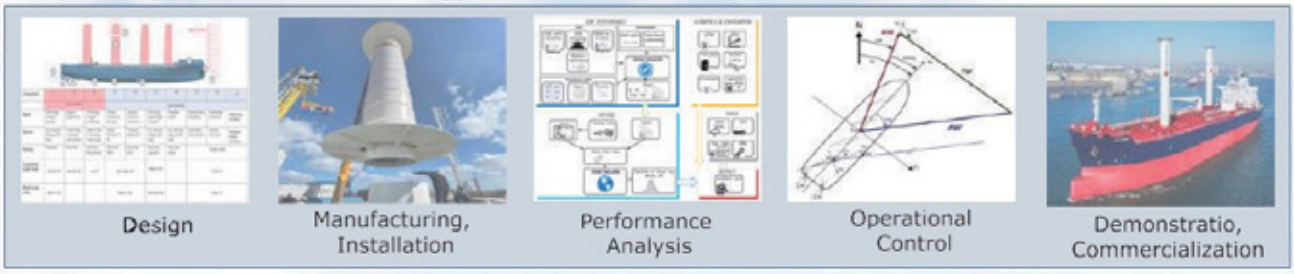


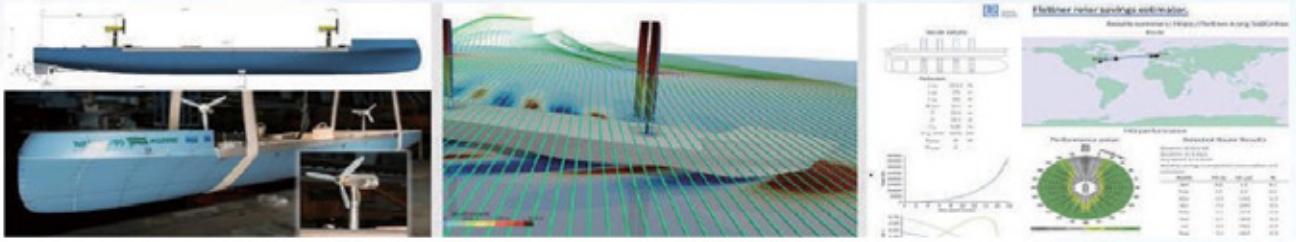


KOMERI R&D Project

Development of Ship Performance Evaluation and Control Technologies Applying Wind-Assisted Propulsion Systems

✓ **Project Objectives Core Technology: Wind-Assisted Propulsion for Ships**





KOMERI
Korea-India Marine Technology & Innovation Support Center
KOMERI
Mission
• Enhance India-Korea technological collaboration in marine equipment and shipbuilding
• Accelerate India market access through advanced testing, certification and engineering support
Expected Impact
• High reliability marine equipment supply chain
• Reducing certification times
• Joint industry collaboration
• India-Korea joint R&D programs
• Expansion technology development
22

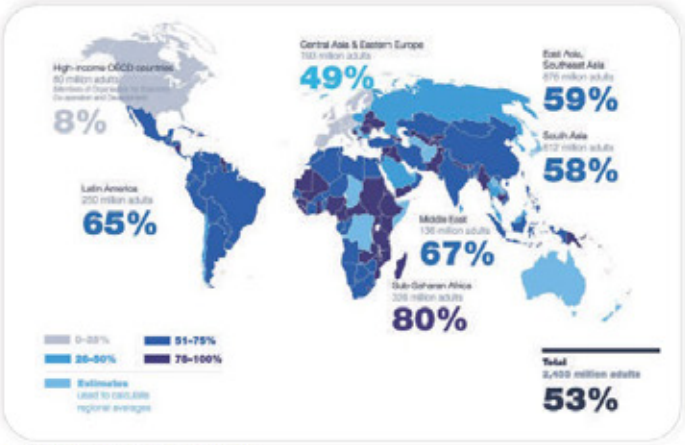

KOMERI 2030
LEADING
Leading the future of the shipbuilding and marine industry as a first mover, based on cutting-edge technology and customer trust
Korea Marine Equipment Research Institute
Thank you.
한국조선해양기자재연구원
Korea Marine Equipment Research Institute

Contents

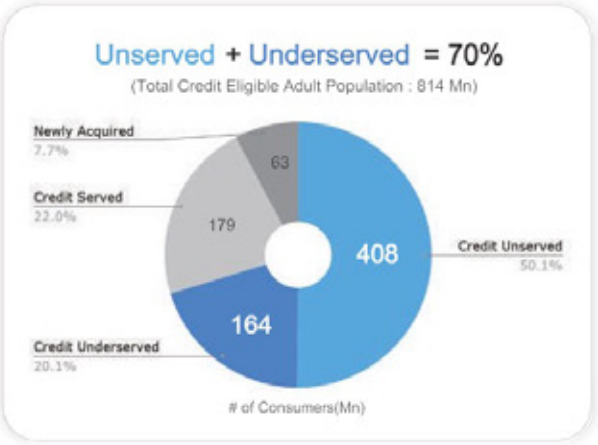
Financial Problem in India

Billions of people worldwide still remain invisible to the formal financial system.

Percentage of total adult population who do not use formal or semiformal financial services



Breakdown of India's Adult Population



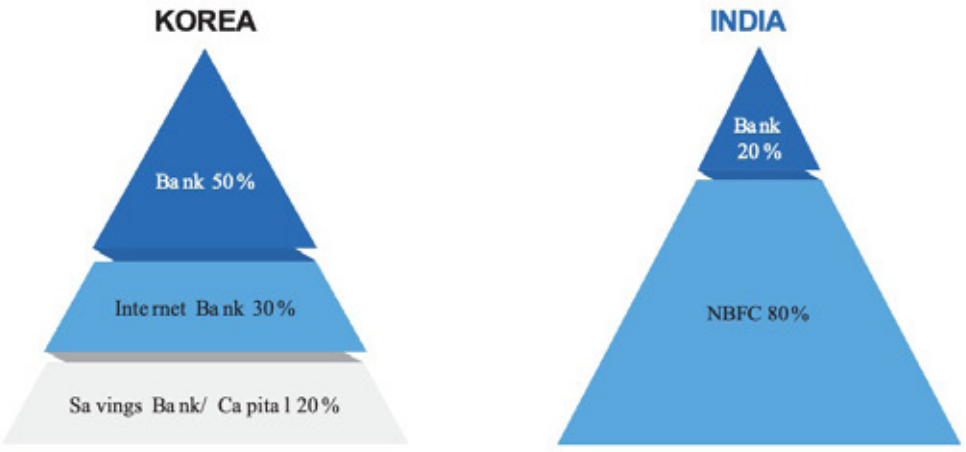
Counting the world's unbanked, McKinsey
More than 160 Million Indians are Credit Underserved, TransUnion CIBIL

2

India's Fintech Ecosystem: NBFCs

In India, NBFCs (Non-Banking Financial Companies) are responsible for 80% of financial inclusion. AFINIT's AI platform serves as an essential engine for these key partners.

Difference in Credit Accessibility between Korea and India



NBFC: Non-banking Financial Company

3

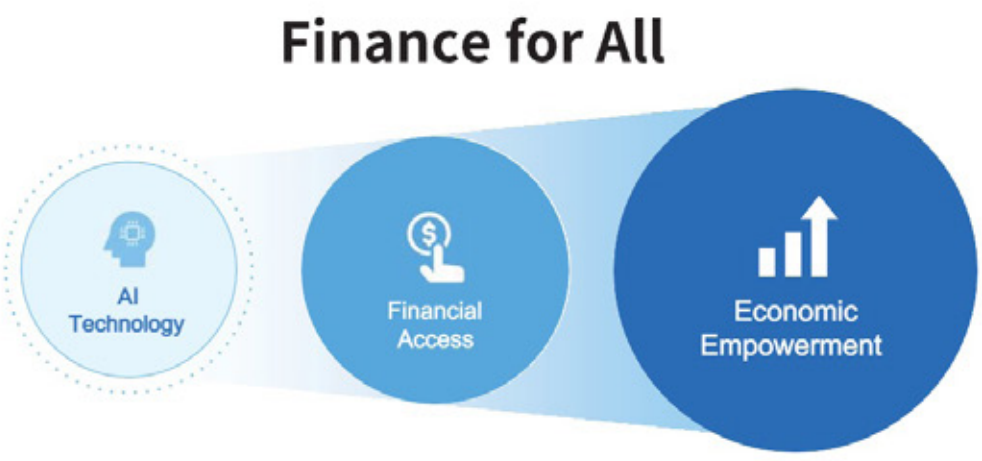
About NBFCs

- Key players in financial inclusion for low-income, thin-file and rural customers
- Often specialised (microfinance, consumer / vehicle loans, SME finance, etc.)
- Provide last-mile reach where banks have limited presence
- Increasingly partner with fintechs for digital onboarding and AI-driven credit scoring

4

How AI Is Solving India's Financial Problem

NBFCs, including AFINIT, are leveraging AI technology to break down barriers to financial access and empower billions toward economic independence.



5

0 to 1 Impact of AI

In emerging markets, AI is not merely an 'improvement'; it is the essential tool creating financial lives from zero to one.

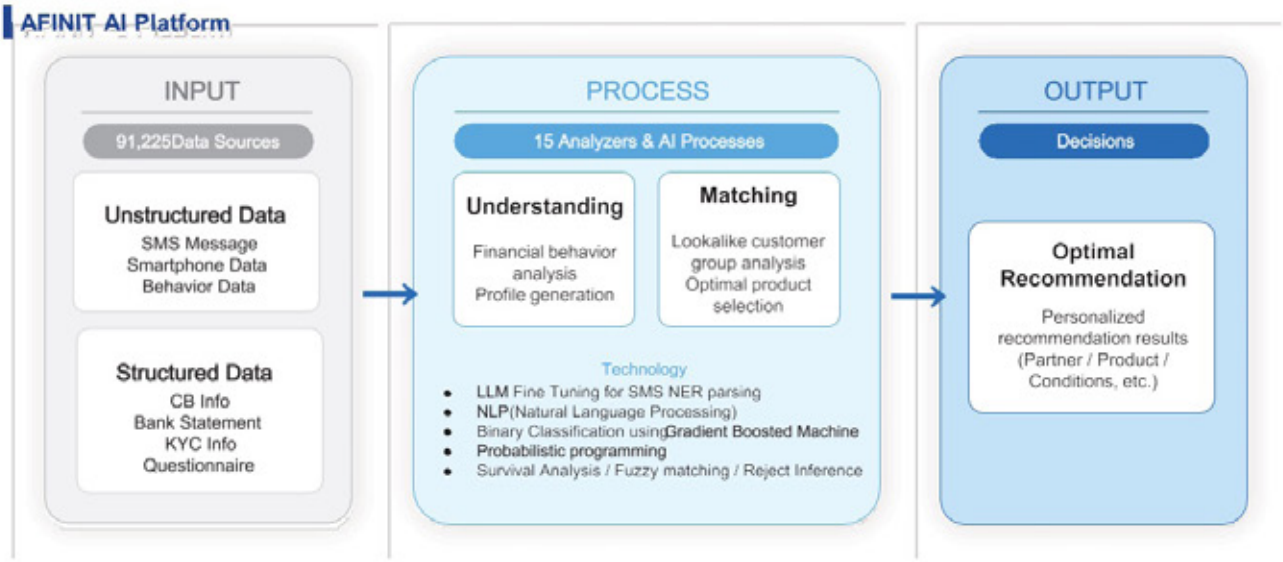
Comparison of AI's Impact in Developed vs. Emerging Markets

6

AI Platform of AFINIT

At the heart of AFINIT is a sophisticated AI platform engine that analyzes vast data to compare and recommend customers and financial partners.

AFINIT AI Platform



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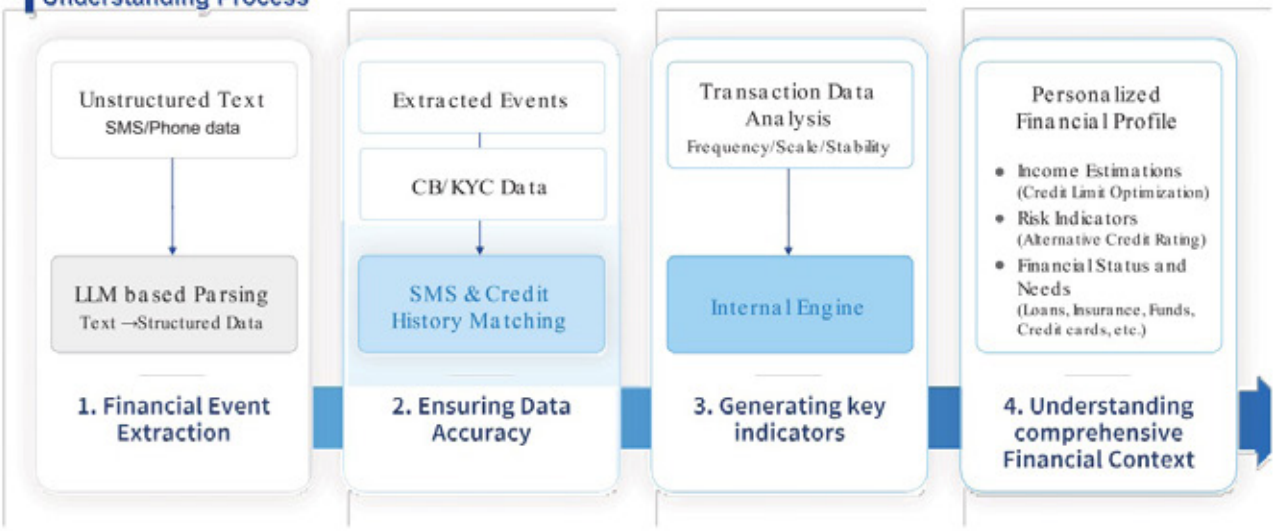
How we "Understand" the User

Using LLMs and proprietary engines, it accurately grasps the 'financial context' of even data-scarce customers.

Understanding Process

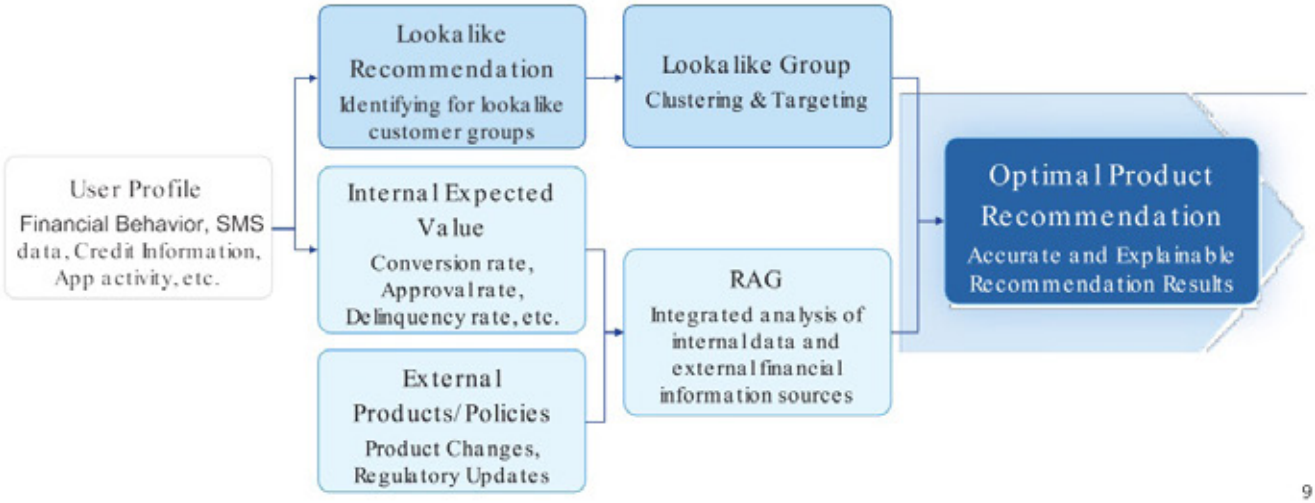


8

How we "Match" the User

RAG (Retrieval-Augmented Generation) and Lookalike models are the core matching technologies that identify the best financial partners based on these customer profiles.

Matching Process



9

Impact of Financial AI on Emerging Markets

The middle class in emerging nations often falls into the blind spots of traditional finance, making the impact of AI technology most profound.

Examples of Financial AI Adoption in Emerging Markets

1 Personalized financial assistant

Characteristics of the Middle Class in Emerging Markets

- Lack of financia literacyl
- Aversion to complex products

AI Solution

- Conversational AI financial assistant
- Automatic expense analysis and budget management

AI acts as a personalized financial guide through a familiar interface.

2 Customized micro-insurance

Characteristics of the Middle Class in Emerging Markets

- Highly vulnerable to unexpected shocks (e.g., illness, accidents)

AI Solution

- Dynamic risk assessment and pricing
- AI-based insurance claims and payout systems

AI can create an affordable and accessible 'micro-insurance' market.

3 Micro-investment and asset formation

Characteristics of the Middle Class in Emerging Markets

- Strong desire for asset formation
- low income and lack of investment experience

AI Solution

- Robo-advisors for micro-investment recommendations
- AI-driven gamified savings services

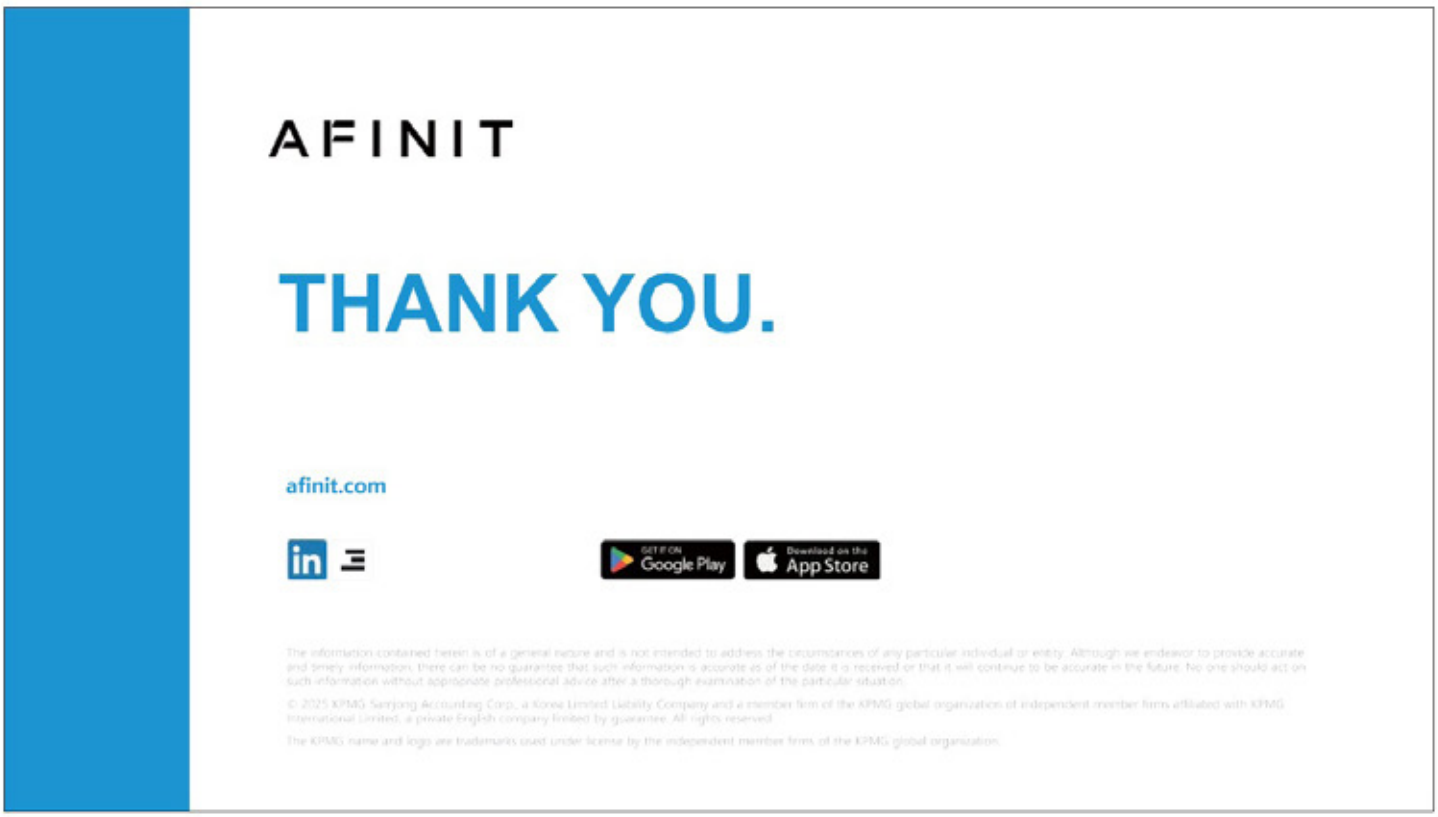
AI can lower investment barriers and make savings a habit.

10

Discussion Points

- Korea–India joint model for digital financial inclusion
- Cross-border pilot projects & regulatory sandboxes for SME / startup finance
- Support mechanisms for fintech SMEs & startups (funds, accelerators, soft-landing)

11


AFINIT
THANK YOU.
afinit.com
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Download on the App Store
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Greater potential for cooperation in financial markets with NPS

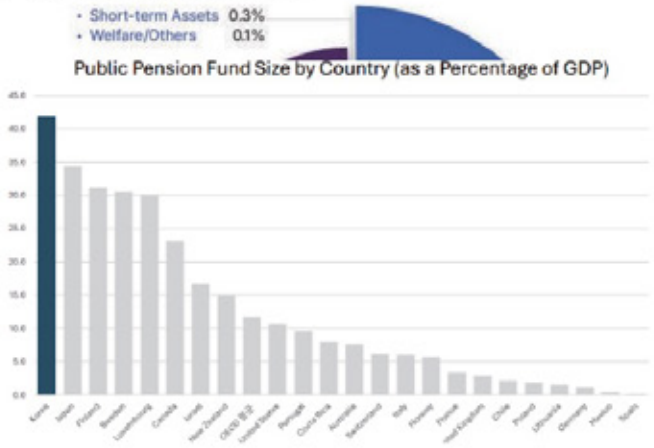
ChongHyun Won
(Korea National Pension Fund Management Committee)

Brief Introduce of National Pension System of Korea

- **Public pension system** operated by the government to secure retirement income
- **Established:** 1988
- **Operator:** National Pension Service (NPS)
- **Funding:** Contributions from individuals C employers + investment returns
- **Fund Size (Sep 2025): KRW 1,361.2 trillion**
- **Contributions G Benefits**
- **Contribution Rate:** 9% of income (Employee 4.5% + Employer 4.5%)
- **Pension Benefits:** 40% of average total income in Lifetime (payments starting at **age 63-65)**
- **Participants (2025)**
  - **Contributors: 21.6G million** (as of Aug 2025)
  - **Beneficiaries: 7.48 million**
- **National Pension Fund Management Office established in 1GGG**
- Professional, large-scale global investment operation

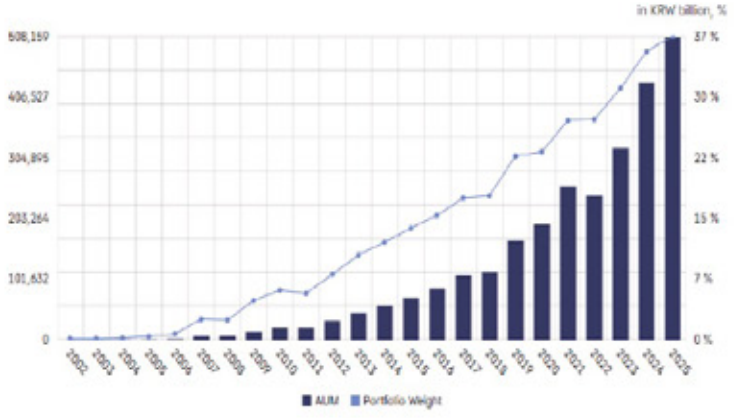
NPS Fund AUM and Portfolio

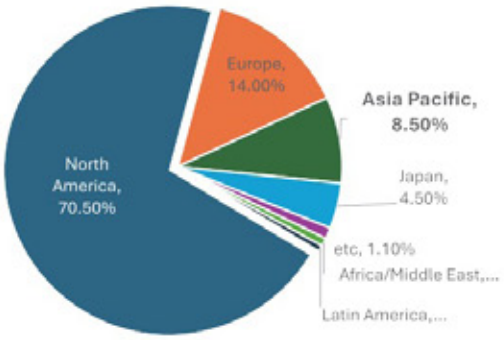
- As the world's third-largest pension fund by total assets, the NPF amounted to KRW 1,361.2 trillion.



NPS Global Equity AUM and Regional portfolio

Global Equity: We began investing in overseas equity in 2002, just one year after we initiated investment in global assets. As of Sep 30, 2025, the global equity investment was valued at KRW 508.2 trillion, representing 37.3% of the Fund's portfolio.



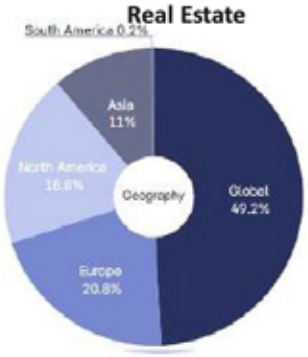


NPS Alternatives AUM and Regional portfolio

Alternative assets refer to asset classes considered distinct from traditional assets such as equity and fixed income. Alternatives provide different risk-return profiles from traditional assets and contribute to generate stable long-term returns. As of Sep 30, 2025, the alternative investment was valued at KRW 217.0 trillion, representing 15.9% of the Fund's portfolio.

Private Equity

Real Estate



India's Strategic Importance in Global Investment of Korea

- During the Moon administration (2017-2022), the New Southern Policy (NSP) identified Indi a as one of its two core pillars—alongside ASEAN—across both diplomatic and economic d imensions ("ASEAN + India").
- India was officially designated a Core Partner State, together with ASEAN, underscoring its s trategic importance in Korea's external economic and foreign policy framework.
- This strategic significance has become even more evident in recent years, as India's global standing has been increasingly highlighted in APEC and G20 discussions.
- From the initial design stage of the policy, India was clearly positioned as a primary regional partner, not as a peripheral or secondary target.
- Given India's massive domestic market of 1.4 billion people, its rapidly expanding manufact uring base and human capital, and the strong and growing demand for Korean technology,
- India should be re-recognized as a strategic alternative economic partner to China, alongsi de Russia and Central Asia under the New Northern Policy, within the economic pillar of the NSP.

Shared Strategic Goals for Korea-India Co-Investment

- With a population of 1.4 billion, India has already become the world's se cond-largest generator of data.
- If India's vast pool of AI and IT talent is combined with Korea's advanced semiconductor-based AI computing capabilities and high-efficiency dat a center technologies,
- Korea and India could emerge as a "third force" in the global digital order — alongside the United States and China.

- However, the critical "financial glue" needed to make this vision operatio nal in practice remains underdeveloped in the financial sector.

Challenges for Korea-India Investment

- Improve tax and investment treaties, particularly the Double Taxation Av oidance Agreement (DTAA) and the General Anti-Avoidance Rules (GAA R).
- Standardize financial regulatory frameworks between the Reserve Bank of India (RBI) and Korean financial authorities, and introduce a fast-trac k approval system for Korean financial institutions.
- Establish the legal and institutional foundation for joint investment vehi cles, such as co-investment funds or fund-of-funds structures.
- Strengthen mechanisms to manage foreign exchange risks, especially r upee volatility.
- Enhance transparency in project finance, as well as judicial and regulat ory infrastructure, to improve investor confidence.

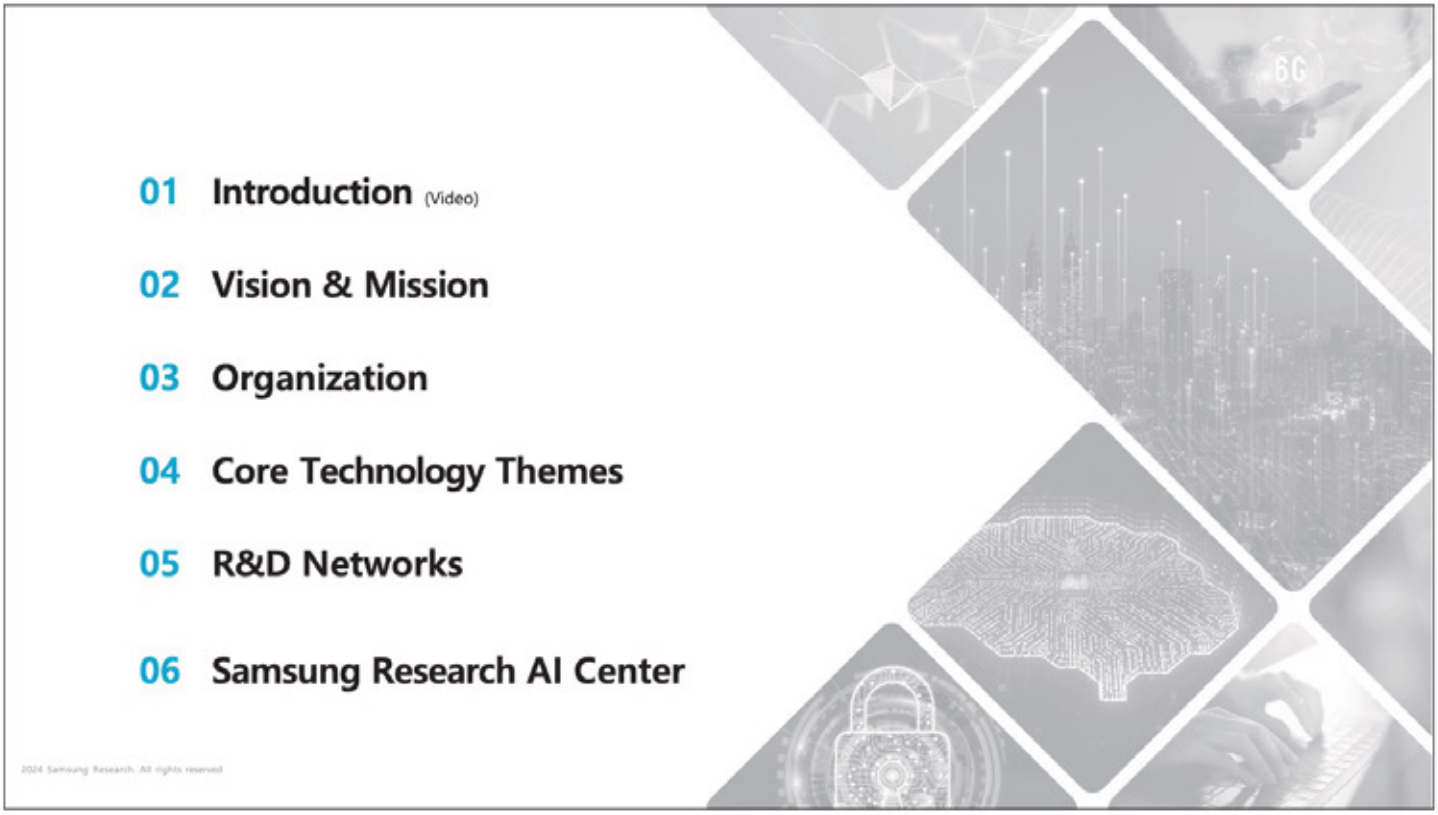
Why NPS Is Heavily Weighted Toward Advanced Markets

1. World-Class Legal, Institutional C Investor Protection Framework
2. Unmatched Market Size C Liquidity
3. Geopolitical C Security-Based Asset Safety
4. The World's Most Consistently High Long-Term Returns

- Asia's lower portfolio weight is not due to a lack of growth potential, but because advanced markets—especially the U.S.—uniquely combine legal certainty, unmatched liquidity, geopolitical safety, and superior long-term returns.

- India has the latent strength to emerge as a developed market, and strategic investment cooperation with Korea will serve as a proactive and powerful catalyst in that process.


Samsung Research
Introduction
December 2025
6G


01 Introduction (Video)
02 Vision & Mission
03 Organization
04 Core Technology Themes
05 R&D Networks
06 Samsung Research AI Center
6G

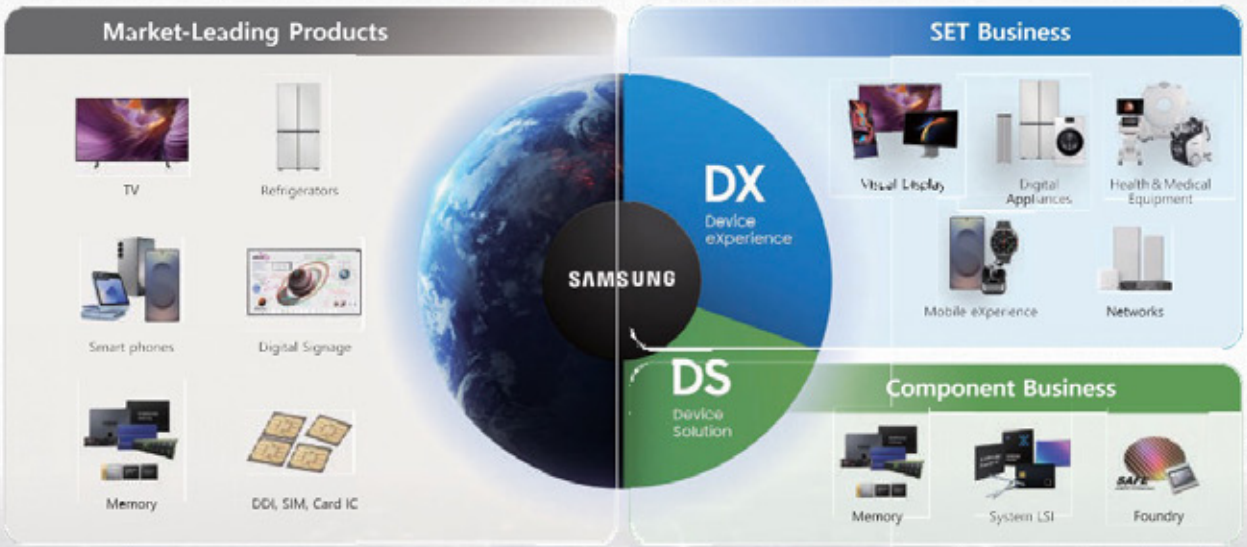
Introduction

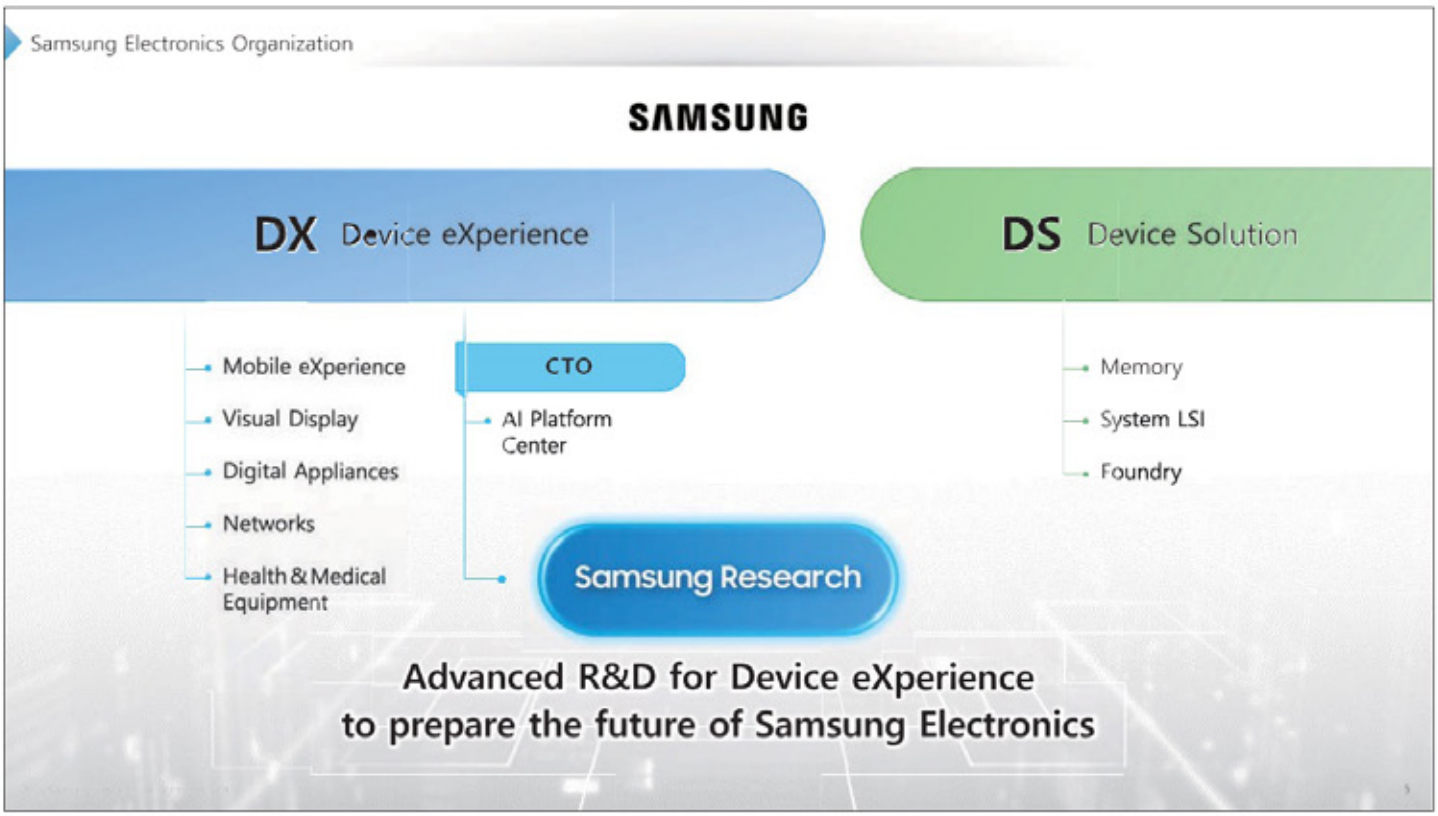
SAMSUNG
presents

Samsung Electronics Overview

Contributing to Human Society

by Creating the Best Products & Services with Talents and Technology




Samsung Electronics Organization
SAMSUNG
DX Device eXperience
DS Device Solution
Mobile eXperience
Visual Display
Digital Appliances
Networks
Health & Medical Equipment
CTO
AI Platform Center
Samsung Research
Memory
System LSI
Foundry
Advanced R&D for Device eXperience
to prepare the future of Samsung Electronics


Samsung Research Vision & Mission
Vision
Shape the Future with Innovation and Intelligence
to Create Valuable Future through Innovation and Intelligence
Mission
Securing New Growth Engine
Identifying new business opportunities
Increasing Competitive Edge
Creating new value for our business
Innovating Advanced Core Technologies
Securing world leading AI competencies & technical leadership in core research areas

R&D Networks

Strengthening research capabilities through R&D networks in 14 countries

Introduction of AI Center

AIC-Seoul, Korea

- Foundation Models and Agentic AI
- Device AI, AI for Productivity

AIC-North America

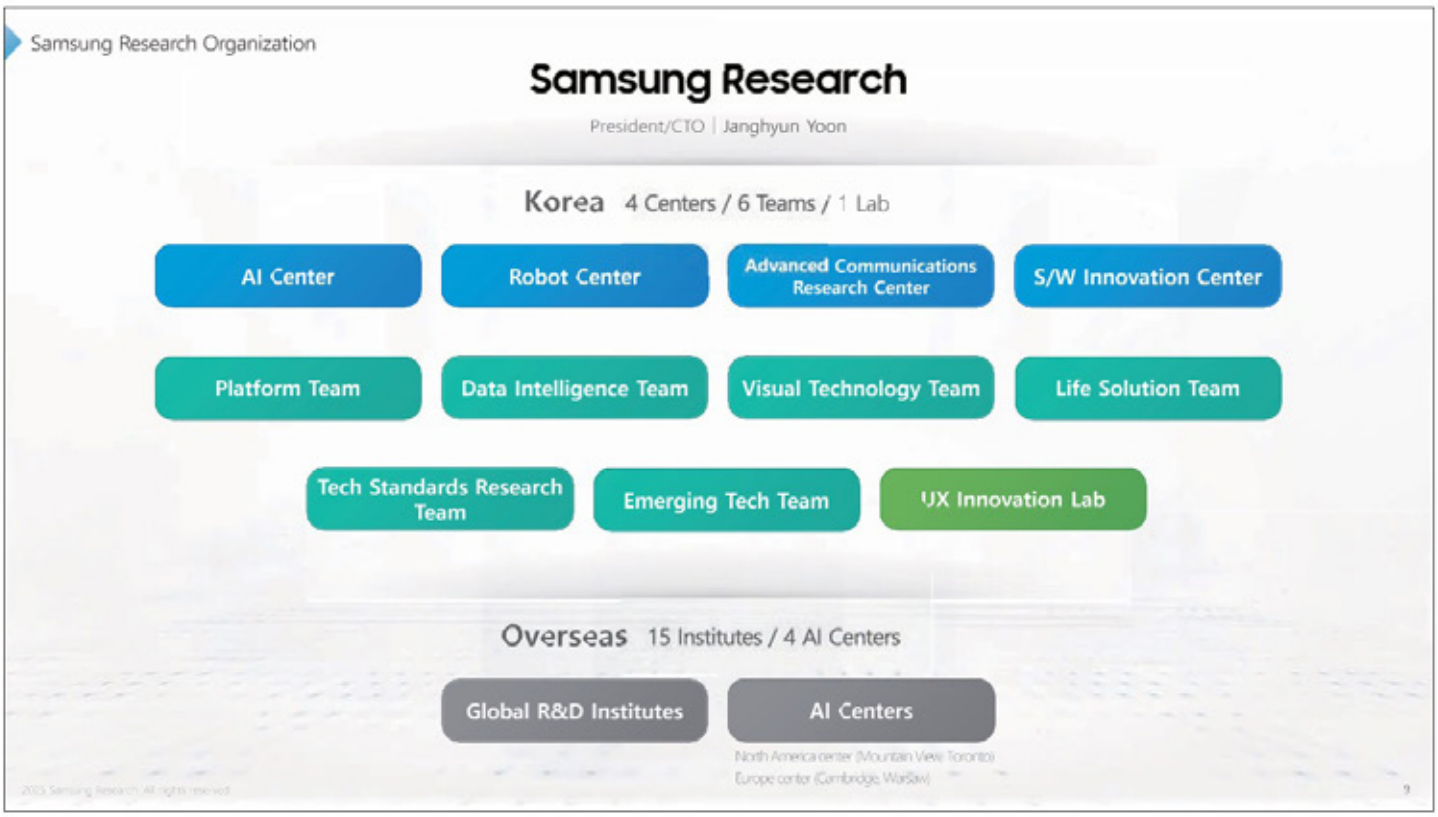
Silicon Valley, U.S.
- AI Agent
- Gallery Search

Toronto, Canada
- Camera Image Enhancements
- E2E Neural ISP, Digital Zoom

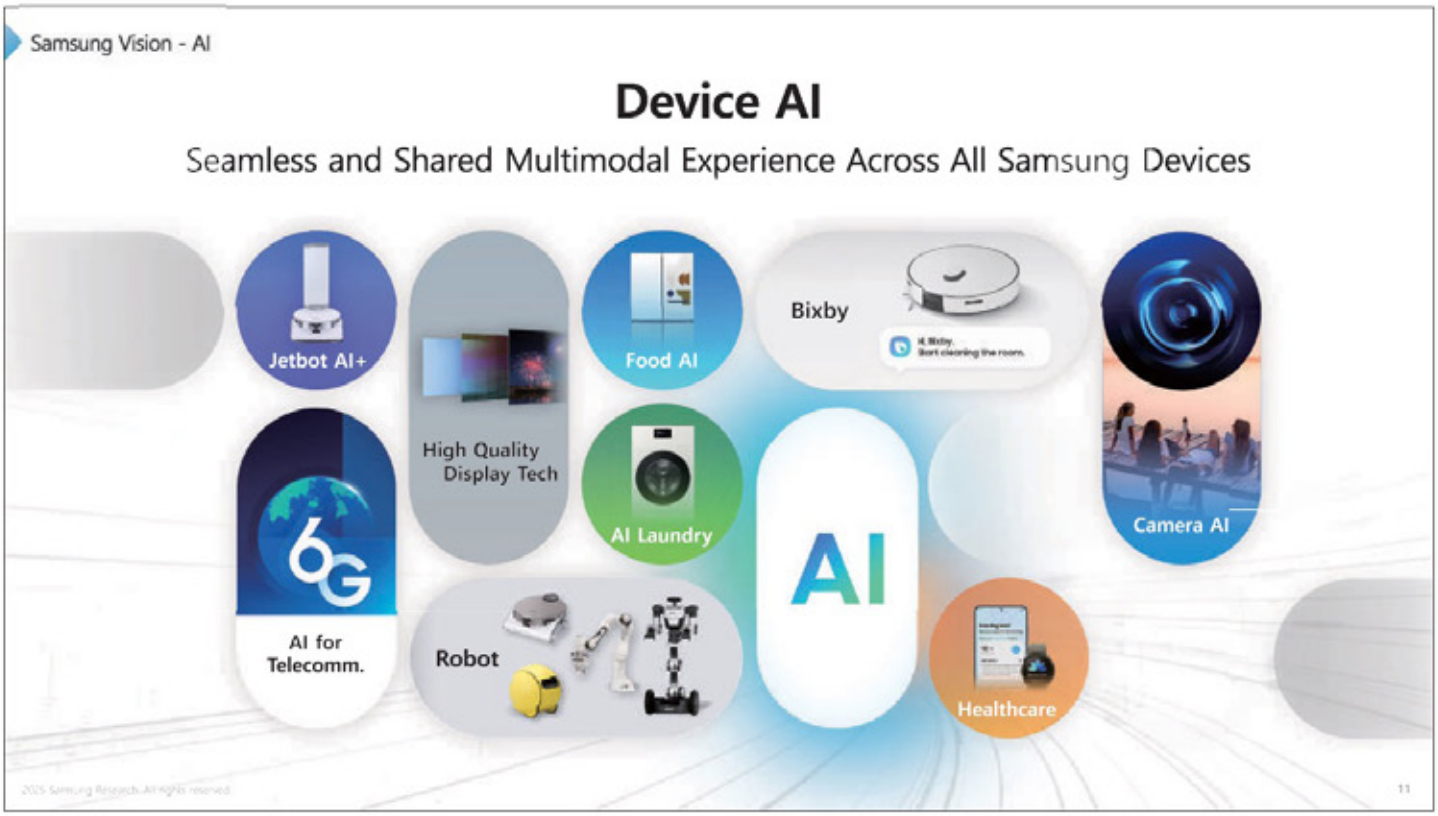
AIC-Europe

Cambridge, U.K
- On-Device AI
- Personalization

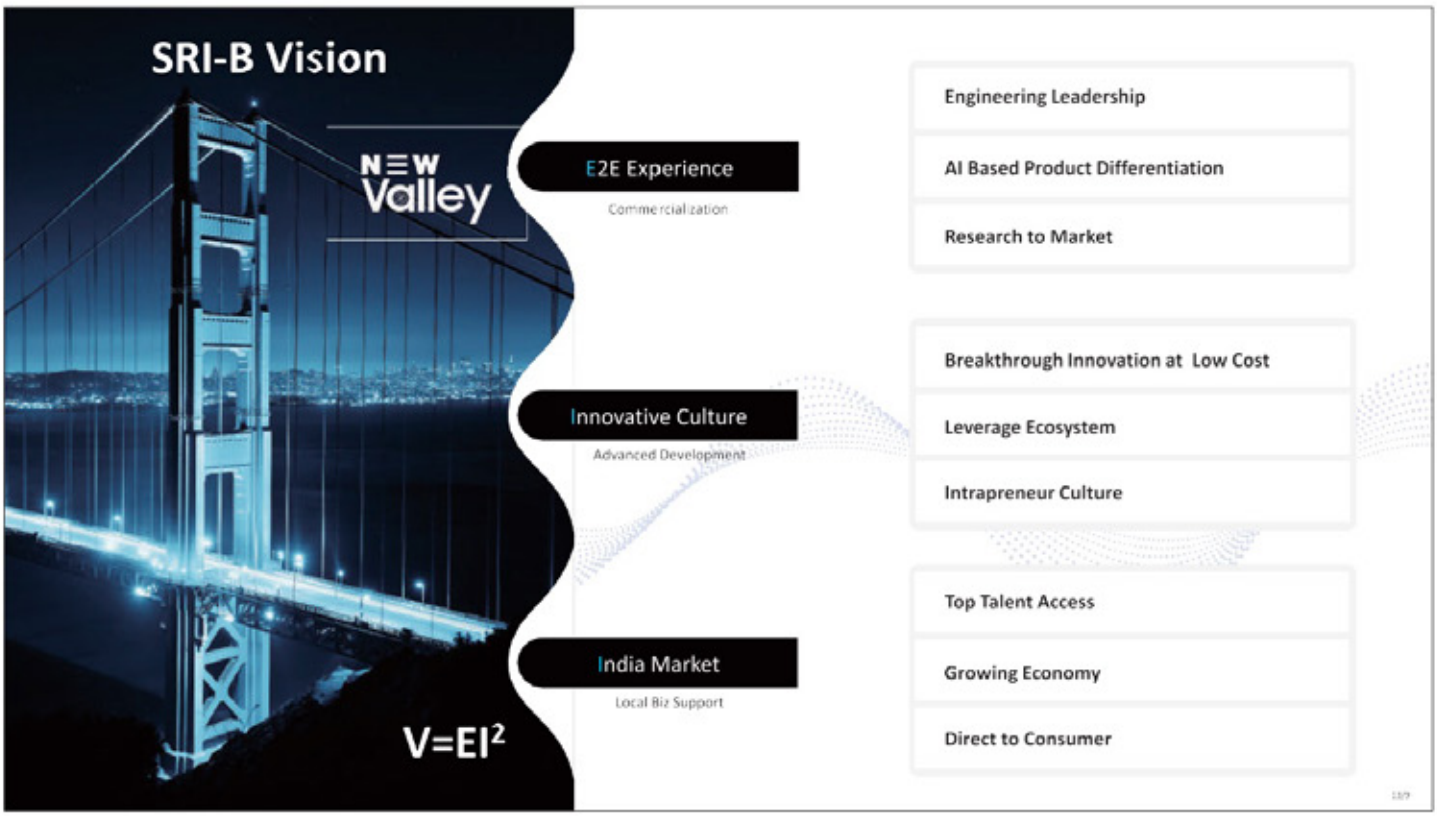
Warsaw, Poland
- Data Intelligence
- AI Safety

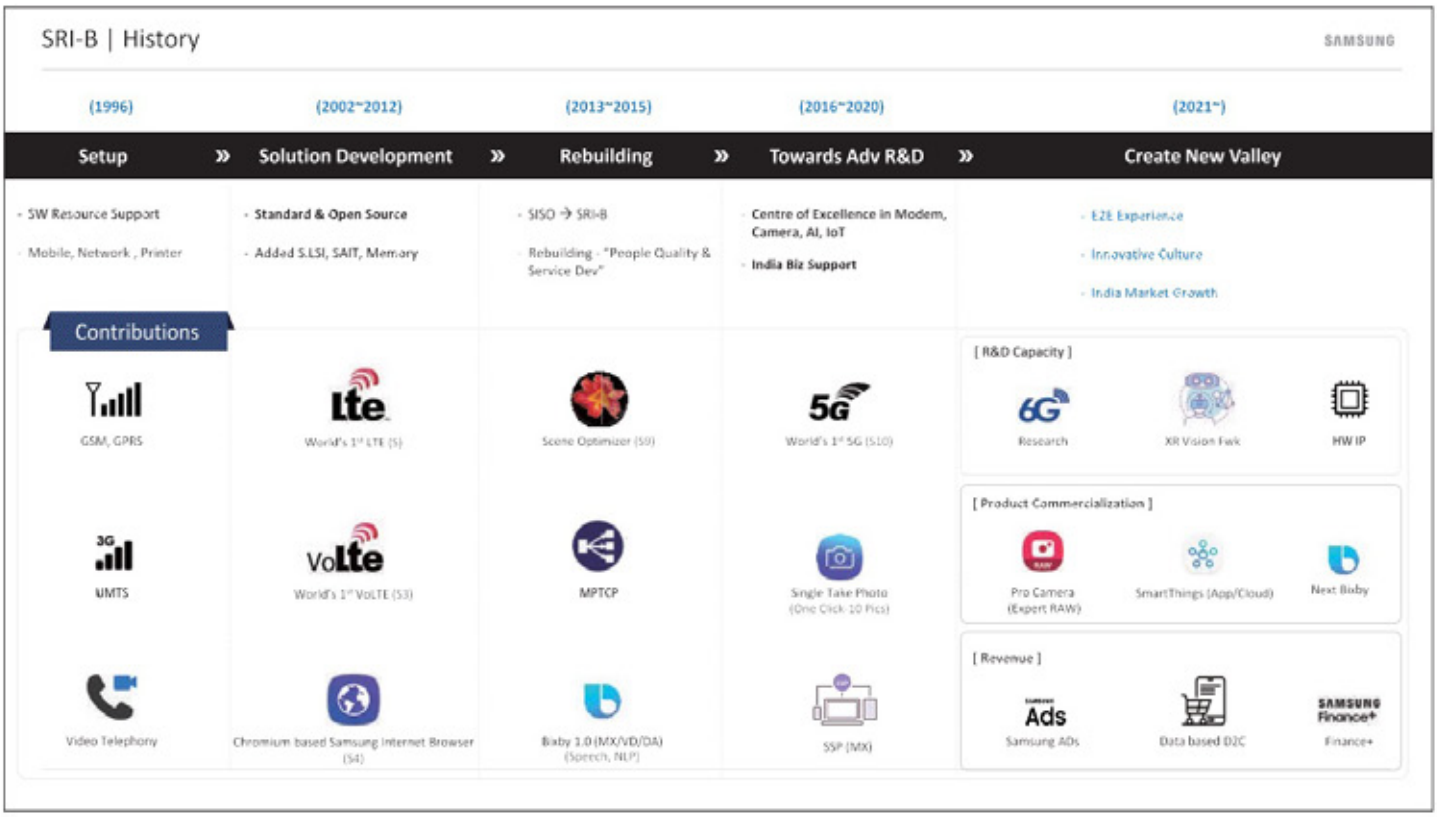

Samsung Research Organization
Samsung Research
President/CTO | Janghyun Yoon
Korea 4 Centers / 6 Teams / 1 Lab
AI Center
Robot Center
Advanced Communications Research Center
S/W Innovation Center
Platform Team
Data Intelligence Team
Visual Technology Team
Life Solution Team
Tech Standards Research Team
Emerging Tech Team
UX Innovation Lab
Overseas 15 Institutes / 4 AI Centers
Global R&D Institutes
AI Centers
North America center (Mountain View, Toronto)
Europe center (Cambridge, Warsaw)


Core Technology Themes Overview
Leading the Next Cutting-edge Technologies to Offer New Experience with Value
Research Areas
Intelligence
Artificial Intelligence
Data Intelligence
Device Innovation
Robotics
Next Gen. Digital Appliances
Communications & Media
Next Gen. Communications
Next Gen. Display & Media
Platform
Tizen
Software Engineering


Samsung Vision - AI
Device AI
Seamless and Shared Multimodal Experience Across All Samsung Devices
Jetbot AI+
High Quality Display Tech
Food AI
Bixby
Camera AI
6G
AI for Telecomm.
AI Laundry
AI
Robot
Healthcare


SRI-B
Introduction
December 2025


SRI-B Vision
NEW Valley
V=EI²
E2E Experience
Commercialization
Innovative Culture
Advanced Development
India Market
Local Biz Support
Engineering Leadership
AI Based Product Differentiation
Research to Market
Breakthrough Innovation at Low Cost
Leverage Ecosystem
Intrapreneur Culture
Top Talent Access
Growing Economy
Direct to Consumer


SRI-B | History
SAMSUNG
(1996)
(2002~2012)
(2013~2015)
(2016~2020)
(2021~)
Setup
Solution Development
Rebuilding
Towards Adv R&D
Create New Valley
SW Resource Support
Mobile, Network , Printer
Standard & Open Source
Added S.LSI, SAIT, Memory
SISO → SRI-B
Rebuilding - "People Quality & Service Dev"
Centre of Excellence in Modem, Camera, AI, IoT
India Biz Support
E2E Experience
Innovative Culture
India Market Growth
Contributions
GSM, GPRS
World's 1st LTE (S)
Scene Optimizer (S9)
World's 1st 5G (S10)
[R&D Capacity]
Research
XR Vision Fwk
HW IP
UMTS
World's 1st VoLTE (S3)
MPTCP
Single Take Photo
(One Click 10 Pics)
[Product Commercialization]
Pro Camera
(Expert RAW)
SmartThings (App/Cloud)
Next Bixby
Video Telephony
Chromium based Samsung Internet Browser
(S4)
Bixby 1.0 (MX/VD/DA)
(Speech, NLP)
SSP (MX)
[Revenue]
Samsung ADs
Data based D2C
Finance+

Tech Focus

SAMSUNG

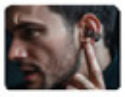
- Leverage AI/GenAI driven Innovations across various domains to deliver Tangible Experiences
- Enhance the Core Competitiveness by delivering Cutting-edge Technologies
- Promote Quality Consciousness as Core Value across Products, Services & Processes

Innovations

- Visual Intelligence
- Platform Intelligence
- System Intelligence
- Language Intelligence


Core Competitiveness

- Communication & Connectivity
- XR
- SmartThings
- Services




Quality Consciousness

- Test Automation Tools
- Validation of Personalization
- Code Foundation Model Opt'
- Code Quality ↑


Thank you!

Samsung Research

Indian Cultural Activities and Exchange in Korea:

Implications for Youth and Cultural Exchange

In Case of the India Center

Soon-Cheul Lee
Director, India Centre
Professor, Department of India Studies

Why Youth and Cultural Exchange Matters

South Korea and India have established a **special strategic partnership** relationship, which is expanding into cultural and educational fields.

Youth are the largest and most dynamic group as they will lead future relations between the two countries.

Cultural content plays an important role in helping youth understand each other's cultures.

Yoga, films, music, festivals, K-beauty, and other cultural elements are vehicles for vehicles for mutual understanding between youth.

Special Strategic Partnership

South Korea and India are expanding their relationship to fields of cultural exchange, education, and human resources.

Role of Youth

Youth are the main leaders who will shape future relations between the countries, and youth exchanges form the foundation of long-term relationships.

Evidence of Exchange

Thousands of participants gather at large public events like World Yoga Day, India Film Festival, and SARANG Festival in Korea annually, showing their interest in Indian culture.

Introduction to the India Center at Busan Foreign Language University

Center Location and Significance

Busan Foreign Language University's India Center is an official activity hub for India-related activities in southern Korea, supported by the Embassy of India and the S.V. Cultural Center in Korea .

Core Mission 1

Introduce to Busan and surrounding areas India's rich culture and soft power .

Core Mission 2

Particularly promoting personal exchanges between students and youth professionals .

India Center Key Business Areas

Cultural Exchange

- International Day of Yoga Day festivals
- SARANG - India Culture Festival
- India Film Festival (IFF)
- Holi Festival

Introducing India's rich culture through various events, allowing youth to naturally engage with it.

Educational Programs

- Yoga MA Program
- India Culture Community Education
- AYUSH research (traditional medicine)
- Media & Entertainment Education

Supporting youth in gaining expertise in India's culture and wellness.

Human Resource Exchange

- Youth cultural exchange programs
- Research collaboration & academic exchanges
- Exchange student programs
- [indembassyseoul.gov.in+2, eng.koreafilm.or.kr+2]

Building long-term relationships through direct exchanges between young people and professionals in Korea and India.

International Day of Yoga Festival

Birth of World Yoga Day

The United Nations declared June 21, 2015 as International Day of Yoga, and Korea is actively participating in this international commemorative event.

2025 11th Internatilnal Day of Yoga

In 2024, large-scale events were held throughout the country:

Nam Island June 8	Jeju Island June 15
Seoul COEX June 22	Milyang June 22
Busan June 23	

Key Program

Live Yoga Demonstrations

- Hands-on Experience Booths
- Cultural Information Booths
- Free Souvenirs Distribution

SARANG - India Culture Festival

Festival Overview

SARANG - India Culture Festival has been the representative cultural program of the Embassy of India since 2015, traversing several cities including Seoul and Busan, presenting diverse aspects of Indian culture such as dance, music, and film.

Busan Cultural Performance

In 2024, the India Center held the first ever Kuchipudi dance performance in Busan, providing local audiences the opportunity to experience the traditions of Indian culture.

India Center's Role

The India Center contributes to the spread of Indian culture in Korea, and through these festivals, it plays an important role in helping youth naturally engage with and understand Indian culture.

SARANG Festival Significance

SARANG Festival plays a key role in forming relationships built on long-term mutual understanding between youth through cultural experiences.

India Film Festival (IFF)

Event Overview

We hold the India Film Festival annually through cooperation with (1) **Busan Cinema Center, Hongbeopsa**. (2) **Yanhsan Good Forum**

Supported by the Embassy of India and the S.V. Cultural Center Korea, the festival screens **6 unopened Indian films** in Korea that have not been unveiled yet.

Audience Participation

The film festival, held for 3 days, attracts over **1,500 viewers**, particularly highlighting these events with many college students at Busan Universities.

Film Genres

The festival showcases diverse genres, from thrilling stories rooted in Indian traditions to moving dramas exploring the profound conditions of humanity.

Local Hub Role

The India Center is acting as the **hub for Indian films in Busan and Southeast regions** of Korea in the cultural calendar.

Holi Festival

Hindu Spring Festival

Holi Festival is an Indian and Nepali spring celebration welcoming the end of winter and the beginning of spring in Hindu culture.

Symbol of Equality and Love

It is a joyful celebration in which people of all ages, races, genders, nationalities, and social statuses throw colored powder, dance, and embrace each other together.

Promoting Cultural Harmony and Exchange

- Throwing colored powder symbolizes equality and a new beginning.
- A festival where everyone can participate equally, enabling social exchanges beyond class boundaries.
- Holi Festival is an important cultural event that brings people together and enhances understanding and harmony between people from different backgrounds.
- This cultural exchange contributes to building sustainable relations between Korea and India.

"Holi Festival is a festival full of colors and a day full of equality and love."

From Festival to Education: Yoga MA Program

Background of Program Establishment

Busan Foreign Language University has established the Yoga MA program based on World Yoga Day (IDY) events and yoga-related collaborations. This program serves as an important bridge connecting India's philosophy, yoga, meditation, and AYUSH traditional medicine system with Korea's wellness and mental health sector.

> *The program provides young people with career paths in wellness and cultural fields.*

Program for Korean Youth

- Beyond mass public participation to professional learning
- From short-term courses to graduate-level education

Collaboration with Indian Partners

- Joint research opportunities in yoga and wellness
- Visiting scholar exchange programs

Connection with AYUSH Industry

Wellness | Medical System | Cultural Exchange

This program provides practical opportunities for young people through broader connections with the AYUSH industry.

India Center, Busan Foreign Language University 9 / 12

Youth-Cultural Exchange and Economic Value

Economic Value of Youth Exchange

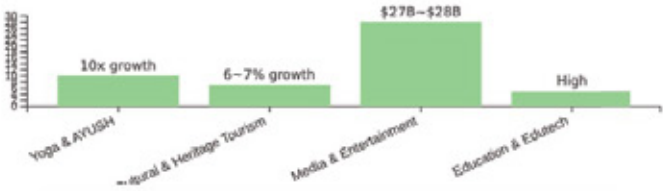
Youth and cultural exchanges possess significant economic value that directly connects to industries, technologies, and job creation.

Growth Potential Areas

Yoga & AYUSH/Wellness
AYUSH market has grown more than 10 times since 2014

Media & Entertainment
India's media industry is approximately $27-28 billion

Growth Potential and Market Size



Job Creation Opportunities

Youth and cultural exchange provides young people in both countries with new skill acquisition and career development opportunities in related industries.

India Center, Busan Foreign Language University 10 / 12

Future Cooperation Plans

Concrete proposals for the future of youth and cultural exchange between Korea and India

Korea-India Youth Yoga & Wellness Fellowship

- Linking with nationwide World Yoga Day (IDY) events (Seoul, Busan, Jeju, etc.)
- Visiting and training opportunities with major yoga institutions in India
- Supporting youth who are building in-depth experience and expertise in yoga and wellness

Professional exchange programs linked to the AYUSH industry

Film & Digital Co-Creation Lab

- Utilizing Korea's India Film Festival held in Seoul, Busan, Incheon, Gwangju, etc.
- Creating opportunities for students from both countries to jointly produce short films, web series, and other digital content
- Stimulating creative exchange and cultivating future media professionals

Entertainment trilateral and digital content development

Joint/Multiple Degree Programs

- Developing joint or multiple degree programs combining yoga and wellness with Korean studies/K-culture
- Hybrid educational courses utilizing India's Edutech platforms and Korean universities' cultural assets
- Enabling youth from both countries to gain in-depth understanding of each other's culture and professional expertise

Educational trilateral and international talent development

India Center, Busan Foreign Language University 11 / 11

Conclusion and Recommendations

Conclusion

- In Korea, events like World Yoga Day, India Film Festival, SARANG Festival, etc. featuring Indian culture are spreading nationwide, showing a strong and sustained interest in Indian culture.
- The India Center at Busan Foreign Language University and the Yoga graduate program are playing a regional hub role in these nationwide and bilateral initiatives, connecting Busan and the southern region of Korea.
- Youth exchange connecting festivals, education, and industry enhances mutual understanding, creates new technological and career paths, and contributes significantly to building a sustainable human resource exchange bridge between the two countries.

Recommendations

- → Youth-led co-creation development of Korea-India youth and cultural exchange through specific cooperation programs
- → Enhancing professional expertise in yoga and wellness through Korea-India youth yoga & wellness fellowship programs
- → Cultivating media professionals through film & digital co-creation labs
- → Developing deep cultural understanding and professional expertise through joint/multiple degree programs

We warmly welcome partners of India and Korea to create the future programs together.

In partnership with

Policy Planning & Research Division
Ministry of External Affairs
Government of India

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