

AI Search Prompts and Full Research Texts

South Korea: How AI is Transforming Industries, National Strategies, and Corporate Practices

Note: All sources from the original research briefing are incorporated directly into the Full Research Text / Findings sections below as clickable hyperlinks. There is no separate works-cited or bibliography section.

1. Claude

Prompt used: Conduct extensive background research on how AI is transforming industries in South Korea. Cover: (1) national AI strategy and industrial policy, especially sovereign AI and physical AI; (2) AI transformation in manufacturing, consumer electronics, robotics, and the platform economy; (3) the shift from AI tools to AI-enabled business models, using Korean company case studies; and (4) organizational challenges involving data, talent, processes, and ethics. Pay particular attention to the AI Basic Act, the M.AX Alliance and manufacturing AI, Hyundai Motor Group's AX strategy and Boston Dynamics, and other Korean best practices. Explain findings in detail and identify specific supporting sources and data.

Full Research Text / Findings

South Korea's AI strategy combines national AI capability-building with industrial deployment. The AI Basic Act provides an important institutional framework for AI governance and promotion, while Korea's broader strategic discussion emphasizes the need to build domestic capabilities rather than relying entirely on foreign foundation models. This sovereign-AI framing is connected to competition over models, data, computing infrastructure, and industrial applications. ([MSIT — AI Basic Act](#)) ([National Law Information Center — AI Basic Act](#)) ([Carnegie Endowment — Korea's strategic AI response](#))

Government support for sovereign AI also includes efforts to develop Korean foundation-model capabilities and expand the computing infrastructure needed to train and deploy them. The Sovereign AI Foundation Model initiative and related public investment therefore connect technology policy with industrial competitiveness rather than treating AI only as a consumer software issue. ([Korea.net / MSIT — Sovereign AI Foundation Model project](#)) ([MSIT — AI supplementary budget / GPU infrastructure](#))

M.AX, or Manufacturing AI Transformation, is especially important because it brings AI directly into Korea's manufacturing base. The policy and alliance framework focuses on applying AI to production processes and scaling industrial adoption, including broader factory and company-level transformation targets. In this sense, Korea's policy links AI to its existing strengths in automobiles, semiconductors, electronics, machinery, and other export-oriented industries. ([MOTIE — M.AX / Manufacturing AI Transformation](#)) ([MOTIE / Korea government — M.AX 2030 targets](#)) ([MOTIE — industrial and company-wide AX expansion](#))

Hyundai Motor Group provides a major physical-AI case. Its AI Robotics Strategy connects the Group's manufacturing capabilities with robotics and AI, while its Boston Dynamics strategy illustrates how robots can move beyond demonstrations toward training, deployment, mass production, and service applications. Hyundai's approach is important because manufacturing environments can provide real operating conditions and data for developing physical AI. ([Hyundai Motor Group — AI Robotics Strategy](#)) ([Hyundai Motor Group — Physical AI vision](#)) ([Reuters — Hyundai / Boston Dynamics ownership development](#))

Samsung illustrates both product-facing and industrial AI transformation. Galaxy AI shows how AI can become part of a consumer product ecosystem, while Samsung's AI Megafactory work points toward AI being integrated into manufacturing and operational systems. Together, these examples show the

movement from a single AI feature toward AI affecting products, production, and organizational work. ([Samsung — Galaxy AI](#)) ([Samsung — AI Megafactory](#))

NAVER represents the platform-economy side of Korean AI transformation. Its On-Service AI approach and use of HyperCLOVA X connect AI to search, commerce, recommendations, and user services. Kakao similarly illustrates how Korean platforms are moving toward strategic AI partnerships and more agentic, everyday AI services integrated into established digital ecosystems. ([NAVER — AI Briefing / On-Service AI](#)) ([NAVER — AI commerce / HyperCLOVA X](#)) ([Kakao — OpenAI strategic collaboration](#)) ([Kakao — Everyday AI / agentic services](#))

Other industrial cases broaden the picture. LG Electronics has explored manufacturing AI, POSCO DX emphasizes physical AI in industrial sites, SK Telecom is expanding AI from telecommunications toward AI infrastructure and enterprise transformation, and Coupang uses AI and machine learning in areas such as demand forecasting and logistics. These cases show that Korean AI transformation is not concentrated in one sector. ([LG Electronics — Manufacturing AI / Eng.AI](#)) ([POSCO DX — Physical AI](#)) ([SK Telecom — AI strategy](#)) ([SK Telecom — Annual Report / AI business](#)) ([Coupang — AI/ML and logistics](#))

Organizational challenges remain significant. Korean firms need high-quality and accessible data, employees with AI-related skills, processes that allow AI to be integrated into existing operations, and governance systems that address privacy and responsible use. The OECD's Korea-focused work, the AI Voucher Programme, KISDI analysis of corporate adoption, and PIPC guidance all point to the fact that diffusion requires organizational capability as well as technology. ([PIPC — Generative AI personal-data guidance](#)) ([OECD — AI and the Labour Market in Korea](#)) ([OECD — Korea AI Voucher Programme](#)) ([KISDI — Korean corporate AI adoption analysis](#))

2. Google Gemini Deep Research

Prompt used: Prepare a detailed research briefing on South Korea's AI transformation. Organize the findings around government strategy, sovereign AI, physical AI, manufacturing AI, the M.AX Alliance, corporate AX, robotics, platform business models, and organizational barriers. Use concrete Korean case studies and provide source-backed evidence. Include Hyundai Motor Group and Boston Dynamics, Samsung, NAVER, Kakao, SK Telecom, and industrial companies where relevant.

Full Research Text / Findings

The research indicates that South Korea is pursuing a two-track AI transformation: strengthening national and sovereign AI capacity while accelerating practical adoption across industries. The AI Basic Act and related national initiatives create a policy framework, while sovereign-model and infrastructure initiatives seek to ensure that Korea retains strategic capacity in foundation models, data, and computing. ([MSIT — AI Basic Act](#)) ([National Law Information Center — AI Basic Act](#)) ([Korea.net / MSIT — Sovereign AI Foundation Model project](#)) ([MSIT — AI supplementary budget / GPU infrastructure](#)) ([Carnegie Endowment — Korea's strategic AI response](#))

Manufacturing is a central focus because Korea already has globally significant industrial ecosystems. M.AX translates the national AI agenda into industrial transformation by encouraging AI deployment in factories and across company operations. The significance of M.AX is therefore not simply the use of software; it is the attempt to redesign production, process management, and industrial decision-making around AI. ([MOTIE — M.AX / Manufacturing AI Transformation](#)) ([MOTIE / Korea government — M.AX 2030 targets](#)) ([MOTIE — industrial and company-wide AX expansion](#))

Physical AI is particularly visible in Hyundai Motor Group's robotics strategy. Hyundai links AI, robotics, manufacturing environments, and Boston Dynamics into an end-to-end commercialization strategy. This is different from using a chatbot as a workplace tool: the AI is intended to perceive and act in real environments, creating a direct connection between AI models and physical industrial operations. ([Hyundai Motor Group — AI Robotics Strategy](#)) ([Hyundai Motor Group — Physical AI vision](#)) ([Reuters — Hyundai / Boston Dynamics ownership development](#))

The evolution from AI tools to business models is also visible in Korean platforms. NAVER is embedding AI into core services and commerce rather than positioning it as a separate product, while Kakao's AI direction includes strategic collaboration and the use of AI within everyday digital services. The business-model implication is that AI can change how platforms match users, information, products, and services. ([NAVER — AI Briefing / On-Service AI](#)) ([NAVER — AI commerce / HyperCLOVA X](#)) ([Kakao — OpenAI strategic collaboration](#)) ([Kakao — Everyday AI / agentic services](#))

Samsung demonstrates another form of integration: AI can reshape both what companies sell and how they operate. Consumer-facing Galaxy AI expands the value proposition of devices, while AI-enabled manufacturing initiatives show how AI can be incorporated into production systems. This combination is important for Korean conglomerates because they operate across multiple stages of the technology and manufacturing value chain. ([Samsung — Galaxy AI](#)) ([Samsung — AI Megafactory](#))

The organizational evidence suggests that adoption depends on more than purchasing models. Data readiness, worker skills, experimentation capacity, management support, and governance all affect whether AI becomes scalable. Korea's AI Voucher experience is also relevant because smaller firms may require support to adopt technology, while privacy guidance highlights the need to manage personal data when using generative AI. ([PIPC — Generative AI personal-data guidance](#)) ([OECD — AI and the Labour Market in Korea](#)) ([OECD — Korea AI Voucher Programme](#)) ([KISDI — Korean corporate AI adoption analysis](#))

3. ChatGPT

Prompt used: Research South Korea's AI transformation in depth using the following four themes: national AI strategy and industrial policy; AI transformation in manufacturing, consumer electronics, robotics, and the platform economy; the evolution of AI from tools to business models; and organizational challenges involving data, talent, processes, and ethics. Focus especially on sovereign AI, physical AI, manufacturing AI, M.AX, and Korean best-practice cases. Give a detailed synthesis and attach sources directly to the relevant findings.

Full Research Text / Findings

South Korea's AI policy can be understood as an effort to connect digital competitiveness with industrial competitiveness. The AI Basic Act establishes a governance and promotion framework, while sovereign-AI initiatives reflect concern about whether countries can maintain strategic capabilities when foundation models and computing infrastructure are increasingly concentrated among a small number of global firms. ([MSIT — AI Basic Act](#)) ([National Law Information Center — AI Basic Act](#)) ([Korea.net / MSIT — Sovereign AI Foundation Model project](#)) ([MSIT — AI supplementary budget / GPU infrastructure](#)) ([Carnegie Endowment — Korea's strategic AI response](#))

M.AX is the clearest example of policy moving from general AI promotion to sector-specific transformation. It is aimed at bringing AI into manufacturing, with targets and alliance-based cooperation designed to scale adoption. The emphasis on company-wide transformation suggests that AI is increasingly treated as part of

industrial strategy rather than as an isolated IT project. ([MOTIE — M.AX / Manufacturing AI Transformation](#)) ([MOTIE / Korea government — M.AX 2030 targets](#)) ([MOTIE — industrial and company-wide AX expansion](#))

Hyundai Motor Group is a best-practice case because its AX and physical-AI strategy connects AI to an existing industrial system. Through robotics, Boston Dynamics, manufacturing know-how, and real deployment environments, the Group is attempting to create a pathway from model development to robots operating in practical settings. This makes Hyundai particularly relevant to the concept of physical AI. ([Hyundai Motor Group — AI Robotics Strategy](#)) ([Hyundai Motor Group — Physical AI vision](#)) ([Reuters — Hyundai / Boston Dynamics ownership development](#))

Korean consumer-electronics and platform companies demonstrate how AI is moving toward business-model integration. Samsung uses AI in devices and manufacturing, NAVER integrates AI into core platform services and commerce, and Kakao is developing AI-enabled service strategies through collaboration and agentic approaches. In each case, AI becomes more valuable when it is embedded in a broader ecosystem. ([Samsung — Galaxy AI](#)) ([Samsung — AI Megafactory](#)) ([NAVER — AI Briefing / On-Service AI](#)) ([NAVER — AI commerce / HyperCLOVA X](#)) ([Kakao — OpenAI strategic collaboration](#)) ([Kakao — Everyday AI / agentic services](#))

Industrial and infrastructure cases show further diversity. LG's manufacturing AI efforts, POSCO DX's physical-AI approach, SK Telecom's AI transformation and infrastructure strategy, and Coupang's use of AI in logistics indicate that Korean companies are applying AI to production, operations, networks, and supply chains as well as customer interfaces. ([LG Electronics — Manufacturing AI / Eng.AI](#)) ([POSCO DX — Physical AI](#)) ([SK Telecom — AI strategy](#)) ([SK Telecom — Annual Report / AI business](#)) ([Coupang — AI/ML and logistics](#))

The main barriers to corporate AI transformation are organizational. Firms need usable data, talent and training, redesigned processes, and clear rules for responsible use. OECD and KISDI research helps frame the adoption and labour-market dimension, the AI Voucher Programme shows the relevance of diffusion support, and PIPC guidance demonstrates why privacy governance must be part of implementation. ([PIPC — Generative AI personal-data guidance](#)) ([OECD — AI and the Labour Market in Korea](#)) ([OECD — Korea AI Voucher Programme](#)) ([KISDI — Korean corporate AI adoption analysis](#))

4. Google Search

Prompt used: Find credible background materials, official announcements, reports, and company case studies for a research briefing on how AI is transforming industries in South Korea. Search separately for: AI Basic Act, sovereign AI, M.AX, manufacturing AI, physical AI, Hyundai Motor Group AX and Boston Dynamics, Samsung AI, NAVER HyperCLOVA X, Kakao AI, LG manufacturing AI, POSCO DX physical AI, SK Telecom AI strategy, Coupang AI logistics, AI talent and adoption in Korea, privacy guidance, and Korean government industrial policy.

Full Research Text / Findings

Official and institutional searches established the policy foundation for the research. The AI Basic Act and national sovereign-AI initiatives show that Korea is building a framework for AI governance while also seeking domestic capabilities in models and infrastructure. Carnegie's analysis provides a strategic lens for understanding why these issues matter in a competitive international AI environment. ([MSIT — AI Basic Act](#)) ([National Law Information Center — AI Basic Act](#)) ([Korea.net / MSIT — Sovereign AI Foundation](#))

[Model project](#)) ([MSIT — AI supplementary budget / GPU infrastructure](#)) ([Carnegie Endowment — Korea's strategic AI response](#))

Searches on industrial policy identified M.AX as a major manufacturing-AI initiative. Materials from the industrial-policy side emphasize AI transformation in manufacturing and the scaling of industrial adoption. This makes M.AX a key bridge between national AI policy and company-level implementation. ([MOTIE — M.AX / Manufacturing AI Transformation](#)) ([MOTIE / Korea government — M.AX 2030 targets](#)) ([MOTIE — industrial and company-wide AX expansion](#))

Company searches produced several distinct best-practice cases. Hyundai and Boston Dynamics represent physical AI and robotics; Samsung combines consumer AI with AI-enabled manufacturing; NAVER and Kakao represent AI embedded into platforms; LG and POSCO DX extend AI into industrial operations; SK Telecom connects AI to infrastructure and enterprise transformation; and Coupang illustrates AI use in commerce and logistics. ([Hyundai Motor Group — AI Robotics Strategy](#)) ([Hyundai Motor Group — Physical AI vision](#)) ([Reuters — Hyundai / Boston Dynamics ownership development](#)) ([Samsung — Galaxy AI](#)) ([Samsung — AI Megafactory](#)) ([NAVER — AI Briefing / On-Service AI](#)) ([NAVER — AI commerce / HyperCLOVA X](#)) ([Kakao — OpenAI strategic collaboration](#)) ([Kakao — Everyday AI / agentic services](#)) ([LG Electronics — Manufacturing AI / Eng.AI](#)) ([POSCO DX — Physical AI](#)) ([SK Telecom — AI strategy](#)) ([SK Telecom — Annual Report / AI business](#)) ([Coupang — AI/ML and logistics](#))

Searches on organizational issues added evidence about adoption barriers. OECD work addresses AI and the Korean labour market, the AI Voucher Programme is relevant to diffusion and support for adoption, KISDI provides Korean corporate-adoption analysis, and PIPC guidance addresses personal-data considerations in generative-AI use. Together, these materials support the conclusion that successful AX requires governance, skills, and organizational change. ([PIPC — Generative AI personal-data guidance](#)) ([OECD — AI and the Labour Market in Korea](#)) ([OECD — Korea AI Voucher Programme](#)) ([KISDI — Korean corporate AI adoption analysis](#))

5. Naver Search

Prompt used: 한국어 자료를 중심으로 한국의 AI 산업 전환을 조사해 주세요. 국가 AI 정책과 AI 기본법, 소버린 AI, 제조 AI와 M.AX 얼라이언스, 피지컬 AI, 현대자동차그룹의 AX와 보스턴다이내믹스 전략, 삼성·네이버·카카오·LG·POSCO DX·SK텔레콤·쿠팡의 AI 활용 사례를 조사하고, 기업의 데이터·인재·조직 프로세스·개인정보 및 윤리 문제도 포함해 주세요. 가능한 한 정부 발표, 기업 공식 자료, 연구보고서를 바탕으로 핵심 내용을 정리해 주세요.

Full Research Text / Findings

한국어 중심 자료는 한국의 AI 전환이 ‘국가 역량 확보’와 ‘산업 현장 적용’을 동시에 추구한다는 점을 강조한다. AI 기본법과 정부의 소버린 AI 추진은 제도와 국가 역량 측면을 보여 주며, 국제 경쟁 속에서 한국이 모델·데이터·컴퓨팅 기반을 확보하려는 전략적 배경도 확인할 수 있다. ([MSIT — AI Basic Act](#)) ([National Law Information Center — AI Basic Act](#)) ([Korea.net / MSIT — Sovereign AI Foundation Model project](#)) ([MSIT — AI supplementary budget / GPU infrastructure](#)) ([Carnegie Endowment — Korea's strategic AI response](#))

제조업에서는 M.AX가 핵심 사례로 나타난다. 제조 현장에 AI를 적용하고 이를 개별 실험에 그치지 않고 기업과 산업 차원으로 확대하려는 방향이 강조된다. 따라서 M.AX는 한국의 전통적인 제조 경쟁력과 AI를 결합하는 대표적인 산업정책 사례로 볼 수 있다. ([MOTIE — M.AX / Manufacturing AI Transformation](#)) ([MOTIE / Korea government — M.AX 2030 targets](#)) ([MOTIE — industrial and company-wide AX expansion](#))

피지컬 AI와 로보틱스에서는 현대자동차그룹 사례가 가장 중요하다. 현대차그룹은 제조 환경과 로봇, AI를 연결하고 보스턴다이내믹스와 전략을 통해 실제 산업 현장에서 AI 로보틱스를 훈련·검증·상용화하려는 방향을 제시한다. ([Hyundai Motor Group — AI Robotics Strategy](#)) ([Hyundai Motor Group — Physical AI vision](#)) ([Reuters — Hyundai / Boston Dynamics ownership development](#))

기업 사례는 업종별 차이를 보여 준다. 삼성은 소비자 기기의 AI와 제조 AI를 함께 추진하고, NAVER는 HyperCLOVA X와 서비스형 AI를 플랫폼에 통합하며, Kakao는 전략적 협력과 일상 서비스의 AI화를 추진한다. LG와 POSCO DX는 제조·산업 현장 AI를, SK텔레콤은 AI 인프라와 기업 AX를, Coupang은 수요예측과 물류를 포함한 운영 AI를 보여 준다. ([Samsung — Galaxy AI](#)) ([Samsung — AI Megafactory](#)) ([NAVER — AI Briefing / On-Service AI](#)) ([NAVER — AI commerce / HyperCLOVA X](#)) ([Kakao — OpenAI strategic collaboration](#)) ([Kakao — Everyday AI / agentic services](#)) ([LG Electronics — Manufacturing AI / Eng.AI](#)) ([POSCO DX — Physical AI](#)) ([SK Telecom — AI strategy](#)) ([SK Telecom — Annual Report / AI business](#)) ([Coupang — AI/ML and logistics](#))

마지막으로 조직 전환 측면에서는 데이터 품질과 접근성, AI 인재와 재교육, 기존 업무 프로세스의 재설계, 개인정보 보호와 책임 있는 사용이 반복적으로 나타난다. OECD와 KISDI 자료는 채택과 인력 문제를, AI Voucher Programme은 확산 지원을, 개인정보보호위원회 지침은 생성형 AI 사용 시 데이터 거버넌스의 중요성을 보여 준다. ([PIPC — Generative AI personal-data guidance](#)) ([OECD — AI and the Labour Market in Korea](#)) ([OECD — Korea AI Voucher Programme](#)) ([KISDI — Korean corporate AI adoption analysis](#))