

KOREA TECH

PEOPLE.
IDEAS.
INDUSTRY.
A BRIGHTER
TOMORROW.

INNOVATION
MADE
IN KOREA
IMPACTING
THE WORLD.



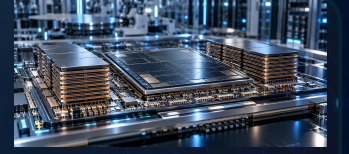
GLOBAL INSIGHTS - SMARTER DECISIONS
GSR TECH MAGAZINE

KOREA'S TECH MAP

THE MEMORY
BEHIND AI

POWERING
THE CAR

and more...



GSR TECH

MAGAZINE

ISSUE 26/06

World of TECH:

AI INFRASTRUCTURE & THE
COMPUTE BOOM

THE NEW GEOGRAPHY OF CHIPS

ROBOTS AT WORK

BATTERIES & BEYOND

CYBERSECURITY & DIGITAL TRUST





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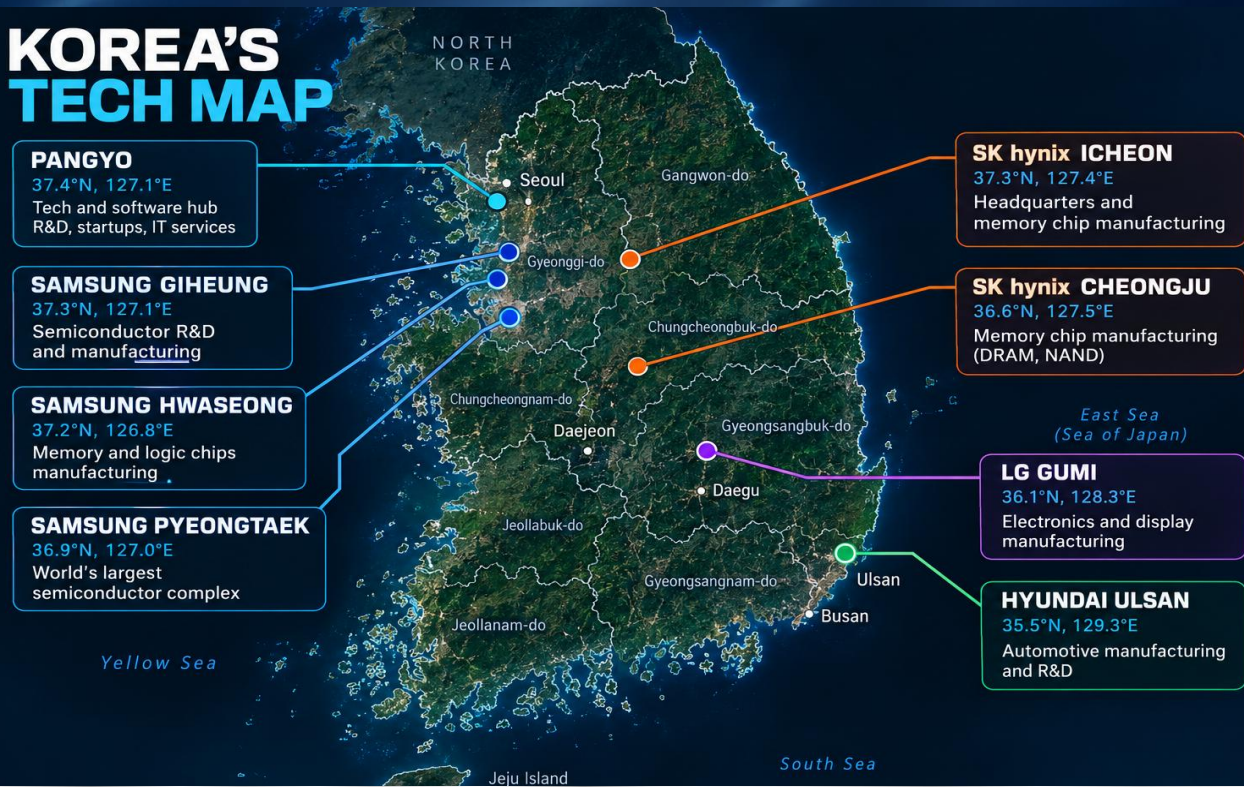
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Country Focus

KOREA'S TECH MAP



Korea's tech economy fits on a small map. Most of it lies within two hours of Seoul, in a belt of chip fabs, labs and software parks across Gyeonggi Province. Samsung's chip complexes at Giheung, Hwaseong and Pyeongtaek and SK hynix's base in Icheon form the memory heart. Pangyo Techno Valley, south of Seoul, is home to Kakao and game studios such as Nexon and NCSoft.

Further south, Daejeon's Daedeok Innopolis concentrates government and corporate research, while LG Display's Paju and Gumi sites build the screens. On the south-east coast, Hyundai's Ulsan plant turns technology into cars. From chip to car, Korea's industrial chain is short and dense.

Photo: Imtotallykorean / Wikimedia Commons — CC BY-SA 4.0 ekle;
“Slogan:” kelimesini kaldır.





KOREA IN NUMBERS

CHIPS / RESEARCH / ROBOTS / EXPORTS

\$709.7 bn

TOTAL EXPORTS

2025 • All-time record

\$173.4 bn

SEMICONDUCTOR EXPORTS

2025 • All-time record

1 in 4

EXPORT DOLLARS FROM CHIPS

2025 • Approximate share

\$72 bn

CAR EXPORTS

2025 • All-time record

5.13%

R&D SPENDING / GDP

2024 • World no. 2

1,220

INDUSTRIAL ROBOTS

Per 10,000 manufacturing workers
2024 • World no. 1

KOREA IN NUMBERS

Korea is small on the map but large in technology. It now ranks among the world leaders in chips, factory automation and research spending.

In 2025 its exports passed \$700 billion for the first time, reaching \$709.7 billion. Semiconductors led the way with a record \$173.4 billion, up 22.2% on the year, driven by demand for AI memory.

Investment follows.

Korea spent 5.13% of GDP on research and development in 2024, second only to Israel, with companies funding most of it.

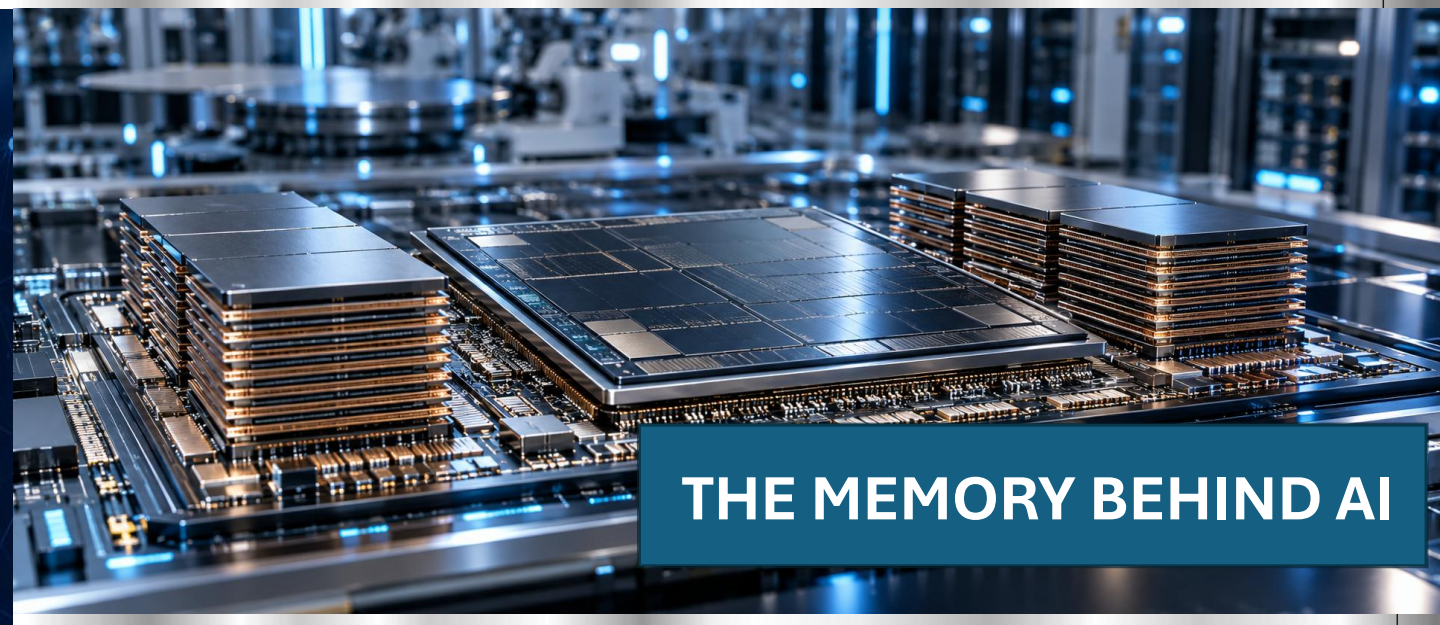
On the factory floor, it leads the world: 1,220 industrial robots per 10,000 manufacturing workers, against a global average of 132

Photo: Christophe95 /
Wikimedia Commons — CC
BY-SA 4.0





Country Focus

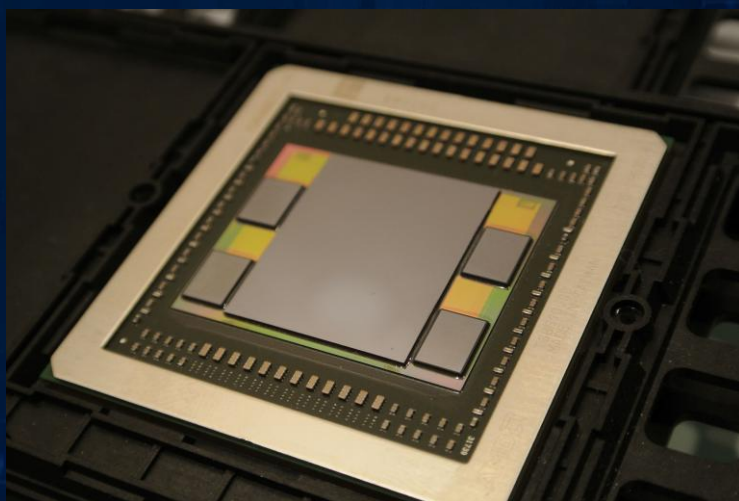


THE MEMORY BEHIND AI

Every AI accelerator needs high-bandwidth memory, or HBM: stacked DRAM chips that feed data to the processor fast enough to keep it busy. Korea makes most of it.

SK hynix leads the market: Counterpoint Research put its share at 53% in the third quarter of 2025, with Samsung at 35%. Together the two Korean firms supplied close to nine in ten HBM chips sold worldwide.

The next battle is HBM4, the sixth generation, chosen for Nvidia's Vera Rubin platform. Samsung reportedly began HBM4 shipments in February 2026. Demand still outruns supply. Both companies are adding capacity, and for Korea memory has become what oil is for others: a strategic export.



MEMORY • AI • CHIPS •
KOREA



THE SCREEN MAKERS

Look closely at a premium phone, laptop or TV and there is a good chance the screen came from Korea. Samsung Display and LG Display built the modern OLED industry.

The two firms split the work. Samsung Display leads in small and mid-size OLED for phones and laptops, and also makes QD-OLED for TVs and monitors. LG Display makes the WOLED panels behind most OLED TVs.



In January 2026 Samsung Display began shipping from the world's first Gen-8.6 OLED line in Asan, a roughly \$3 billion bet on laptops and tablets. Larger glass sheets cut the cost per panel. The goal: keep OLED's next big market, IT screens, in Korean hands as Chinese rivals build their own lines.

Slogan: OLED • QD-OLED • WOLED • KOREA



POWERING THE CAR

Every electric car starts with a cell. Korea's three battery makers, LG Energy Solution, Samsung SDI and SK On, are among the biggest suppliers outside China.

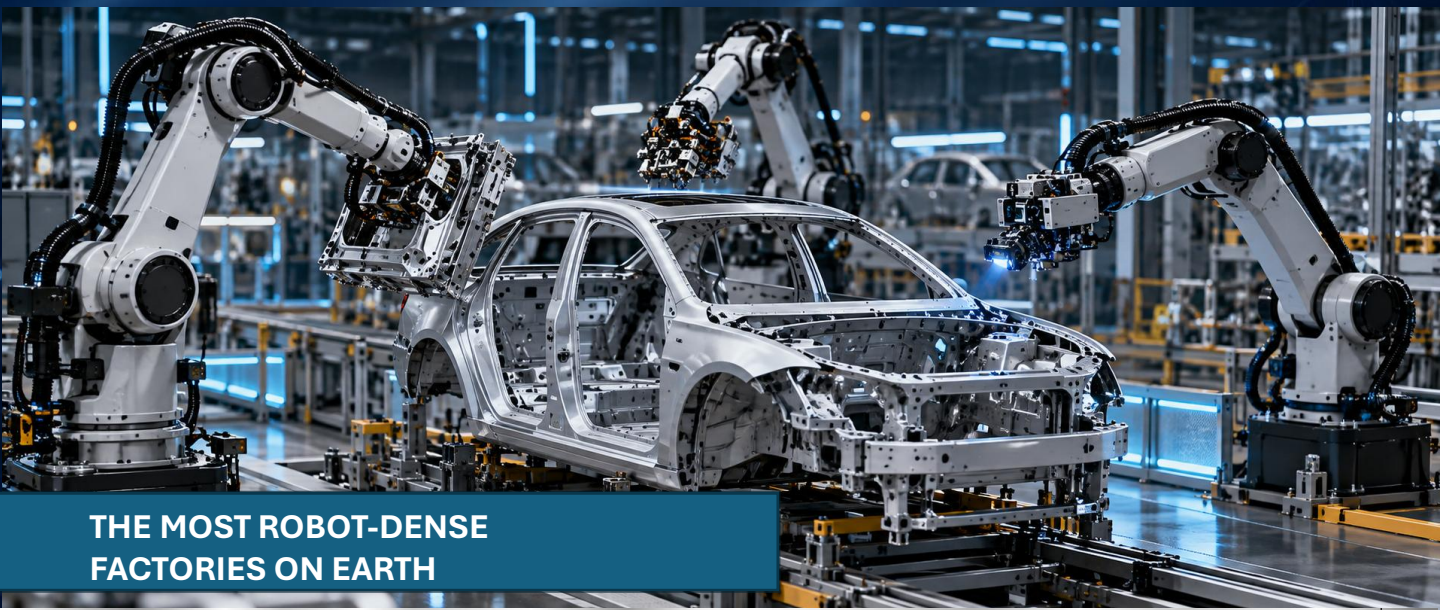
Their customers tell the story: LG Energy Solution supplies Tesla, Chevrolet, Kia and Volkswagen; SK On's cells sit in the Hyundai IONIQ 5 and Kia EV6; Samsung SDI powers BMW's i4, i5, i7 and iX.

Outside China, the three held 38.3% of EV battery use from January to August 2025, with LG Energy Solution second. Globally, CATL still leads. The pressure is real: their combined global share fell to 16.0% in January–October 2025, down 3.5 points, as Chinese rivals expanded, notably in Europe.

BMW i3 battery pack displayed at Electronica, 2012.



Photo: RudolfSimon — CC BY-SA 3.0



THE MOST ROBOT-DENSE FACTORIES ON EARTH

No country uses more factory robots per worker than Korea: 1,220 for every 10,000 manufacturing employees in 2024, more than nine times the global average of 132.

Now Korea wants to build the robots too. Hyundai Motor Group took control of Boston Dynamics in 2021 and in July 2026 moved to buy SoftBank's remaining stake, making the US maker of Atlas fully its own.



The production version of Atlas was unveiled at CES 2026. Hyundai plans to put it to work at its Georgia Metaplant from 2028, starting with parts sequencing. Assembly work could follow by 2030. Alongside, Doosan Robotics builds collaborative robots designed to work safely beside people on factory lines.

ROBOTS • AUTOMATION •
HUMANOIDS • KOREA



Country Focus



THE SMART HOME, MADE IN SEOUL

Korea's biggest tech brands do not stop at the factory gate. They want to run the home: the fridge, the washer, the TV and the lights, all from one app.

Samsung's SmartThings is the largest example. It passed 430 million users worldwide by December 2025, up from 350 million in September 2024, and connects more than 4,500 device models from over 380 partners.

AI is moving into the appliance itself.

Samsung's latest Family Hub fridge uses AI Vision with Google Gemini to recognise food and suggest recipes.

LG runs its own ThinQ platform, while Coway and Cuckoo bring Korean water purifiers and rice cookers into homes across Asia and beyond





Country Focus



SOUTH KOREA OUTLOOK & OPPORTUNITIES

TREND

Korea's chip boom has become an export surge. September exports hit a record \$120.9 billion, up 83.5% on the year, with chips alone at \$60.3 billion.

RISK

Concentration is the flip side. Chips now make up about half of all exports, leaving Korea exposed to any turn in the memory cycle. Protectionism, Middle East tensions and Chinese rivals add pressure.



OUTLOOK

Korea is on course for its first \$1 trillion export year, a mark only the US, China and Germany have reached. AI demand for memory, OLED and robots favours its key industries. The test for 2027 is breadth: non-chip exports rose 23% in September.

SOURCE: Ministry of Trade · Korea Customs Service · Yonhap



AI INFRASTRUCTURE & THE COMPUTE BOOM

AI is now an infrastructure race. Alphabet, Amazon, Microsoft and Meta plan to spend about \$700 billion on capital projects in 2026, mostly on data centres and chips.

Meta alone raised its 2026 budget to \$125–145 billion, citing higher component and data-centre costs. Amazon spent \$44.2 billion in a single quarter, while Google Cloud's order backlog passed \$460 billion.

Power is the new bottleneck. The IEA expects data-centre electricity use to more than double by 2030, to around 945 terawatt-hours. That is pushing hyperscalers toward nuclear deals, liquid cooling and new sites wherever grids can deliver. Chips matter, but megawatts decide.

AI • DATA CENTRES • POWER •
GLOBAL





THE NEW GEOGRAPHY OF CHIPS

The chip map is being redrawn. TSMC will invest another \$100 billion in Arizona, lifting its planned US spending to \$265 billion for up to 10 fabs and two packaging plants.

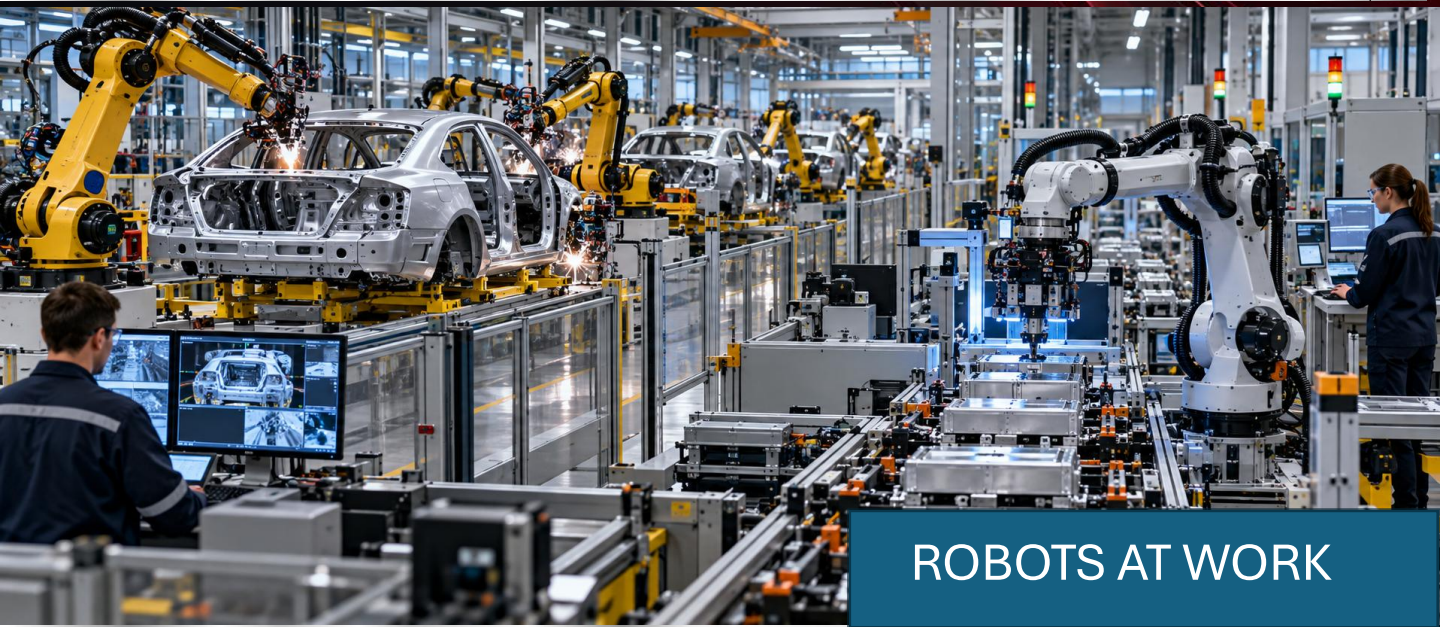
Taiwan still makes the most advanced chips, but production is spreading. TSMC is adding 3nm fabs in Taiwan, Arizona and Japan, while its Dresden fab in Germany will serve car and industrial customers.



Money follows the demand. TSMC lifted its 2026 capital budget to \$60–64 billion, as AI orders pushed second-quarter profit up 77% to a record \$22 billion.

Governments are buying in too. Washington took a 10% stake in Intel for \$8.9 billion, turning chipmaking into national industrial policy.

CHIPS • FABs • POLICY • GLOBAL



ROBOTS AT WORK

Factories installed a record 603,000 industrial robots in 2025, up 11%, according to the IFR. China took 354,000 of them, more than the rest of the world combined. The global fleet now tops 5 million robots, double the level of seven years ago. Europe is the exception: EU installations fell 11% to 60,500. The IFR expects 655,000 new robots worldwide in 2026.

Humanoids are next. Some 7,000 full-size models were sold in 2025, and China's Unitree shipped over 5,500 humanoids of all sizes.

The West is slower: Figure and Agility each shipped about 150 in 2025, and Tesla had not reported Optimus output by July.

ROBOTS • HUMANOIDS •
AUTOMATION • GLOBAL
• GLOBAL IMPACT





BATTERIES & BEYOND

Batteries are moving beyond the car. BloombergNEF expects 459 GWh of battery storage to be installed worldwide in 2026, as grids absorb more solar and wind.

Data centres add new demand, needing round-the-clock backup power. Lithium-iron-phosphate cells dominate this market, and most are made in China, led by CATL, the world's largest battery maker.



Sodium-ion is the challenger. CATL scheduled its first sodium-ion storage deliveries in China for September and has signed a 60 GWh, three-year order.

Sodium is abundant, safe and strong in the cold. CATL aims to match the cost of lithium-iron-phosphate cells by the end of 2026.

BATTERIES • STORAGE •
SODIUM • GLOBAL



CYBERSECURITY & DIGITAL TRUST

Ransomware is accelerating. NCC Group counted 1,073 attacks worldwide in August 2026, up 12% from July and the highest monthly total of the year. Public bodies are targets too. Berlin's state government refused to pay after a data-theft extortion claim, and Japanese rail group Keio shut its network to contain an attack on business systems.

Mittelstand firms are investing in automation and digital transformation.

AI is changing both sides.

Kaspersky reports ransomware operators using an AI coding assistant to speed up attacks, while defenders use AI to spot them faster.

The lesson for companies is simple: patch fast, back up offline and train staff. Trust is now a board-level asset, not an IT task.

SECURITY • RANSOMWARE •
AI • TRUST





AI GLASSES: THE NEXT SCREEN

The next screen may sit on your nose. Global AI glasses shipments jumped 263% year on year in the first half of 2026, according to Counterpoint Research.

Most are display-free frames with cameras, speakers and an AI assistant. Meta dominates: EssilorLuxottica sold more than 7 million Ray-Ban and Oakley Meta glasses in 2025, up from about 2 million in 2023–24 combined.



Glasses with a real display are still rare but rising fast: AR shipments grew 449%. China's Rokid leads that segment with a 41% share, ahead of Meta.

IDC expects 13.6 million display-less smart glasses to ship in 2026. The phone is not dead yet, but it now has a rival in your eyeline.

GLASSES • AI • WEARABLES •
GLOBAL



THE MEMORY SQUEEZE HITS PHONES

The AI boom has a price, and phone buyers are paying it. With memory makers serving data centres first, IDC expects smartphone shipments to fall a record 16.7% in 2026.

The average phone will cost \$581, up 27.6% in a year. Counterpoint says more than 40% of models have had price rises in 2026, a first for the industry, and some existing phones now cost nearly double.

Premium brands hold up best. Apple's iOS is heading for a record 23.6% share, as iPhone shipments slip just 1.3% while cheaper phones shrink. Apple's first foldable has also revived that niche: IDC sees foldables growing 12.6% to 22.9 million units this year.

SMARTPHONES • MEMORY •
PRICES • GLOBAL





Apple finally folded. At its first launch event under new CEO John Ternus, it unveiled the iPhone Duo, a \$1,999 passport-shaped foldable, alongside a pricier iPhone 18 Pro.

The new Pro models run on the 2nm A20 Pro chip. For the first time there is no standard iPhone in the autumn line-up: the base iPhone 18 and cheaper models move to spring 2027.



The duel is now fold against fold. Samsung's Galaxy Z Fold8 arrived this summer, and Chinese makers such as Honor and Huawei keep pushing thinner designs.

Foldables remain small, about 2% of phones this year by TrendForce's estimate, but they are where the premium battle is moving.

FOLDABLES • IPHONE • GALAXY • GLOBAL



THE TV WARS GO RGB

The TV business is being reshuffled. Under a joint venture, TCL takes operational control of Sony's TV brand, while LG is weighing a possible TV deal with Hisense. Chinese brands are closing in on the leader. TCL's share of global TV shipments reached 14% in the first quarter, just 2.8 points behind Samsung's 17%, according to Counterpoint Research.

The new battleground is the backlight. Mini LED reached 13% of TV shipments in the second quarter, and RGB LED sets, a premium rival to OLED, hit 295,000 units.

Demand held up: the World Cup helped lift global TV shipments 3.6% to 48.8 million units in the quarter, Omdia says.



TV • MINI LED • RGB • GLOBAL



THE HOME THAT KNOWS YOU

Apple is moving to the centre of the smart home. Bloomberg reports a display-based home hub, built around Siri AI, is due on 13 October alongside a new HomePod mini. Its roughly 6-inch square screen comes in countertop and wall versions and recognises who walks up, showing each household member their own content. Third-party devices for the platform are in the works.



Reliability is the other frontier. Ring, owned by Amazon, has unveiled its first smart lock, with a hand-turned dial that recharges a dead battery. It opens by fingerprint, keypad, app or Alexa, connects over Amazon Sidewalk rather than home Wi-Fi, and reaches US homes in early 2027.

SMART HOME • AI • SECURITY •
GLOBAL



SMARTER MACHINES, TOUGHER MARKETS

White goods are facing a slower world. China's Haier saw first-half revenue fall 2.8% to RMB 152.1 billion, with net profit down 14.3%. Weak demand at home and in North America, where tariffs and a slow housing market weigh on sales, hit the industry. Growth is moving elsewhere: Haier's revenue rose 17.1% in South Asia and grew strongly in Europe.

Makers are answering with AI. Haier now offers L4-level smart appliance suites that manage household tasks with minimal input, selling systems, not single machines. Cooling know-how is crossing over too: Haier has won its first contract to cool an AI data centre using magnetic-levitation technology.



APPLIANCES • AI • EFFICIENCY
GLOBAL



EUROPE'S APPLIANCE MAP RUNS THROUGH TÜRKİYE

Europe's appliance map now runs through Türkiye. Arçelik is buying Whirlpool's remaining 25% of Beko Europe for €71.45 million, taking full control of the business.

Formed in 2024 from Whirlpool's European operations, Beko Europe employs about 14,000 people and manages 16 brands. It has closed factories and cut jobs to concentrate production in fewer, more automated plants.



The turnaround is starting to show. Arçelik returned to a net profit of 3.4 billion lira in the second quarter, ending seven straight quarterly losses. Demand is still soft: revenue fell 11.9%, but gross margin rose to 29.3% as efficiency gains offset tough price competition.

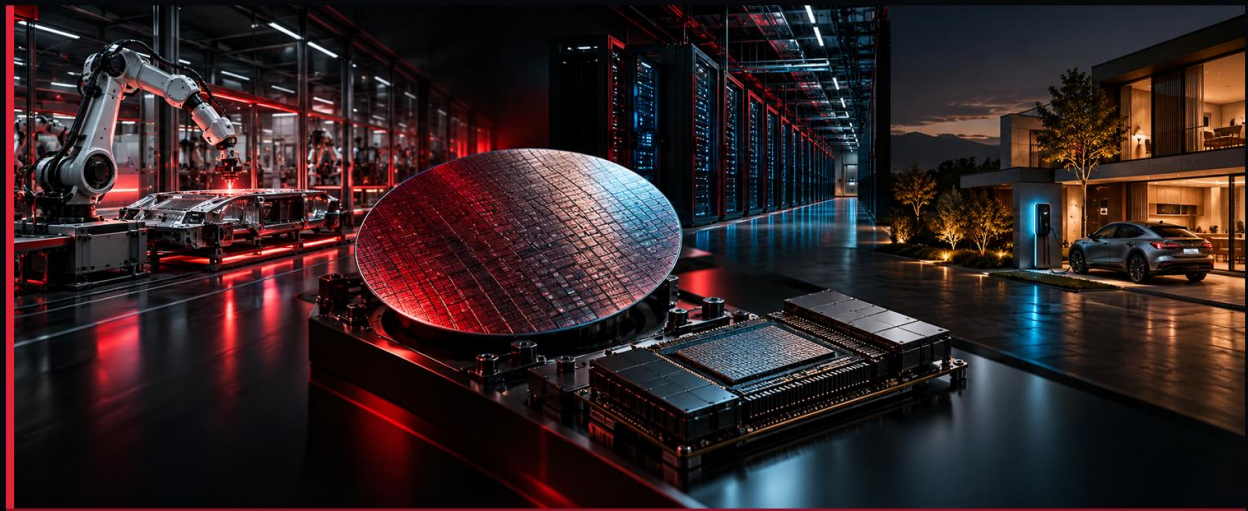
APPLIANCES • EUROPE •
TÜRKİYE • BEKO



EDITOR'S LETTER

THE SYSTEM IS THE STORY

Why the next technology cycle will be won across layers—not devices.



A CONNECTED TECHNOLOGY ECONOMY

Technology is no longer a collection of separate industries. AI depends on chips. Chips depend on foundries, advanced packaging and energy. Robots need compute, factories need cybersecurity, and connected homes increasingly behave like software platforms.

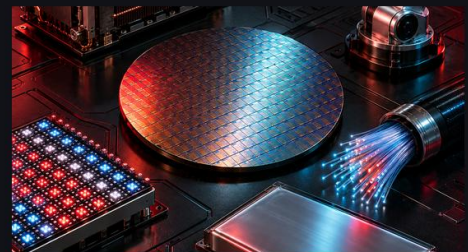
This issue follows those connections—from Korea's industrial technology base to the global competition reshaping AI infrastructure, semiconductors, robotics, displays and consumer electronics.

The numbers show both momentum and pressure. TSMC is setting revenue records as AI demand accelerates. More than five million industrial robots are operating worldwide. Mini LED is gaining ground, while television brands fight for scale and differentiation.

The next phase will not be defined by a single product. It will be shaped by companies capable of controlling multiple layers: silicon, compute, manufacturing, energy, software and distribution.

The system—not the device—is now the real competitive advantage.

THIS MONTH IN NUMBERS



\$46.71B

TSMC Q3 2026 REVENUE

+50%

TSMC YEAR-ON-YEAR GROWTH

5M

ROBOTS OPERATING WORLDWIDE

655,000

2026 ROBOT INSTALLATIONS

48.8M

GLOBAL TV SHIPMENTS · Q2

13%

MINI LED SHARE · Q2



WORLD

GLOBAL

INVESTMENT & POLICY TRACKER

CAPITAL MEETS CONTROL

The AI build-out is accelerating. Regulation and financing are catching up.



THE FOUR MOVES TO WATCH

01 • SEMICONDUCTORS

\$265B

TSMC BUILDS DEEPER IN AMERICA

TSMC's planned investment in Arizona now totals \$265 billion. The programme expands advanced foundry capacity and turns geographic diversification into a long-term industrial strategy.

02 • INDUSTRIAL SOFTWARE

\$22.6B

SCHNEIDER MOVES FOR PTC

SCHNEIDER ELECTRIC agreed to acquire PTC for about \$22.6 billion. The deal links power infrastructure, data centers and industrial software; closing is targeted for Q3 2027.

03 • AI INFRASTRUCTURE

\$175B+

MICROSOFT TAKES SILICON IN-HOUSE

MICROSOFT expects more than \$175 billion in 2026 capital spending and plans large-scale deployment of its Maia 300 AI chip, potentially exceeding one million units in 2027.

04 • DIGITAL POLICY

02 AUG

EU AI TRANSPARENCY RULES APPLY

The EU AI Act's transparency rules are now enforceable. Chatbots must identify themselves, while deepfakes and AI-generated content face disclosure and machine-readable marking duties.

MARKET SIGNAL

\$1.5T possible external AI-infrastructure financing need by 2028

64 GW U.S. data-center capacity forecast for 2026



INVESTMENT & POLICY TRACKER

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INTELLIGENCE • INSIGHTS • GLOBAL CONNECTIONS

OCTOBER 2026

GLOBAL EDITION

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EDITOR'S PICKS

THE SIX THAT MATTER

Six products that move their category forward—not just another specification cycle.



THE 2026 SHORTLIST

01 • MOBILE

APPLE IPHONE 18 PRO

A variable-aperture 48MP main camera pushes computational photography toward real optical control. Stronger battery life makes the upgrade practical.

02 • MOBILE

SAMSUNG GALAXY S26 ULTRA

Agentic AI moves from isolated tools into everyday workflows. Its built-in privacy display also solves a physical, visible problem.

03 • SMART HOME

APPLE HOMEVIEW

\$299 and seven inches: Apple finally gives the connected home a dedicated control surface, built around recognition and the new Siri.

04 • TELEVISION

LG C6 OLED

A mature OLED platform remains the reference point for cinematic contrast, gaming response and a premium living-room experience.

05 • AUDIO

SENNHEISER MOMENTUM TWS

Excellent sound meets a rare sustainability upgrade: user-replaceable batteries extend the useful life of true-wireless earbuds.

06 • CREATOR TECH

DJI OSMO 360 II

A stronger second generation turns 360-degree capture into a more credible everyday tool for travel, action and immersive publishing.

EDITOR'S RULE

A product earns a place here only when its design changes everyday use, category economics or the direction of the market.

SAVE THE AMAZON





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