CES 2025

AI innovations took center stage

Key message

1. Several new AI innovations were demonstrated at the 2025 Consumer Electronics Show (CES), implying that the inference AI trend will expand beyond training AI.

2. Key themes at CES 2025 were: (1) agentic AI with computing performance upgrades; (2) innovation of smart vehicles; (3) companion and pet robots; (4) wearable devices that connect with homes and healthcare technology and enhance reality; and (5) advanced display technology.

3. AI for robotics & smart vehicles, wearables connected with healthcare and smart display upgrades all CES highlights

Event

2025 Consumer Electronics Show (CES). Several new AI innovations were demonstrated at the exhibition, implying that the inference AI trend will expand beyond training AI. Key trends at CES 2025 were: (1) agentic AI with computing performance upgrades; (2) innovation of smart vehicles; (3) companion and pet robots; (4) wearable devices that connect with homes and healthcare technology and enhance reality; and (5) advanced display technology.

Impact

AI evolving from training to inference, agentic, & physical AI, designed for many new applications. Nvidia (US) highlighted the expansion of AI from generative AI to agentic and physical AI, and debuted RTX 5090, 5080, 5070 Ti, and 5070 Blackwell GPUs during its CES keynote address. While Microsoft (US) Copilot searches for answers from big data, agentic AI is a more evolved AI tool that can understand instructions, break them down into tasks, and utilize tools for efficient responses. The firm also released Cosmos, a new foundation model designed to understand the physical world by processing data. By utilizing data about weather, objects, and environmental conditions, developers can perform more customized simulations for robotic designs, autonomous driving, or factory automation, which is an upgrade from Nvidia's Omniverse platform. Some firms are already using this platform, including Uber (US) and XPeng Motors (CN). In addition, Nvidia announced its next-generation Thor automotive processor for robotics and autonomous vehicles. The system utilizes Omniverse and Cosmos technologies, as well as physical-based simulations to create realistic training scenarios. Therefore, AI evolution is ongoing, and we will see inference AI used for many applications and vertical markets in the coming years, such as smarter city planning and climate forecasting. Demand for high-performance GPUs will grow accordingly to help users to improve cost structure. Therefore, AI industry prospects are positive over the next few years.

AI for robotics & smart vehicles. CES also showcased a variety of impressive robotic technology, including robots with silicone "human skin", multi-legged robots, and therapeutic pet robots. These innovations attracted significant attention. Tesla's (US) CEO said its Optimus robot will eventually perform various production tasks in Tesla factories, and may eventually enter households to assist with daily chores. Pet and companion robots will utilize a built-in edge model to learn and use decision-making logic via offline edge computing, after collecting visual, auditory, and tactile interaction data via sensors. Through continuous training and learning, robots will develop their own behavioral characteristics and interaction abilities to become good companions for humans. For automotive, unlike foreign makers that showcased advancezd driving technologies, Taiwan firms demonstrated smart vehicle ecosystems at CES. AUO (2409 TT) highlighted its next-generation smart cockpits, integrating dashboards, central controls, and co-pilot displays via a transparent interface, which provides a clear external view and displays vehicle status, navigation, and road condition information in real-time. Hon Hai's (2317 TT) subsidiary FIH Mobile (HK) participated in CES for the first time this year, with its telematics control unit (TCU) products already receiving orders.

Stocks for Action

Based on the new technology trends demonsted at the show, we think AI in training will gradually engage inference segments, and that agentic AI and physical AI will enhance more AI applications like robotics, smart vehicles and wearable devices in coming years. We are thus positive on the growth outlook for AI in the next couple of years. Near term, new product debuts at CES were mainly for graphics cards, with beneficaries being Asustek (2357 TT), MSI (2377 TT), Gigabyte (2376 TT), and Auras (3324 TT). Other AI applications in robotics will benefit Hiwin (2049 TT), automatic equipment system integrator Solomon (2359 TT) and full-factory automatic system integrator Kenmec (6125 TT). AI application in wearables and smart display will need some time before meaningful market expansion.

Risks

Weak consumer demand; consumer GPU shortages.

AI for smart vehicles. The automotive market is shifting from offering traditional EVs and smart vehicle features to AI. Nvidia and Intel (US) are rushing to join the race. At CES, Nvidia's CEO announced that Toyota (JP) will build its next-generation autonomous vehicles on the Nvidia DRIVE AGX Orin platform, running the Nvidia DriveOS operating system. Leveraging Nvidia's computing power and AI technology, automakers aim to create safer and smarter autonomous vehicles. Additionally, Nvidia unveiled its new Thor automotive processor, which will be integrated with DriveOS into the Aurora Drive autonomous driving system. Intel also introduced a vehicle technology platform, including the adaptive control unit ACU U310 and B-series in-car independent graphics card, along with a large AI model software, power management, and localized controller solutions. One of the applications for AI is autonomous driving technology. In the US, Waymo (US) has been at the forefront of autonomous driving, while Tesla and Uber are actively developing new driverless taxis. Unlike foreign manufacturers that showcased advancezd driving technologies, Taiwan manufacturers demonstrated smart vehicle ecosystems at CES. AUO (2409 TT) highlighted its next-generation smart cockpits, integrating dashboards, central controls, and co-pilot displays via a transparent interface, which provides a clear external view and displays vehicle status, navigation, and road condition information in real-time. Hon Hai Precision's subsidiary FIH Mobile participated in CES for the first time this year, with its telematics control unit (TCU) products already receiving orders. The firm plans to expand its presence in related markets.

Wearables can connect with healthcare technology; smart display upgrades another highlight. The light weight and multifunctional characteristics of AI smart glasses are key to future development. Smart glasses can provide real-time translation and navigation guidance, with some devices also integrating health and medical functions to offer digital healthcare features. Many brands have launched AI-powered smart glasses and waveguide technology-based smart glasses. Most of these devices feature capabilities such as making phone calls, listening to music, real-time translation, health monitoring, and augmented reality (AR) functions. Regarding the evolution of display technology, Samsung (KR) and LG (KR) both demonstrated transparent displays. Smart display technology is advancing towards Micro LED and Mini LED, both of which offer advantages such as flexibility and low power consumption. These technologies are widely used in automotive displays and high-end televisions.

Figure 1: Peer comparison – Valuations

Sector	Company	Ticker	Related business	Market cap. (US$mn)	Share price (LCY)	Rating	Target Price (LCY)	EPS (LCY)			EPS YoY (%)			PE (x)			PB (x)			ROE (%)			Cash yield (%)	
								2023	2024F	2025F	2023	2024F	2025F	2023	2024F	2025F	2023	2024F	2025F	2023	2024F	2025F	2023	2024F
AI Training & Inference	TSMC	2330 TT	Foundry	841,540	1075.0	Outperform	1,450	32.34	45.48	60.12	(17.5)	40.6	32.2	33.2	23.6	17.9	8.06	6.6	5.3	26.2	30.7	32.7	1.2	1.5
	Mediatek	2454 TT	IC design	67,206	1390.0	Outperform	1,700	48.51	67.16	70.24	(35.0)	38.4	4.6	28.7	20.7	19.8	6.04	5.6	5.2	19.0	27.8	27.1	4.0	5.0
	Hon Hai	2317 TT	ODM	71,913	171.5	Restricted	N.A.	10.25	11.50	14.48	0.4	12.2	25.9	16.7	14.9	11.8	1.59	1.5	1.4	9.7	10.4	12.4	3.1	3.5
	Quanta Computer	2382 TT	ODM	31,540	270.5	Outperform	400	10.29	14.58	19.03	37.0	41.7	30.5	26.3	18.6	14.2	5.61	5.3	4.9	22.3	29.3	35.8	3.3	4.3
	Inventec	2356 TT	ODM	5,415	50.0	Neutral	56	1.71	2.10	2.82	0.0	23.0	34.1	29.3	23.8	17.7	2.93	2.9	2.8	10.2	12.2	15.8	3.0	3.4
	Wistron Corp	3231 TT	ODM	9,007	103.0	Outperform	158	4.08	5.80	8.80	1.7	42.1	51.9	25.2	17.8	11.7	2.87	2.5	2.2	11.4	14.9	20.0	2.5	3.6
	Wiwynn Corp	6669 TT	ODM	13,604	2425.0	Outperform	3,000	68.88	124.76	154.17	(15.0)	81.1	23.6	35.2	19.4	15.7	10.04	5.7	4.9	29.7	36.9	33.3	1.7	2.7
	Pegatron	4938 TT	ODM	7,388	91.9	Neutral	105	5.90	7.00	7.05	4.2	18.7	0.7	15.6	13.1	13.0	1.30	1.3	1.2	8.4	9.7	9.5	4.4	5.0
	Auras Technology	3324 TT	Thermal	1,727	625.0	Outperform	990	14.28	20.95	38.30	(2.7)	46.7	82.8	43.8	29.8	16.3	11.65	7.2	5.8	20.2	26.0	40.1	1.0	1.5
	Asia Vital	3017 TT	Thermal	6,037	516.0	Outperform	885	14.11	21.40	31.61	19.7	51.7	47.7	36.6	24.1	16.3	8.98	7.6	6.1	28.3	34.1	41.6	1.4	2.1
MB/VGA	Gigabyte Tech	2376 TT	MB/VGA	5,258	260.0	Outperform	320	7.46	14.85	17.78	(27.5)	99.0	19.7	34.8	17.5	14.6	4.41	3.6	3.5	12.9	22.5	24.3	2.6	5.0
	Asrock	3515 TT	MB/VGA	823	220.5	Outperform	300	7.54	11.38	15.00	(13.2)	51.0	31.7	29.2	19.4	14.7	3.30	3.2	3.2	11.3	16.9	21.9	3.1	4.7
	Asustek Computer	2357 TT	MB/VGA	13,655	609.0	Outperform	810	21.44	47.81	45.02	8.4	122.9	(5.8)	28.4	12.7	13.5	1.89	1.8	1.7	7.0	14.5	13.1	2.8	5.9
	Micro-Star Intl	2377 TT	MB/VGA	4,680	183.5	Outperform	210	8.92	10.02	14.03	(24.4)	12.4	40.0	20.6	18.3	13.1	3.09	2.9	2.7	15.3	16.4	21.2	2.9	3.3
AI Autonomous & Robot	Hiwin	2049 TT	Linear motion product	3,044	285.0	Outperform	294	5.75	6.84	8.94	(55.7)	18.9	30.8	42.9	36.0	27.6	2.50	2.4	2.3	5.8	6.8	8.5	1.0	1.2
	Solomon*	2359 TT	System Integrator	748	144.5	Not rated	N.A.	3.11	N.M.	N.M.	16.5	N.A.	N.A.	46.5	N.A.	N.A.	4.74	N.A.	N.A.	10.5	N.M.	N.M.	N.A.	N.A.
	Kenmec*	6125 TT	System Integrator	676	88.8	Not rated	N.A.	3.18	N.M.	N.M.	67.5	N.A.	N.A.	27.9	N.A.	N.A.	5.54	N.A.	N.A.	20.9	N.M.	N.M.	1.9	N.A.
AI Wearable (VR/AR)	Largan Precision	3008 TT	Lens	10,697	2655.0	Outperform	3,300	134.13	194.17	183.57	(20.9)	44.8	(5.5)	19.8	13.7	14.5	2.14	1.9	1.8	11.2	14.9	12.8	2.5	3.7
	Genius Elec*	3406 TT	Lens	1,545	454.0	Not rated	N.A.	27.25	40.19	37.45	(6.2)	47.5	(6.8)	16.7	11.3	12.1	2.42	2.1	1.9	15.0	19.8	16.5	2.6	3.5

Source: Bloomberg; KGI Research estimates

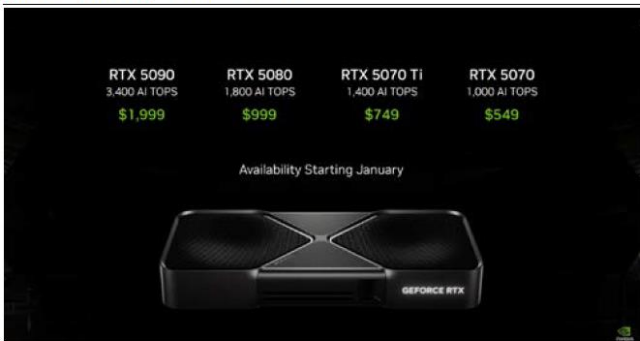**Figure 2: CES 2025 was held in Las Vegas on January 8-11**

Source: KGI Research

Figure 3: Nvidia's latest RTX 5070 provides the same performance as RTX 4090, at one-third of the price

Source: Nvidia; KGI Research

Figure 4: Nvidia to launch four RTX 50 GPU models, with prices starting from US$549

Source: Nvidia; KGI Research

Figure 5: Nvidia introduced new RTX 5070 laptops, with performance the same as RTX 4090, but at half the power

Source: Nvidia; KGI Research

Figure 6: Nvidia introduced RTX50 laptop line up, with prices starting from US$1,299

Source: Nvidia; KGI Research

Figure 7: Nvidia expects agentic AI will apply the 'test-time scaling' law

Source: Nvidia; KGI Research

Figure 8: Nvidia introduced its partners in agentic AI field

Source: Nvidia; KGI Research

Figure 9: Nvidia expects the world foundation model to be the backbone of physical AI via processing of imagine & text tokens and generation of action tokens
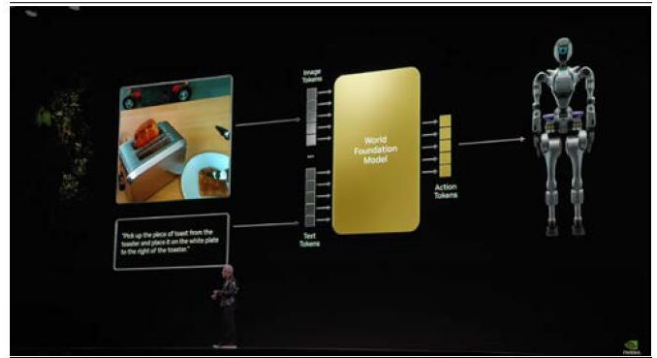
Source: Nvidia; KGI Research

Figure 10: Nvidia explained that robotics are backed by three computer solutions, one for training models, another for deployment and digital twins to connect the two
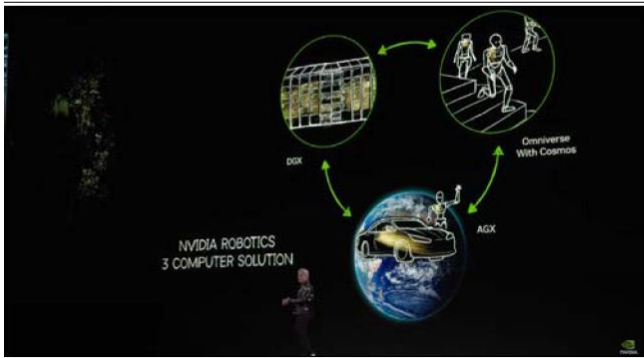
Source: Nvidia; KGI Research

Figure 11: Nvidia expects software-defined & robotics to apply to digital manufacturing in the future

Source: Nvidia; KGI Research

Figure 12: Nvidia unveiled its robotics solutions partner list
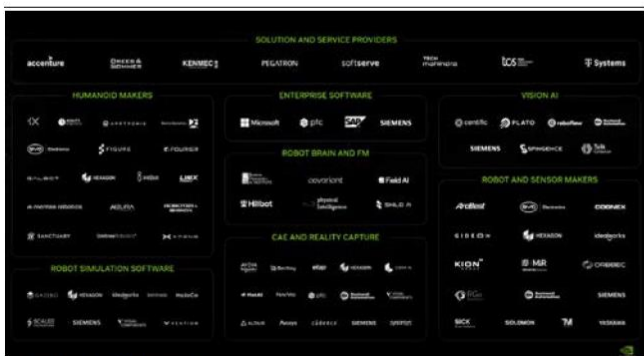
Source: Nvidia; KGI Research

Figure 13: Nvidia is allied with major auto companies in development of autonomous vehicles

Source: Nvidia; KGI Research

Figure 14: Nvidia launched next-generation car computing processor, Thor
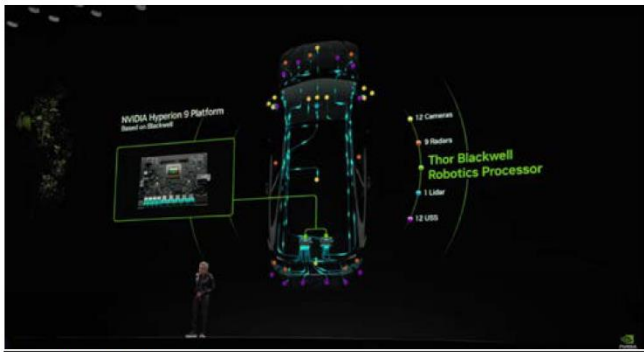
Source: Nvidia; KGI Research

Figure 15: Nvidia showcased latest RTX 50 series graphics cards at CES 2025

Source: Nvidia; KGI Research

Figure 16: Asustek showcased advanced AIO cooler

Source: Asus; KGI Research

Figure 17: MSI showcased RTX 50 series liquid cooling Suprim Liquid graphics cards

Source: MSI; KGI Research

Figure 18: Gigabyte showcased serveral data center server solutions and latest RTX 50 series graphics card

Source: Gigabyte; KGI Research

Figure 19: Mirokai assistant robots, developed by Enchanted Tools, have been deployed in hospitals
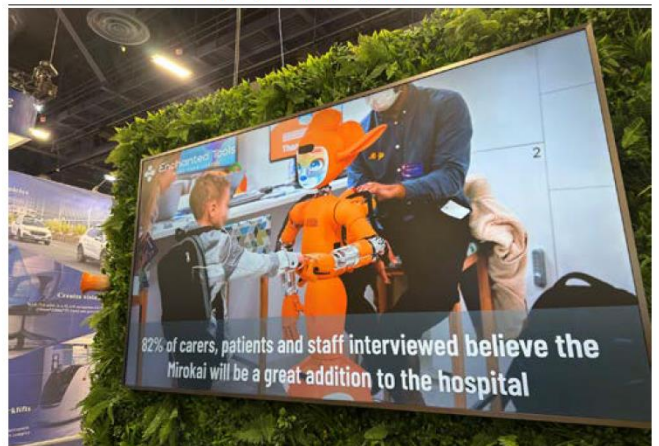
Source: Enchanted Tools ; KGI Research

Figure 20: Mirokai could work as a product advisor in stores
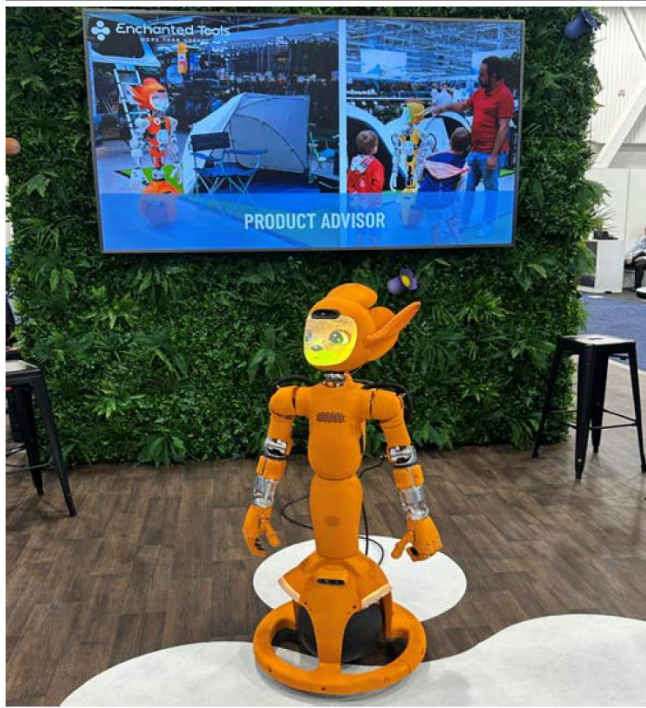
Source: Enchanted Tools; KGI Research

Figure 21: Mirokai could serve as a concierge in the hospitality industry

Source: Enchanted Tools; KGI Research

Figure 22: TomBot (US) unveiled robotic dog Jennie at CES

Source: TomBot; KGI Research

Figure 23: Robotic pets mainly target the elderly with cognitive issues, providing mental support
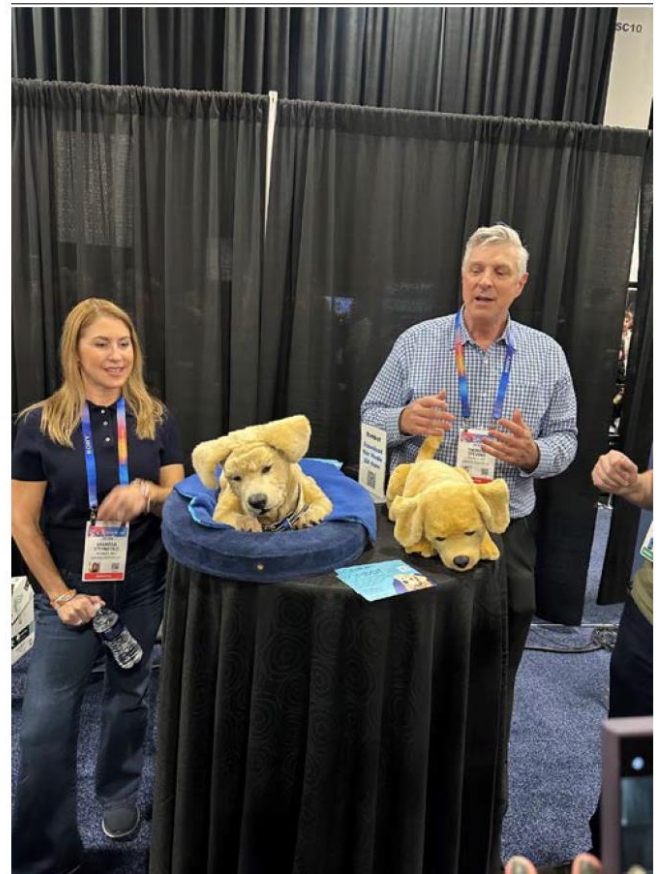
Source: TomBot; KGI Research

Figure 24: Jennie is outfitted with sensors to respond to human touch

Source: TomBot; KGI Research

Figure 25: Ropet is a furry companion robot, with a constant body temperature of 37 degrees Celsius

Source: Ropet; KGI Research

Figure 26: Companion clip-on robot Mirumi can mimic baby-like reactions by head nodding

Source: Yukai Engineering; KGI Research

Figure 27: Withings (FR) launched concept product Omnia, offering expert advise on stress, sleep & athletic performance

Source: Withings; KGI Research

Figure 28: Waymo (US) is a leading autonomous driving developer

Source: Waymo; KGI Research

Figure 29: Waymo showcased new autonomous driving models at CES 2025

Source: Waymo; KGI Research

Figure 30: Xpeng (CN) unveiled modular land aircraft carrier Xpeng Aeroht at CES

Source: Xpeng; KGI Research

Figure 31: Air module of Xpeng Aeroht is stored in the rear cabin of a ground module

Source: Xpeng; KGI Research

Figure 32: Sunny Optical (CN) showcased its robotic vision & AI vision solutions

Source: Sunny Optical; KGI Research

Figure 33: BizLink (3665 TT, NT$593, OP) showcased smart mobility connecting solutions

Source: BizLink; KGI Research

Figure 34: FIH (HK) participated in CES for first time in 2025

Source: FIH; KGI Research

Figure 35: FIH showcased telematics control unit (TCU) products at CES 2025
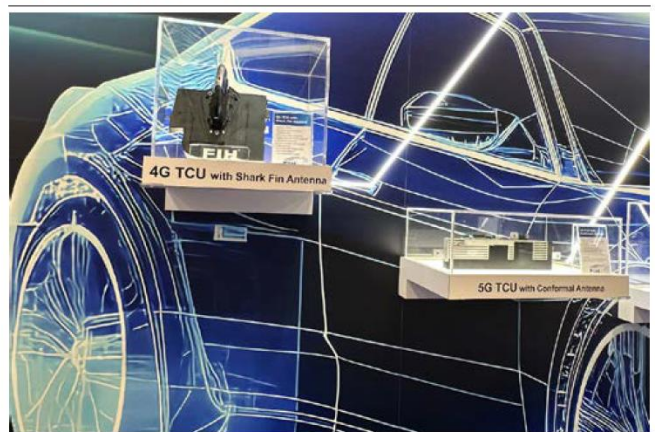
Source: FIH; KGI Research

Figure 36: LG showcased a series of connected 77-inch transparent OLED displays

Source: LG; KGI Research

Figure 37: LG's transparent OLED TV
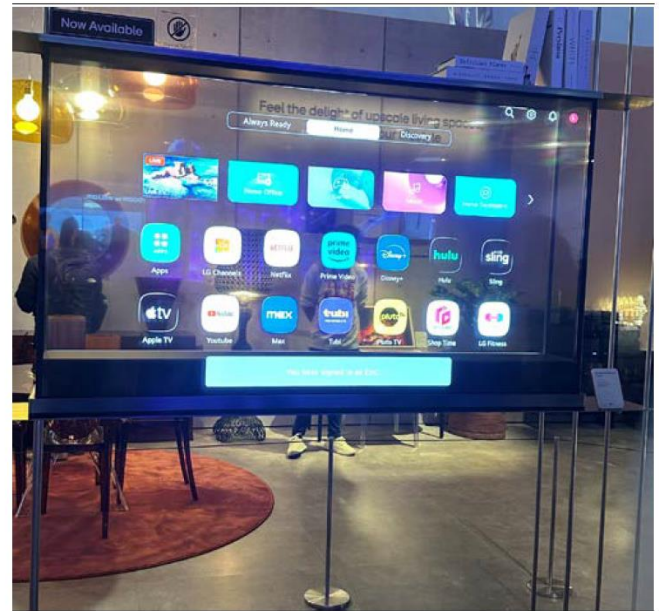
Source: LG; KGI Research

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