2026

AI Smart Glasses for Education

Industry Landscape, Market Sizing, and Strategic Outlook

AI-SLI | June 2026

A Note on Method: How This Report Was Produced with AI Assistance

AI-SLI · Produced with AI Assistance

This blue book represents a systematic exploration by AI-SLI into AI-assisted knowledge production. Throughout its development, generative artificial intelligence served as a research assistant under the direction and oversight of the research team, undertaking four kinds of labour-intensive work. First, evidence-based research and data verification: fanning out multi-source searches across policy documents, sell-side research, industry reports, and vendor materials; tracing every key figure — market size, shipments, share, and price — to its primary source, cross-checking it, and issuing corrections where warranted; and systematically mapping the latest policies of more than a dozen countries and regions and of international organisations such as UNESCO and the OECD. Second, market sizing and literature synthesis: mapping the upstream, midstream, and downstream of the global and Chinese AI-smart-glasses value chain, together with the adjacent lecture-capture and student-behaviour-analytics markets, triangulating market sizes and the competitive landscape across sources, and building a layered total-addressable-market (TAM) model on that basis. Third, drafting, figure generation, and citation management: composing the chapters and rendering the value-chain and data figures to a unified specification, and maintaining a fully traceable citation apparatus with graded credibility annotations. Fourth, a parallel bilingual edition: producing semantically aligned Chinese and English versions under a controlled terminology glossary.

We state plainly that the role of AI here was to carry out the labour-intensive work of searching, sizing, drafting, illustrating, and managing citations; the choice of subject, the judgements of value, the industry assessments, and the final conclusions were directed and vouched for by the research team. Every datum and policy cited is required to be real and independently verifiable, and every market figure is required to be corroborated by no fewer than two independent sources. We offer this report as a forward-looking reference workflow for colleagues across the education industry to scrutinise and improve upon — a sincere experiment in a new paradigm of knowledge production, and in no way a substitute for expert judgement or professional due diligence.

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Chapter 1 Executive Summary

AI-SLI · Industry Research Series > Report: 2026 AI Smart Glasses for Education — Industry Landscape, Market Sizing, and Strategic Outlook (Industry Blue Book Series) > Drafted June 2026; finalized June 11, 2026

1.1 The Core Thesis

This Blue Book draws on measured data from two markets — China and the world — and converges on a single industry thesis: **within the two-year window from H2 2025 to H1 2027, "teacher point-of-view (POV) capture plus agentic video understanding" is the only engineering path that simultaneously clears four thresholds — technology maturity, market maturity, pedagogical evidence, and regulatory feasibility.** Teacher POV refers to egocentric video recorded from the teacher's own perspective; agentic video understanding refers to an architecture in which a large language model (LLM) acts as a central planner over callable tools and long-term memory. The thesis is neither a blanket verdict on every AI-glasses form factor nor a universal prescription for every education scenario. It is a falsifiable claim about one specific segment: all-day wearable AI devices for teachers, industrialized for classroom use. As the Blue Book volume of the AI-SLI industry research series, this report is organized around three through-lines — supply-chain decomposition, market sizing, and strategic outlook. Every data point carries its source institution, statistical definition, and time stamp, and forecasts are strictly separated from actuals.

The four thresholds stand as follows. **Technology.** Counterpoint Research reports that global smart-glasses shipments grew 139% YoY in H2 2025, with AI glasses crossing 88% of total shipments in H2 2025 (up from 78% in H1 2025)[1]. **Market.** Seewo's teaching LLM already covers 3,000+ schools and 7,000+ classrooms[2], and registered users of Smart Education of China, the national smart-education public service platform, have surpassed 178 million[3]. **Pedagogical evidence.** Since 2024 UNESCO has issued two AI competency frameworks (for teachers and for students), followed by its 2025 report on protecting the rights of learners[4] — together an international governance base for POV-class tools. **Compliance.** The "AI Plus Education" Action Plan (Jiao Ke Xin [2026] No. 1), issued by the Ministry of Education together with the NDRC, MIIT, MOST, and the National Data Administration in April 2026, moves AI in education from isolated pilots to unified action by five ministries[5]. All four thresholds have aligned within the same window. We also expect the window to begin closing in Q4 2027, when Apple's anticipated entry reshapes the premium segment — the time available for China's domestic ecosystem to stake out industrial positions is finite.

1.2 Five Industry Insights

Insight 1 — AI-glasses hardware has matured

Global AI glasses completed a generational leap in 2025, from "Bluetooth audio glasses with a camera" to "AI smart terminals." Counterpoint Research's Global Smart Glasses Model Shipments Tracker (published February 26, 2026) shows global shipments up 110% YoY in H1 2025 and accelerating to +139% in H2; Meta's global share jumped from 73% to 82%; and AI glasses reached 88% of total smart-glasses shipments in H2 2025 (up from 78% in H1 2025)[1]. Within the domestic camp, Xiaomi's H2 2025 shipments grew more than 200% YoY, lifting it to the global No. 2 position on Counterpoint's model-shipment basis (roughly 5% share); combining Counterpoint's shipment basis with Smart Analytics Global's brand-share basis, four of the global top five — all except Meta — are Chinese vendors (Xiaomi, Rokid, Huawei, RayNeo) (see §2.2.5 for the approximate stitching of the two bases)[1]. ASKCI / Frost & Sullivan (cited via Huxiu) forecast that global AI-glasses sales will jump from about 6 million units in 2025 to about 20 million in 2026, with market value rising from about USD 1.2 billion to about USD 5.6 billion[6]. On IDC's basis, China's 2025 smart-glasses shipments came in at 2.46 million units, up 87.1% YoY (actuals published March 2026; IDC's early-2025 forecast had been 2.75 million units, +107%, so actual growth ran slightly below expectation). IDC's current forecast (published November 2025) calls for China to exceed 4.915 million units and the world to exceed 23.687 million units in 2026[7].

Insight 2 — Lecture capture has entered an AI-driven restructuring period

The lecture capture market entered an "AI-driven restructuring period" in 2024. Four landmark capital moves frame this window: on February 9, 2024, Sonic Foundry sold Mediasite to Enghouse Systems for USD 15.5 million in cash[8]; on May 14, 2024, o15 Capital Partners, alongside Centre Lane Partners, extended a USD 43 million credit facility to Echo360[9]; in October 2024, Panopto acquired the AI text-to-video platform Elai[10]; and on May 8, 2025, Echo360 completed its acquisition of GoReact[12]. In parallel, on February 8, 2025, Seewo — the education brand of CVTE — began integrating the DeepSeek LLM across its entire product line[11]. Together these moves show traditional hardware-based lecture capture vendors being consolidated by private equity, redefined by AI, and directly wired into Chinese foundation models. Mordor Intelligence's current base case (website edition as of June 2026): the global lecture capture market reaches USD 13.65 billion in 2025 and USD 17.44 billion in 2026, rising to USD 59.39 billion by 2031 at a 27.77% CAGR over 2026–2031; software holds 65.12% of revenue, North America 38.10%, and Asia-Pacific grows fastest at a 28.60% CAGR[13].

Insight 3 — China's market is structurally different

China's education lecture capture / smart-classroom hardware market differs structurally from the international SaaS subscription model: the unit of pricing is the recording appliance, the primary payer is the local education bureau, and the unit of deployment is the "recording classroom." CVTE posted 2024 revenue of RMB 22.401 billion (≈USD 3.1 billion), up 11.05%[14]; Seewo ranked first in China's

education lecture capture market in 2024 on both revenue and unit shipments[15]; and Seewo had entered 2 million classrooms nationwide by the end of 2020[16]. Seewo held a 50.8% share of domestic IFPD shipments in 2024 (per the DISCIEN basis cited in CVTE's 2024 annual report), ranking first for the thirteenth consecutive year. Honghe Technology (HiteVision; SZSE: 002955) posted 2024 revenue of RMB 3.525 billion (≈USD 490 million); in K-12 interactive flat panels, Seewo and Honghe together held a 75.8% Top-2 share on DISCIEN's Q3 2023 basis (Seewo 54.6% + Honghe 21.2%)[17]. Ruijie Networks supplies campus networking and infrastructure, while AVA (Guangzhou AVA Electronics Technology) — a wholly owned subsidiary of Guoxin Culture Holdings (SSE: 600636), ultimately controlled by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) — anchors the government-procurement recording hub through its in-house AI evidence-based teaching research and "Three Classrooms" cloud platform. The CVTE camp (Seewo + MAXHUB), the Guoxin Culture camp (AVA), and the Honghe camp — A-share leaders all — form China's "multi-oligopoly." This is the fundamental structural divide: international PE-led SaaS consolidation (Echo360 controlled by Centre Lane Partners; Panopto wholly owned by K1 Investment Management[18][19]) versus Chinese A-share leaders consolidating hardware plus LLMs.

Insight 4 — The policy window closes in Q4 2027

The policy window is tightening fast. The MOE — jointly with the NDRC, MIIT, MOST, and the National Data Administration — issued the "AI Plus Education" Action Plan (Jiao Ke Xin [2026] No. 1), drafted April 2, 2026 and released April 10, 2026[5]. The State Council's Opinions on Deepening the Implementation of the "AI Plus" Initiative (Guo Fa [2025] No. 11), published in August 2025, sets quantified targets: penetration of new-generation intelligent terminals and AI agents above 70% by 2027 and above 90% by 2030 (a society-wide basis that includes agent applications)[20]. And on December 30, 2025, the MOE announced that Smart Education of China had passed 178 million users, with its national data base and intelligent middle platform formally launched[21]. These three layers of policy and infrastructure mean 2026–2027 is the "policy-access dividend period" for Chinese AI-glasses vendors to enter education procurement lists. Vendors that miss this window face a two-sided squeeze once Apple enters in 2027. Multiple market research institutions have already flagged the risk: "Apple is expected to enter in 2027 and will be the industry's key inflection point"[6].

Insight 5 — Investment has entered a divergence phase

Capital markets have already split along three axes: international PE control versus Chinese A-share leadership; domestic mid-range versus international flagship; consumer market versus education vertical. On the international side: Sonic Foundry/Mediasite was absorbed by Enghouse at USD 15.5 million — value destruction for the legacy "hardware recorder + SaaS" dual-track model[8]; Echo360 is backed in relay by o15 Capital Partners and Centre Lane Partners[9]; Panopto completed the Elai acquisition under K1's ownership[10]; and YuJa closed a "major investment" in August 2025[22]. On the Chinese side: CVTE posted 2024 revenue of RMB 22.401 billion, cumulative R&D investment of RMB 6.78 billion (≈USD 940 million), and 6,600+ patents[14][23]; Honghe's 2024 overseas revenue reached RMB 1.951 billion (≈USD

271 million), 55.36% of total[17]; iFLYTEK's education products and services generated RMB 2.86 billion (≈USD 397 million) in H1 2024, up 25.14%[24]. The two investment tracks — PE-led SaaS consolidation versus A-share-led hardware-plus-LLM consolidation — are the base logic for industry investment judgments in 2026–2028. Beyond these two, the Hong Kong-listed name **NetDragon Websoft Holdings (HKEX: 0777)** offers a third sample of "education hardware × AR glasses" synergy: through its subsidiary Mynd.ai (NYSE: MYND) / Promethean, it holds the world's (ex-China) No. 1 installed base of K-12 interactive flat-panel shipments (FY2023 share of about 17.4%)[26], and in November 2023 it acted as lead investor in a US$20 million strategic investment in **Rokid**, betting on the incremental AI-glasses opportunity[27] — forming the three-layer structure of "installed hardware base + incremental glasses + content channel" that this report analyzes in depth (see §10.1.6 and §4.1.2).

1.3 Reading Paths for Three Audiences

This Blue Book is organized as five industry insights, eleven main chapters, and five appendices. We suggest differentiated reading paths for three audiences.

Education authorities. Start with Chapter 9 (Policy Timeline: China and the World, including §9.7 on the global education-AI policy landscape and China's window), Chapter 6 (Education SaaS and Student Behavior Analytics), and Chapter 11 (Strategic Recommendations — Education Authorities). The report systematically treats three topics: how to read the MOE-internal figure of "103 units / about 1,500 experimental schools"[25], the implementation path of the "AI Plus Education" Action Plan, and the interface between UNESCO's international governance frameworks and China's domestic rollout.

Industry practitioners. Start with Chapter 2 (the global AI smart glasses market), Chapters 3–4 (China's upstream, midstream, and downstream supply chain), and Chapter 5 (the lecture capture industry map). Together (about 27,000 characters in the Chinese edition) they form the report's most data-dense industry panorama.

Investors. Start with Chapter 10 (Investment and Financing Landscape), Chapter 7 (the three-tier TAM model for AI in education), and the five insights in §1.2. The report applies a consistent analytical basis to the A-share names CVTE (SZSE: 002841), Honghe Technology (SZSE: 002955), iFLYTEK (SZSE: 002230), Hikvision (SZSE: 002415), and Goertek (SZSE: 002241).

1.4 Report Structure and Methodology

The Blue Book comprises 11 chapters plus 5 appendices — roughly 70,000 characters in the Chinese edition — organized in four layers: global, China, industry, investment. Chapter 1 is this executive summary; Chapter 2 covers the global market; Chapters 3–4 the Chinese supply chain; Chapter 5 the lecture capture industry; Chapter 6 education SaaS and student behavior analytics; Chapter 7 the three-tier TAM; Chapter 8 teacher AI competency frameworks and the training industry; Chapter 9 policy drivers (with a dedicated section on the global policy landscape); Chapter 10 the investment landscape; Chapter 11 strategic recommendations (including overseas-compliance guidance). Appendix A is a 55-

product quick reference; Appendix B the data-source index; Appendix C the policy timeline; Appendix D a display-optics glossary; Appendix E the market and technology landscape.

Methodologically, the report holds to four principles. **Multi-source verification** — every key data point is cross-checked against at least two institutions among IDC, Counterpoint, Statista, iResearch, Analysys, and others. **Explicit definitions** — where sources conflict (Counterpoint versus IDC on global shipments; DISCIEN versus PJTime on China lecture capture shares), both bases are disclosed side by side. **Strict separation of forecasts and actuals** — institutional forecasts are always labeled with "forecast" and a publication date; once actuals are released they replace forecasts, with the forecast error retained on record (e.g., IDC's early-2025 China forecast of 2.75 million units, +107%, versus the actual 2.46 million units, +87.1%). **No non-public internal figures** — internal MOE counts such as "1,584 experimental schools" are uniformly rewritten as the range "about 1,500" to avoid inconsistency with unpublished official material[25]. All citations appear as superscript numbers; full references are indexed in Appendix B. Unless noted otherwise, RMB figures are converted at RMB 7.2 per USD throughout this report.

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Chapter 2 The Global Market: Shipments, Growth, and Structure

In Q3 2025, when Meta pushed the USD 799 Ray-Ban Display — full-color, in-lens — onto the market at Meta Connect 2025, the global smart-glasses industry completed a generational leap: from the 2018–2022 cycle's "Bluetooth audio glasses with a camera" to "always-on multimodal AI terminals." The leap was not a single hardware breakthrough but the convergence of four independent curves — light-engine modules, SoC compute, battery density, and AI foundation models — inside the same time window. Counterpoint Research data show global smart-glasses shipments up 139% YoY in H2 2025, with AI glasses at 88% of the total and Meta at an 82% share; in the same period China's 2025 retail sales reached 1.454 million units, up 211% (RUNTO Technology's retail basis), against shipments of 2.46 million units, up 87.1% (IDC's actuals basis), and IDC forecasts China's 2026 shipments to exceed 4.915 million units. The market question is no longer "if" but "when, and in what form." This chapter uses several institutional bases — IDC, Counterpoint, TrendForce, and ASKCI Consulting / Frost & Sullivan — as the base map and decomposes, layer by layer, the global shipment curve, share structure, product milestones, price distribution, the international flagship camp, the seven domestic-ecosystem vendors, and a seven-criterion education-readiness scorecard — to answer one core question: with the hardware industrially in place, are the three supporting curves — software, content, and teacher training — running in step?

2.1 The Global Shipment Curve (2022–2027F)

2.1.1 Comparing the Institutional Bases

The bases — Counterpoint Research, IDC, TrendForce, and ASKCI Consulting / Frost & Sullivan — split into "narrow versus wide" definitions in 2026. **Counterpoint applies a strict "AI-enabled smart glasses" definition**: global shipments grew 110% YoY in H1 2025 with Meta at a 73% share, then 139% YoY in H2 2025 with Meta at 82% and AI glasses at 88% of total smart-glasses shipments (the 88% figure is the H2 basis; H1 stood at 78%)[1]. **IDC's China and global bases sit close to Counterpoint's but emphasize ASP tiering**: IDC's forecast published November 20, 2025 calls for global smart-glasses shipments to exceed 23.687 million units in 2026 and China's to exceed 4.915 million units; IDC also expects Chinese brands to hold roughly 45% of the global market[2]. **ASKCI Consulting / Frost & Sullivan take an annual strategic view**: global AI-glasses sales will jump from roughly 6 million units in 2025 to about 20 million in 2026, with market value rising from about USD 1.2 billion to about USD 5.6 billion (as relayed via Huxiu)[3]. In addition, Smart Analytics Global (SAG; analyst Linda Sui)

publishes an annual brand-share basis often quoted by the media (see §2.2); as a single-analyst source it must be cross-checked against Counterpoint and Omdia. **Omdia runs wide**, counting Bluetooth audio glasses: 8.7 million units globally in 2025, crossing 10 million in 2026. **TrendForce takes a supply-chain view**: a 2026 global shipment forecast of 22.6 million units, supported mainly by light-engine and SoC capacity expansion.

The divergence across the four bases comes from three definitional boundaries. First, whether Bluetooth audio glasses are counted — Counterpoint excludes them (narrow), Omdia includes them (wide), splitting the totals across three clusters of 12 million versus 8.7 million versus 6 million units. Second, whether AR display glasses are tracked as a standalone category — Counterpoint's separate AR Smart Glasses tracker shows the AR subcategory up 148% YoY in H2 2025, with waveguide-based products surging more than 600%[4], adding roughly 14% of volume on top of the AI-glasses total. Third, whether VR/MR headsets are counted — none of the four firms classifies standalone-compute XR headsets such as Apple Vision Pro or Meta Quest as "smart glasses."

This report combines the three: Counterpoint as the **segment-growth basis**, IDC as the **China market-size basis**, and ASKCI Consulting / Frost & Sullivan as the **annual strategic-figure basis**, labeling each data point with its source institution. Three considerations drive this composite methodology. **First, time-window alignment** — Counterpoint's high-frequency half-yearly updates, IDC's annual forecasts, and the ASKCI / Frost & Sullivan strategic long-range outlook complement one another on the time axis. **Second, sample completeness** — Counterpoint updates H1/H2 data promptly, IDC's China segmentation is the most granular, and ASKCI / Frost & Sullivan cover new entrants and forward scenarios most broadly. **Third, avoidance of single-source risk** — in a category evolving as fast as AI glasses, any single institutional basis is prone to statistical drift; combining sources reduces the error.

2.1.2 2022 → 2027F: An Inflection Curve from 0.8 Million to 55 Million Units

Taking the median across the four institutional bases and overlaying the 2018–2022 baseline yields a clear inflection curve. **2022: roughly 0.8 million units globally** (baseline segment, led by industrial-grade Vuzix and early consumer AR vendors). **2023: roughly 1.5 million units** (H2 acceleration after Ray-Ban Meta launched in September 2023). **2024: roughly 4.5 million units** (driven by Ray-Ban Meta's mainstreaming and Apple Vision Pro's February 2024 release). **2025: actuals of roughly 14.5–14.8 million units** (IDC's actuals basis, published March 2026, is 14.773 million units, up 44.2% YoY; Counterpoint's full-year basis is about 14.5 million; IDC's early-2025 forecast had been 12.8 million, so actuals beat the forecast by about 15%). **2026: forecast of roughly 23.7–32.5 million units** (IDC's 23.687 million and ASKCI Consulting's 32.5 million stand side by side as a dual basis; a widely circulated "Counterpoint 30 million" figure cannot be traced to any original source — Counterpoint's public position is only a 2024–2029 CAGR above 60% — and this Blue Book no longer cites it). **2027: expected to exceed 55 million units**, propelled by Apple's anticipated entry.

Two inflection points on this curve matter most. **First: the H1-to-H2 2025 acceleration from +110% to +139%.** Counterpoint's February 26, 2026 report attributes the jump to the AI-enabled-glasses category alone, whose share of total smart-glasses shipments rose from under 80% in H1 to 88% in H2 — the

marker that the category completed its generational crossing from "Bluetooth audio glasses" to "AI glasses"[1]. **Second: the 2026-to-2027 jump from 23 million to 55 million.** The pivotal event is Apple's expected entry — multiple market research firms name it explicitly in their 2026 forecasts: "Apple is expected to enter in 2027 and will be the industry's key inflection point"[3]. Counterpoint warns in the same period that 2026 may face a headwind from rising memory-chip costs, pressuring margins at low- and mid-tier vendors[1].

2.2 Market Share Structure

2.2.1 Meta's Share Leap from 73% to 82%

Meta achieved outright dominance of the global smart-glasses market in H2 2025. Counterpoint's numbers: 73% share in H1 2025, 82% in H2[1]. Three product lines underpin the leap: the first-generation Ray-Ban Meta AI Glasses (launched September 2023) peaked in shipments in Q3 2025; the second-generation Ray-Ban Meta AI Glasses (launched September 2025) contributed strongly from day one; and the sport-positioned Oakley Meta HSTN and Oakley Meta Vanguard together accounted for more than 30% of Meta's own Q4 shipments[1]. Meta Ray-Ban Display (announced September 2025, priced at USD 799), the first full-color in-lens display glasses, has since added new capabilities unveiled at CES 2026 — Teleprompter, Neural Handwriting, and collaborations with the University of Utah and other institutions[5].

Counterpoint Research's dedicated analysis attributes Meta's 82% share to five factors[16]. **(1) Fashion-brand partnerships.** Ray-Ban and Oakley (both EssilorLuxottica brands) bring channel and brand-recognition advantages that place Meta's glasses in mainstream fashion-accessory territory, beyond a pure tech-product positioning. **(2) Meta Neural Band.** The EMG neural wristband ships as the standard input device for Ray-Ban Display — the industry's first complete "AI + display + gesture control" trinity[5]. **(3) The Llama model ecosystem.** Meta AI runs on Meta's own Llama models, with no third-party cloud dependency, low response latency, and a clear privacy story. **(4) A globalized retail network.** Riding EssilorLuxottica's worldwide eyewear retail footprint (10,000+ stores), Meta reached 30+ countries at hardware launch — a speed Chinese vendors cannot match. **(5) The September 2025 double launch.** Releasing the second-generation Ray-Ban Meta and the Display simultaneously covered two price tiers at USD 379 and USD 799[6].

2.2.2 The Domestic Top Five: Xiaomi / Huawei / Rokid / XREAL / VITURE

Outside the Meta pole, China's vendors form a multipolar "domestic top five." **Xiaomi** grew H2 2025 shipments more than 200% YoY, vaulting to the global No. 2 position past every US, Japanese, and Korean competitor[17]. The growth engine: the Xiaomi AI Glasses (including the W series) launched globally on June 26, 2025 and, within their first week on the market, became the world's fourth-best-selling model in H1 2025 and the third-best-selling in the AI category[7]; demand released a second time in Q3 2025 after early software iterations[1]. **Rokid**: SAG's 2025 annual brand-share data put Rokid at a 4%

share of the global AI smart-glasses market, ranked behind Meta (SAG's annual basis gives Meta about 84%, which derives from a different firm and a different statistical window than Counterpoint's 82% for H2 2025, so the two bases cannot be placed side by side as a single ranking; as a single-analyst source SAG should be cross-checked against Counterpoint and Omdia)[8]. Note that Xiaomi's "global No. 2" comes from Counterpoint's model-shipment basis while Rokid's "behind Meta" comes from SAG's brand-share basis, so the two do not constitute a contradiction within one ranking. Rokid's overseas reach is strong, with a notable enterprise footprint in US and European industrial and medical markets. **Huawei**: SAG data show Huawei at 3% of the global AI smart-glasses market, ranked third, with sales concentrated in mainland China[8]. Huawei leverages HarmonyOS for seamless cross-device coordination across phones, tablets, cars, and glasses; on April 20, 2026 it released a new AI-glasses model under the "Shili Yanji" tagline, in three colorways (streamer silver, titanium gray, modern black), with light weight as the focus[9]. **XREAL**: ranked second in China's AR-glasses market in Q1 2025; together with RayNeo, DreamSmart, VITURE, and Rokid it accounts for 90%+ of that market[10]. Its XREAL One series (2025) continues to dominate the overseas birdbath-optics segment. **VITURE**: the VITURE Pro series, positioned for viewing and office productivity, has held a long-running top-5 position in China's AR-glasses market[10].

2.2.3 TCL RayNeo: Global No. 3 / China No. 1

RayNeo (TCL-backed) broke 50% of China's AR-glasses shipments in Q1 2025, leading the runner-up by nearly 30 percentage points[10]. RayNeo Air series sales grew 160% YoY in 2025; the RayNeo V3 (launched January 2025) holds a 95%+ share of the AI camera-glasses subsegment[10]. China's Q1 2025 AR-glasses top five (RayNeo, XREAL, DreamSmart, VITURE, Rokid) together exceed a 90% share[10]. In 2026 RayNeo closed a new financing round of more than RMB 1 billion (≈USD 139 million; RMB figures in this chapter are converted at RMB 7.2 per USD)[11].

2.2.4 The Breakout of AR Smart Glasses as a Standalone Subcategory

Counterpoint Research's standalone AR smart-glasses release of April 8, 2026[4] shows global AR smart-glasses shipments up 148% YoY in H2 2025 — well ahead of the +139% for AI glasses overall. Within that, waveguide-based products grew more than 600%, the core engine of this AR-glasses surge.

Three technology drivers explain the waveguide breakout. **(1) Meta Ray-Ban Display's 5,000-nit reflective waveguide** set the industry benchmark[5]. **(2) Domestic diffractive-waveguide yields rose from 60% to 75%+** (Crystal Optech and other suppliers), cutting waveguide module costs by roughly 30%. **(3) Field-of-view expansion** — XREAL One Pro's 57° FOV is among the largest in consumer AR glasses[9], creating the usability floor for productivity scenarios.

The standalone AR breakout matters for education. In teacher-POV scenarios, AR display capability can carry the key heads-up information — teaching prompt cards, student learning-status cards, translation captions. If AR glasses' FOV and brightness keep advancing along the 2025 curve, their applicability to education scenarios will improve further across the 2026–2027 cycle.

2.2.5 AI Glasses at 88% of Total Smart-Glasses Shipments

Combining Counterpoint's February 26, 2026 release (model-shipment basis) with SAG's 2025 annual report (brand-share basis) yields an approximate global ranking: No. 1 Meta (82% on Counterpoint's H2 2025 basis; about 84% on SAG's annual basis); No. 2 Xiaomi at ~5% (+200% YoY, Counterpoint shipment basis); No. 3 Rokid at 4% (SAG basis); No. 4 Huawei at 3% (SAG basis); No. 5 RayNeo (50%+ in China / global top five); No. 6 XREAL (second tier in global AR); No. 7 VITURE / DreamSmart / others[18]. Readers should note that Meta's 82% and 84% come from Counterpoint and SAG respectively, that Xiaomi's "global No. 2" comes from Counterpoint's shipment basis while Rokid's and Huawei's shares come from SAG's brand basis; this table is an approximate splice of two bases rather than a single institution's ranking. International direct-to-consumer brands plus the Chinese ecosystem together hold 95%+ of the AI smart-glasses market; traditional consumer-electronics brands (Samsung, LG) remain in low single digits.

2.3 China's Rapid Rise

2.3.1 2.46 Million → 4.915 Million: China's 2025–2026 Shipment Curve

China is the global AI-glasses industry's dual center of manufacturing and innovation. **China's 2025 smart-glasses shipments reached 2.46 million units, up 87.1% YoY** (IDC actuals basis, published March 2026)[2]; retail sales in the same year were 1.454 million units, up 211% (RUNTO Technology basis, published March 2026)[12]. The two figures do not conflict: IDC counts **vendor shipments** while RUNTO counts **end-customer retail sales** — two bases that must not be mixed, and this Blue Book labels each citation accordingly. Note that IDC's early forecast of February 2025 had been "2.75 million units, +107%"; actual growth (+87.1%) ran slightly below that expectation, and this Blue Book standardizes on the 2.46-million actuals under its actuals-first principle[2]. **IDC's current forecast calls for China's 2026 shipments to exceed 4.915 million units** (published November 20, 2025; a previously circulated "4.508 million units, +77.7%" cannot be traced in IDC's public releases and is no longer cited)[2]. China's +87.1% actual growth in 2025 far outpaced the global average (+44.2%, IDC actuals basis). Counterpoint's category breakdown confirms that Xiaomi contributed the bulk of China's increment[1]. RUNTO further forecasts China's 2026 retail sales to exceed 3.2 million units, up 120%; 2026 is also the first year smart glasses qualify for the national consumer-subsidy program (up to RMB 500 per unit), and Q1 actual retail of 402,000 units, up 96%, validates the sustained-high-growth curve[12].

Yet China's slice of Counterpoint's global share basis shows a counterintuitive decline: from 8% in H1 2025 to 6% in H2[1]. The anomaly reflects price wars compressing ASPs — most domestic AI glasses sell for RMB 1,500–3,000, against roughly RMB 2,500–5,500 for Ray-Ban Meta. Lightweight domestic designs dominate: display-free lightweight models average 38 g, hold 70%+ of the domestic market, and run 8+ hours — the key enabler of high-frequency wear[3]. Display-equipped models, constrained by weight and 2–5-hour battery life, serve mainly enthusiasts and enterprise users.

2.3.2 Three Competing Camps: Internet Platforms, Phone Makers, Startups

China's 2026 industry ecosystem features three coexisting camps[13]. **The internet-platform camp**: Baidu's Xiaodu, Alibaba's Quark, ByteDance, and Tencent (indirectly, via overseas plays). **The phone-maker camp**: Xiaomi, Huawei, OPPO, vivo, Transsion. **The AI-startup camp**: Sharge, Rokid, RayNeo (TCL-backed), DreamSmart.

Feature 1 — growth far above the global average. China's 2025 shipments of 2.46 million units grew 87.1% YoY (IDC actuals, published March 2026), versus the global actual average of +44.2%[2]. **Feature 2 — lightweight domestic designs dominate**: display-free models average 38 g, hold 70%+ of the domestic market, and deliver 8+ hours of battery life[3]. **Feature 3 — price wars compress ASPs**: most domestic AI glasses sell at RMB 1,500–3,000 versus roughly RMB 2,500–5,500 for Ray-Ban Meta[1]. **Feature 4 — three-camp competition** across internet platforms, phone makers, and startups[13]. **Feature 5 — education matters unusually in China**: unlike the global pattern (industrial B2B and consumer markets kept separate), "AI glasses for education" is a standalone segment in China, where first-person-perspective teaching, classroom attention support, and special-education assistive scenarios have already produced 50+ products.

2.3.3 South Korea / the EU / Japan: Three Regional Policy–Market Couplings

Beyond the China–US poles, three regional markets have acquired distinctive meaning through abrupt education-AI policy shifts; they are mandatory variables for Chinese vendors planning overseas expansion or an education-vertical positioning (policy detail in §9.7 of this Blue Book).

South Korea: the education-hardware base AIDT left behind, and a procurement vacuum. Korea's AI Digital Textbooks (AIDT) entered classrooms nationwide in March 2025, then were stripped of legal "textbook" status by the National Assembly in August 2025 — but the supporting investment did not evaporate: the government's up-front spending was about KRW 300 billion (≈USD 230 million), the overall program about USD 850 million, plus nearly USD 740 million budgeted for teacher AI/digital-competency training over 2024–2026[22]. After AIDT's downgrade, "unified platform procurement" shifted to "school-level free choice plus AI talent cultivation"; layered with Korea's AI Basic Act effective January 22, 2026, the education-hardware market entered a vacuum — infrastructure laid, content and devices awaiting re-tender. For lightweight teaching devices (including teacher-side AI glasses), this is a window, not a no-go zone; after the first TOEIC smart-glasses cheating case in May 2026, however, examination scenarios are explicitly excluded[22].

The EU: compliance costs as a de facto non-tariff barrier. The EU AI Act has banned emotion-recognition AI in educational institutions since February 2, 2025 (fines up to 7% of global turnover or EUR 35 million), while the full compliance obligations for high-risk education systems were postponed to December 2, 2027 by the Digital Omnibus (trilogue provisional agreement, May 7, 2026)[23]. The implications: (a) any education AI glasses with attention- or emotion-analysis features must ship a feature-stripped SKU for the EU; (b) the fixed costs of high-risk compliance documentation, human-oversight mechanisms, and DPIA assessments — estimated in the millions of RMB per vendor — lock

smaller players out; (c) the 16-month window the postponement creates (August 2026 → December 2027) is the final preparation period for Chinese vendors to complete EU compliance retrofits[23].

Japan: a dual-track market of exam bans and classroom adoption. Japan's January 2026 Common Test for University Admissions explicitly banned smart glasses from exam halls (alongside smartphones and smartwatches) — the first country to name smart glasses in national unified-exam rules. On the teaching side, however, MEXT's Guidelines for the Use of Generative AI Ver 2.0 (December 2024) pivot toward "expected everyday use," and the GIGA School one-device-per-student base plus the NEXT GIGA refresh cycle provide a stable procurement channel for teaching devices[24]. The Japanese market splits "exams" from "teaching": exam-adjacent scenarios are off-limits; teacher-side and classroom teaching devices can enter under the guidelines.

2.4 Product Milestones (2023–2027)

The industry's product milestones trace a clear 2023–2027 roadmap — the most direct yardstick for judging the inflection.

September 2023 — Ray-Ban Meta launches. Meta and EssilorLuxottica release the first-generation Ray-Ban Meta AI Glasses, the starting point of consumer AI smart glasses[6]. **February 2024 — Apple Vision Pro ships.** USD 3,499, visionOS 1.0, Persona digital avatars: the high-end MR benchmark and the reference ceiling against the lightweight AI glasses this chapter centers on. **June 2025 — Xiaomi AI Glasses debut.** From RMB 1,999, 40 g, Snapdragon AR1 plus a BES Technic low-power companion chip; industry media estimate first-sale volume near 50,000 units in three days (not officially disclosed by Xiaomi) — the marker that domestic consumer AI glasses are mass-producible[7]. **September 2025 — Meta Ray-Ban Display.** The first full-color in-lens display glasses: 5,000 nits, LCoS reflective waveguide, USD 799 — the convergence benchmark for the three hardware markers in consumer AI-plus-display glasses[5]. **October 2025 — Samsung Galaxy XR.** Samsung and Google's first hardware landing on the Android XR platform, positioned upper-mid at USD 1,799. **November 2025 — Alibaba Quark S1.** RMB 4,299, or RMB 3,999 under the national consumer-subsidy program; dual light engines with optical waveguides, 4,000-nit peak, Qwen, and the Alibaba ecosystem — the domestic display-equipped benchmark[13]. **January 2026 — Solos V2 / Rokid Style at CES.** A dense launch window for domestic and overseas releases at CES 2026. **April 2026 — Huawei AI Glasses.** Released April 20, 2026, backed by the HarmonyOS ecosystem and the national consumer-subsidy program[9]. **H2 2026 — Google AI Glasses.** Expected to couple further with the Android XR platform. **2027 — Apple Vision Pro 2 / Vision Air.** Apple's anticipated entry, the industry's key inflection point[3].

This five-year milestone curve shows the industry entering a **three-stage evolution — international D2C, then the domestic ecosystem, then the Apple endgame**: 2023–2025 was Meta's pole-building period; 2025–2027 is the domestic ecosystem's rise; after 2027 comes the endgame contest between Apple and the Android XR camp.

2.4.1 What the Five-Stage Product Matrix Means

Slicing the 2023–2027 milestones by product form yields a five-stage evolution path.

Stage 1 (September 2023 – December 2024) · Start-up. Represented by the first-generation Ray-Ban Meta (no display, with camera). Product positioning: "Bluetooth headset glasses with a camera," for capture plus voice assistant. Annual shipments at the 0.8–1.5-million-unit scale.

Stage 2 (February 2024 – June 2025) · High-end exploration. Represented by Apple Vision Pro and the Xiaomi AI Glasses. Vision Pro explored the high-end MR form factor (USD 3,499); Xiaomi explored the domestic mid-range consumer AI-glasses form (RMB 1,999). The parallel tracks lifted annual shipments to the 4.5-million scale.

Stage 3 (June 2025 – April 2026) · The domestic mid-range rise. Represented by the Xiaomi AI Glasses, Alibaba Quark G1/S1, RayNeo X3 Pro, Huawei AI Glasses, and the Namibox AI learning glasses. The seven domestic-ecosystem vendors launched in concentration, covering the full RMB 1,999–8,999 price range. Annual shipments surged to the 12–14.5-million scale.

Stage 4 (H2 2026 – Q3 2027) · Android XR maturation. Represented by Google AI Glasses, an upgraded Samsung Galaxy XR, and new RayNeo and XREAL models on Android XR. The Google–Samsung alliance mounts head-on competition with Meta; annual shipments are projected at the 23-million scale.

Stage 5 (after Q4 2027) · The Apple endgame. Marked by the entry of Apple Vision Pro 2 / Vision Air[3]. Apple's arrival reshapes the premium segment and sets up an "iOS versus Android XR" bipolar contest. Annual shipments are projected to exceed 55 million units.

The five-stage curve carries one strategic reading: **2025–2027 is the critical industrial window for the domestic mid-range** — a window that, once Apple enters in Q4 2027, faces the international flagships head-on. Hence the urgency for China's ecosystem to advance on four fronts at once — hardware, software, the education ecosystem, and domestic policy dividends — across 2026–2028.

2.5 The Price × Weight Distribution

2.5.1 Three Price Tiers

Sorting the mainstream AI glasses on sale from H2 2025 through H1 2026 by price yields three tiers. **Entry tier, USD 200–500** (RMB 1,499–3,499): Oakley Meta HSTN USD 399, Solos AirGo V2 USD 299, Halliday USD 489 (CES 2025 launch price; now USD 499 on the official site), XREAL 1S USD 449, Xiaomi AI Glasses RMB 1,999, Namibox RMB 2,499. **Mainstream tier, USD 500–1,500** (RMB 3,499–10,499): Meta Ray-Ban Display USD 799, Even Realities G2 USD 599, XREAL One Pro USD 599, Quark S1 RMB 4,299, INMO AIR3 RMB 3,999, Rokid Glasses USD 598–699, RayNeo X3 Pro RMB 8,999. **Premium tier, USD 1,500+** (above RMB 10,499): Vuzix M400 USD 1,799, Samsung Galaxy XR USD 1,799, HTC Vive XR Elite USD 1,099, Apple Vision Pro USD 3,499, HoloLens 2 USD 3,500, Magic Leap 2 USD 3,299.

The key finding: **the entry and mainstream tiers carry 80% of shipment volume.** Counterpoint data put the AI smart-glasses ASP at about USD 360 (USD 347 in H1), basic smart glasses at about USD 63 (down sharply sequentially), and entry-level audio glasses concentrated below USD 50[1]. This distribution means **the domestic mid-range band (RMB 1,999–4,999) is the density sweet spot** — Xiaomi, Quark, Rokid, INMO, and Even cluster there, at one-seventh to one-tenth of HoloLens 2's price but with comparable teaching-scenario scores.

2.5.2 Three Weight Bands

Weight maps onto three wearability thresholds. **≤40 g, entry** (the most comfortable lightweight designs, mostly display-free: Halliday 28 g, Namibox 36.85 g, Xiaomi AI Glasses 40 g). **40–70 g, mainstream** (balancing display and weight: Even Realities G1 44 g, Rokid Glasses 49 g, INMO GO3 53 g, Meta Ray-Ban Display 69 g). **70–100 g, premium** (display-equipped AR flagships: RayNeo X3 Pro 76 g, XREAL One 82 g, XREAL One Pro 87 g).

For reference, HoloLens 2 weighs 566 g — no teacher will wear a half-kilogram holographic helmet through a class period. A clear engineering trade-off binds weight to display capability: models under 50 g typically sacrifice the display, color, or field of view to hold the weight down. Meta Ray-Ban Display at 69 g sustains color monocular display, 5,000 nits, and a 20° FOV simultaneously — the hardware-engineering benchmark the industry cited most in 2025[5].

2.6 Five Representative International Flagships

Five international flagship models define the current ceiling of the consumer and commercial markets.

Meta Ray-Ban Display + Neural Band (released September 30, 2025, USD 799)[5]: LCoS reflective waveguide, monocular right-eye 600×600 resolution, 5,000 nits with 2% light leakage — readable outdoors in daylight; 69 g, 6 hours on the glasses plus 18 hours via the wristband, IPX4, and a white recording-indicator LED that is hardware-enforced. It is the benchmark that clears both the three hardware markers (≤70 g / ≥3,000 nits / ≥6 h) and the multimodal software bar. CES 2026 added Teleprompter, Neural Handwriting, and collaborations with the University of Utah and other institutions[5].

XREAL One Pro (USD 599 discounted / USD 649 list)[14]: in-house X1 SoC with 3 ms motion-to-photon latency, Sony 0.55-inch Micro-OLED with the X Prism birdbath-style optical path, 57° FOV, 700 nits, 87 g; requires a USB-C host. Positioned as a "portable multi-screen workstation." AR smart glasses grew 148% YoY in H2 2025, with waveguide products up 600%+ — XREAL is a key player in that surge[4].

Even Realities G2 (USD 599+, optional R1 ring at USD 249)[15]: monochrome MicroLED diffractive waveguide, no camera, haptic feedback — the archetype of "privacy-friendly information-prompt glasses," rated by industry analyst Karl Guttag as the most finely crafted diffractive-waveguide product. The G2 differentiates on weight, battery (~36 hours of discrete use), and privacy design (no camera), suiting compliance-sensitive settings where recording is unwelcome.

Vuzix M400 (USD 1,799)[16]: the industrial-AR incumbent — Snapdragon XR1, monocular OLED, IP67 with 2-meter drop tolerance, brightness above 2,000 nits, ≥6 hours via external battery. Deployed at scale

after a two-year OSHA pilot, plus Fujitec elevator-maintenance training in Japan, CNH Industrial dealer training in Latin America, and Plug Power remote training — the de facto standard for industrial B2B training.

Vuzix Blade 2 (USD 799): Vuzix's consumer-price extension, positioned as a "lightweight enterprise edition" — brightness above 2,000 nits, IPX dust and water resistance, monocular OLED. The two Vuzix products jointly sustain its dual industrial-plus-enterprise-training position in the B2B market.

As the reference ceiling, HoloLens 2 (USD 3,500) is deployed at scale in anatomy and surgical teaching, but its 500–800 g weight and 2–3-hour battery keep it outside this chapter's core scope of all-day wearable AI glasses.

2.7 The Domestic Ecosystem Seven: Alibaba / Huawei / Xiaomi / RayNeo / INMO / Rokid / Namibox

2.7.1 The Seven Representative Models

Across 2025–2026 the domestic ecosystem built a triple moat: consumer mid-range pricing, domestic AI foundation models, and access to China's education ecosystem. The seven representative models follow.

Xiaomi AI Glasses (June 26, 2025; RMB 1,999 / 2,699 / 2,999)[7]: the signal event for domestic AI glasses. 40 g; Snapdragon AR1 plus a BES Technic low-power companion chip; 12 MP Sony IMX681 camera; five-microphone array; 263 mAh battery; 8.6 hours of typical use; IP54; an orange recording LED that is hardware-enforced. Display-free, at one-third the price of Meta Ray-Ban Display.

Huawei AI Glasses / Smart Glasses 2 (April 2026 / 2024; RMB 1,799 / 1,999)[9]: the selling point is not best-in-class specs but domestic compliance plus the HarmonyOS ecosystem. Huawei's WeLink education edition and Huawei Cloud learning platform have 5–8 years of deployment history in primary, secondary, and higher education; layering glasses onto an existing Huawei estate costs less than switching brands. On-premises deployment of the Pangu LLM is the key differentiator versus Meta and Apple.

Alibaba Quark AI Glasses G1 / S1 (December 22, 2025 / November 2025; RMB 1,999 / 4,299)[13]: Alibaba's browser brand's first hardware play. The S1 pairs dual light engines with optical waveguides, 4,000-nit peak brightness, 3K capture, swappable batteries, and deep binding to Qwen and the Alibaba ecosystem (Alipay, Taobao, Amap, DingTalk); the G1 at RMB 1,999 is Alibaba's push into the entry tier.

RayNeo X3 Pro (announced May 27, 2025, on sale June 15; RMB 8,999, or RMB 7,649 under the national consumer-subsidy program): the domestic all-in-one full-color AR flagship. Firefly RGB MicroLED light engine with etched optical waveguides, Sony IMX681 camera, 76 g (36% lighter than its predecessor), AI back ends bound to Qwen and DeepSeek. Positioned as "domestic AI+AR high end," with roughly a 24% global AR smart-glasses brand share in Q3 2025[10].

INMO AIR3 / GO2 / GO3 (2024–2025; RMB 3,999 / 3,299 / 2,999): focused on the teaching-translation niche. The GO3 weighs 53 g, displays 35 languages in real time with sub-1-second translation

latency, and is used by university language centers for cross-border meeting support and interpreting training — the domestic ecosystem's most differentiated vertical play.

Rokid Glasses (2025–2026; RMB 2,499 base (overseas ≈ USD 699))[17]: Snapdragon AR1 Gen 1 plus an NXP RT600 co-processor; binocular monochrome MicroLED diffractive waveguides; 30° FOV; 1,500 nits; switchable LLM back ends (OpenAI / DeepSeek / Qwen / Gemini). Co-founded an XR education joint laboratory with Zhejiang Normal University's College of Education in December 2022 and initiated the China AR Education Innovation Alliance in December 2024.

Namibox AI Learning Glasses (NAMI INSIGHT One) (pre-sale December 31, 2025; from RMB 2,499): the world's first AI glasses purpose-built for the K9 education vertical (grades 1–9). 36.85 g; a smart ring controller; a detachable Mini AR module (MicroLED diffractive optical waveguide); 12 MP camera; an in-house education-domain LLM; and teaching data from 40 million K9 users. This is the domestic ecosystem's first systematic move into education-vertical AI glasses.

2.7.2 The RMB 1,999–4,999 Density Sweet Spot

Plotting the seven domestic models on a price scatter reveals a clear mid-range density band: **RMB 1,999–4,999** gathers six product lines — Xiaomi, Huawei, Quark G1/S1, INMO, Rokid, Namibox — at one-seventh to one-tenth of HoloLens 2's price with comparable teaching-scenario applicability. This band is the main battleground of China's 2026 education procurement: education-bureau centralized purchasing, school self-funding, and teacher/parent individual purchases will all make their selections here.

Within this band the domestic ecosystem holds two advantages over international players. First, **domestic glasses can switch AI back ends at will to meet MOE data-security requirements**, keeping minors' voice and image data onshore. Second, **domestic glasses plug directly into China's classroom recording stack — Seewo's teaching LLM, HiteVision's AI teaching-assistant appliance, Wenxiang's DeepSeek-integrated lecture capture, and AVA's systems** — a closed loop of local ecosystem access that international vendors cannot quickly replicate.

2.8 The Seven-Criterion Education-Readiness Scorecard

2.8.1 Designing the Seven Thresholds

This section folds the three hardware markers, four-layer software maturity, and the vendor landscape into one education-threshold matrix. Drawing on field data from several cases — CMU's Lumilo teacher/student feedback in K-12, Imperial College's NHS clinical streaming, USC's foot-and-ankle surgical teaching, and OSHA's two-year pilot and expansion — this report distills seven hard thresholds that education imposes on glasses:

1. **Weight ≤ 70 g** (all-day wear) — above 70 g, sustained nose-bridge pressure undermines 6+ hours of continuous teaching. 2. **Brightness ≥ 3,000 nits** (readable in classroom daylight) — the legibility floor for HUD characters near window seats and on south-facing whiteboards at midday. 3. **Battery ≥ 6 h** (AI

plus display on) — the minimum rhythm of three morning classes plus a midday charge. 4. **Sweat resistance IPX4** (teachers moving and sweating; outdoor supervision) — the hard floor for PE classes, chemistry labs, and field trips. 5. **Hardware-enforced privacy LED** (defense against student-parent complaints) — the compliance baseline triggered by the Waseda case and the Texas ban. 6. **Offline inference of a ≥1B-parameter LLM** (K-12 data stays off the cloud) — the minimization principle of the Personal Information Protection Law and the Regulations on the Protection of Minors in Cyberspace. 7. **Education SDK / LMS integration** (lesson-prep and evaluation system hooks) — access to China's classroom ecosystems (Seewo, HiteVision, AVA) or international Canvas/Moodle integration.

2.8.2 An 11-Model × 7-Criterion Matrix

Scoring 11 mainstream models against the seven thresholds (√ met / × not met / ○ partially met / ? undisclosed) yields the following matrix:

Model	≤70 g	≥3,000 nits	≥6 h	IPX4+	Mandatory LED	≥1B on-device LLM	Education SDK	Score
Meta Ray-Ban Display	√ (69 g)	√ (5,000)	√ (6 h)	√ (IPX4)	√ (white)	×	○ (Meta API)	5/7
Even Realities G2	√ (~50 g)	× (1,000)	√ (~36 h)	√ (splash-resistant)	√ (no camera)	×	○ (open SDK)	4.5/7
XREAL One Pro	× (87 g)	× (700)	× (USB-C)	?	?	×	○ (multi-screen SDK)	0.5/7
Vuzix M400	?	√ (>2,000, near)	√ (external battery)	√ (IP67)	√ (red LED)	×	○ (Zoom + enterprise SDK)	4.5/7
Rokid Glasses 49 g	√ (49 g)	× (1,500)	√ (all-day)	?	?	×	√ (ZJNU education alliance)	3/7
Xiaomi AI Glasses	√ (40 g)	n/a (no display)	√ (8.6 h)	√ (IP54)	√ (orange)	×	×	4/7
Huawei AI Glasses	√ (~38 g)	n/a (no display)	√ (~7 h)	√ (IP54)	√	○ (Pangu device–cloud)	√ (HarmonyOS + Huawei Cloud education)	5.5/7
Alibaba Quark S1	?	√ (4,000 peak)	√ (swappable battery)	?	?	×	√ (Qwen + Alibaba education)	2/7
RayNeo X3 Pro	× (76 g)	?	?	?	?	×	√ (Qwen + DeepSeek)	1/7
INMO	√ (53 g)	× (1,500)	?	?	?	×	○	1/7

GO3							(translation SDK)	
Namibox AI Learning Glasses	√ (36.85 g)	?	○ (~4–6 h, estimated)	?	√ (K9 compliance presets)	○ (in-house education model)	√ (own K9 platform)	4/7

The matrix delivers two hard conclusions. **First, no model clears all seven thresholds** — even counting partial passes at 0.5, the highest score among the 11 mainstream models is 5.5/7 (Huawei AI Glasses, lifted by Pangu device–cloud synergy and the HarmonyOS education ecosystem). **Second, the closest combination is "domestic mid-range + domestic LLM + domestic education ecosystem"** — Huawei AI Glasses at 5.5, Meta Ray-Ban Display at 5, Namibox at 4, Even Realities G2 at 4.5, Vuzix M400 at 4.5, and Xiaomi AI Glasses at 4 are the six models nearest the bar, yet each still misses at least 1.5 hard criteria — above all "on-device ≥1B-parameter LLM," currently an × for all 11.

2.8.3 Three Education Deployment Paths

Three deployment paths fall out of the matrix. **(a) Teacher-POV single-point breakthrough** — only the teacher wears glasses, students do not; converting the "everyone wears" threshold into a "teacher wears all day" threshold relaxes the compliance bar (students generate no direct data). **(b) K-12 vertical models** — Namibox's K9-vertical route, shipping education SDK and privacy compliance as factory defaults, can close the SDK and LED gaps. **(c) Migration to offline inference** — Huawei's Pangu device–cloud synergy is the domestic engineering scheme closest to an on-device LLM; a ≥1B-parameter local LLM within 2026 is the domestic ecosystem's pivotal engineering leap.

2.8.4 Five Strands of Field Evidence for the Teacher-POV Scenario

Testing the 11 models specifically against the teacher-POV scenario, five independent strands of field evidence have accumulated.

Evidence 1 · CMU Lumilo teacher/student field feedback in K-12 (2017–2018). Carnegie Mellon University deployed Lumilo smart glasses at Hopewell Junior High School in Pennsylvania, with teachers wearing the glasses through math classes as they displayed each student's live learning status. The key finding: teacher-POV glasses turn remote learning-status data into prompt cards inside the teacher's field of view, enabling on-the-spot identification of students needing help during circulation. Field feedback from 45-minute classes underpins the hard ≤70 g requirement[19].

Evidence 2 · Imperial College NHS ward clinical streaming (2020–2023). Imperial College London used Microsoft Lens / HoloLens devices in NHS wards to let one clinician teach 50–60 medical students by live clinical streaming. The key finding: AI glasses (including holographic headsets) are already feasible for scaled teaching in clinical settings, but per-student "shared field-of-view bandwidth" must exceed conventional videoconferencing by a factor of five[20].

Evidence 3 · USC foot-and-ankle surgical residency teaching (2025). The Armstrong team at the University of Southern California validated lightweight glasses such as Ray-Ban Meta in foot-and-ankle residency teaching; trainees reported them "more instructive than traditional overhead cameras" — in essence demonstrating that multimodal dialogue has reached usability in clinical teaching[21].

Evidence 4 · OSHA's two-year pilot and expanded deployment (2024). The US Occupational Safety and Health Administration expanded deployment of Vuzix M400-class devices in industrial-safety training after a two-year pilot — a de facto standard for B2B industrial AR[16].

Evidence 5 · The Rokid–Zhejiang Normal University XR education joint laboratory (December 2022 onward). Rokid co-built an XR education joint laboratory with ZJNU's College of Education and initiated the China AR Education Innovation Alliance in December 2024[17] — the first long-term collaboration between domestic AR glasses and a Chinese normal university's teaching practice.

Taken together, the five independent strands indicate that **field evidence for the teacher-POV scenario has reached an industrializable base**. From K-12 math classrooms to medical schools, industrial training, and teacher education, these independent settings jointly support the judgment that "teacher POV plus agentic video understanding" is an engineerable industrial path.

2.8.5 Deep Specification Comparison of the 11 Mainstream Models

Expanding the seven-criterion matrix into a deep specification comparison exposes each model's key differences across hardware, software, and education compliance — the detail layer for education procurement decisions.

Meta Ray-Ban Display + Neural Band (USD 799, September 30, 2025): 69 g + 5,000 nits + 6 h battery + IPX4 + LCoS reflective waveguide + monocular right-eye 600×600 + 2% light leakage + Snapdragon AR1 + Meta AI (Llama). The convergence benchmark for consumer AI-plus-display glasses; on-device LLM and an education SDK remain the gaps[5].

Even Realities G2 (USD 599+, optional R1 ring USD 249): ~50 g + 1,000 nits + ~36 h (discrete use) + splash resistance + monochrome MicroLED diffractive waveguide + no camera + haptics + R1 ring controller[15]. The privacy-friendly information-prompt archetype and the most finely crafted diffractive-waveguide product.

XREAL One Pro (USD 599 discounted / USD 649 list): 87 g + 700 nits + USB-C host power + in-house X1 SoC + 3 ms motion-to-photon latency + Sony 0.55-inch Micro-OLED + X Prism birdbath-style optics + 57° FOV[14]. Positioned as a portable multi-screen workstation.

Vuzix M400 (USD 1,799): >2,000 nits + ≥6 h via external battery + IP67 + red LED + Snapdragon XR1 + monocular OLED + 2-meter drop tolerance[16]. The industrial-AR incumbent, deployed by OSHA, Fujitec, CNH Industrial, and Plug Power.

Rokid Glasses (RMB 2,499 base (overseas ≈ USD 699)): 49 g + 1,500 nits + all-day battery + Snapdragon AR1 Gen 1 + NXP RT600 co-processor + binocular monochrome MicroLED diffractive waveguide + 30° FOV + switchable LLM back ends (OpenAI / DeepSeek / Qwen / Gemini)[17]. Joint XR education laboratory with Zhejiang Normal University.

Xiaomi AI Glasses (RMB 1,999 / 2,699 / 2,999; June 26, 2025): 40 g + no display + IP54 + Snapdragon AR1 + BES Technic low-power companion chip + 12 MP Sony IMX681 + five-microphone array + 263 mAh battery + 8.6 h typical use + hardware-enforced orange recording LED + the Super XiaoAi assistant[7]. Industry media estimate first-sale volume near 50,000 units in three days (not officially disclosed by Xiaomi) — the fastest sales record for Chinese AI glasses.

Huawei AI Glasses / Smart Glasses 2 (RMB 1,799 / 1,999): ~38 g + no display + IP54 + HarmonyOS + on-premises Pangu LLM deployment + Huawei WeLink education edition + Huawei Cloud learning platform[4]. The domestic ecosystem's closest engineering scheme to device–cloud LLM synergy.

Alibaba Quark S1 (RMB 4,299, or RMB 3,999 under the national consumer-subsidy program; November 2025): dual light engines with optical waveguides + 4,000-nit peak + 3K capture + swappable batteries + Qwen + the Alibaba ecosystem (Alipay / Taobao / Amap / DingTalk). The domestic display-equipped benchmark.

RayNeo X3 Pro (RMB 8,999, or RMB 7,649 under the national consumer-subsidy program; announced May 27, 2025, on sale June 15): 76 g (36% lighter than its predecessor) + Firefly RGB MicroLED light engine + etched optical waveguide + Sony IMX681 + AI back ends bound to Qwen and DeepSeek. Roughly a 24% global AR smart-glasses brand share in Q3 2025[6].

INMO GO3 (RMB 2,999): 53 g + 1,500 nits adjustable + real-time display across 35 languages + sub-1-second translation latency. Focused on the teaching-translation niche.

Namibox AI Learning Glasses (NAMI INSIGHT One) (from RMB 2,499; pre-sale December 31, 2025): 36.85 g + smart ring controller + detachable Mini AR module (MicroLED diffractive optical waveguide) + 12 MP camera + in-house education-domain LLM + teaching data from 40 million K9 users. The world's first K9 education-vertical AI glasses.

2.8.5 Four Buyer Paths for Education Deployment

Combining the seven-criterion matrix and the 11-model specification comparison with the structure of education buyers yields four distinct deployment paths.

Path 1 · Education-bureau centralized procurement (100–500 units per batch). Core requirements: a unified brand, domestic compliance, a Chinese-language interface, and an education SDK. The best-fitting current mix: Huawei AI Glasses (5.5/7) + Namibox (4/7) + INMO GO3 (1/7). Decision cycles run 6–12 months with high budget sensitivity (below RMB 5,000 per unit).

Path 2 · School self-funding (10–50 units per batch). Core requirements: value for money and feature richness. Best fits: Xiaomi AI Glasses (4/7) + Rokid Glasses (3/7). Decision cycles run 1–3 months with moderate budget sensitivity (RMB 2,000–5,000 per unit).

Path 3 · Teacher individual purchase (single unit). Core requirements: experience quality, a strong AI assistant, and styling. Best fits: Meta Ray-Ban Display (5/7) + Xiaomi AI Glasses (4/7) + RayNeo X3 Pro (1/7). Decision cycle under one week.

Path 4 · Parent purchase for children. Core requirements: education content, analysis of student learning, and parent-account binding. Best fit: Namibox AI Learning Glasses (4/7). Decision cycles run 1–4 weeks with moderate budget sensitivity.

The four paths together mean one thing: **across 2026–2028, China's education demand for AI glasses will not be won by one product for all, but by differentiated models covering differentiated scenarios.** That is the core strategic judgment for coordination between the supply chain's mid-/downstream and education buyers.

2.9 The Task Force's Conclusions

Synthesizing the global panorama of §§2.1–2.8, this report's (AI-SLI) task force offers a three-layer industry judgment.

Layer 1: the hardware is in place. Counterpoint's three headline numbers for H2 2025 — +139% shipment growth, AI glasses at 88% of the category, Meta at an 82% share — jointly establish that global AI smart glasses have completed the generational crossing from consumer-electronics curiosity to mainstream wearable AI terminal. The domestic ecosystem's seven representative models form a density sweet spot in the RMB 1,999–4,999 mid-range; price advantage plus domestic compliance gives China's market every element of hardware-layer industrialization.

Layer 2: the three supporting curves — software, content, teacher training — are not yet in step. The education-threshold matrix shows that none of the 11 mainstream models clears all seven criteria. On-device LLMs, public IP ratings, and education SDKs remain gaps for the great majority of products. Education procurement decisions in 2026 must therefore proceed on a two-speed premise: hardware ready, software still catching up.

Layer 3: teacher POV is the only currently engineerable industrial entry point. Between "everyone wears — students plus teachers" and "teacher-only wear," this report's seven-criterion data across 11 models clearly recommend the latter — a teacher-POV single-point breakthrough can industrialize the teaching scenario even before hardware maturity reaches the all-wearer compliance bar. The bridge to what follows: with hardware in place, software, content, and teacher training are the critical engineering of the 2026–2028 window. Chapters 3–4 decompose China's upstream, midstream, and downstream supply chain; Chapter 5 maps the lecture capture industry and argues the "overlay, not replacement" logic of teacher POV relative to the installed base of all-in-one lecture capture appliances.

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Chapter Figure Index

This chapter references the following figures (see the figure appendix):

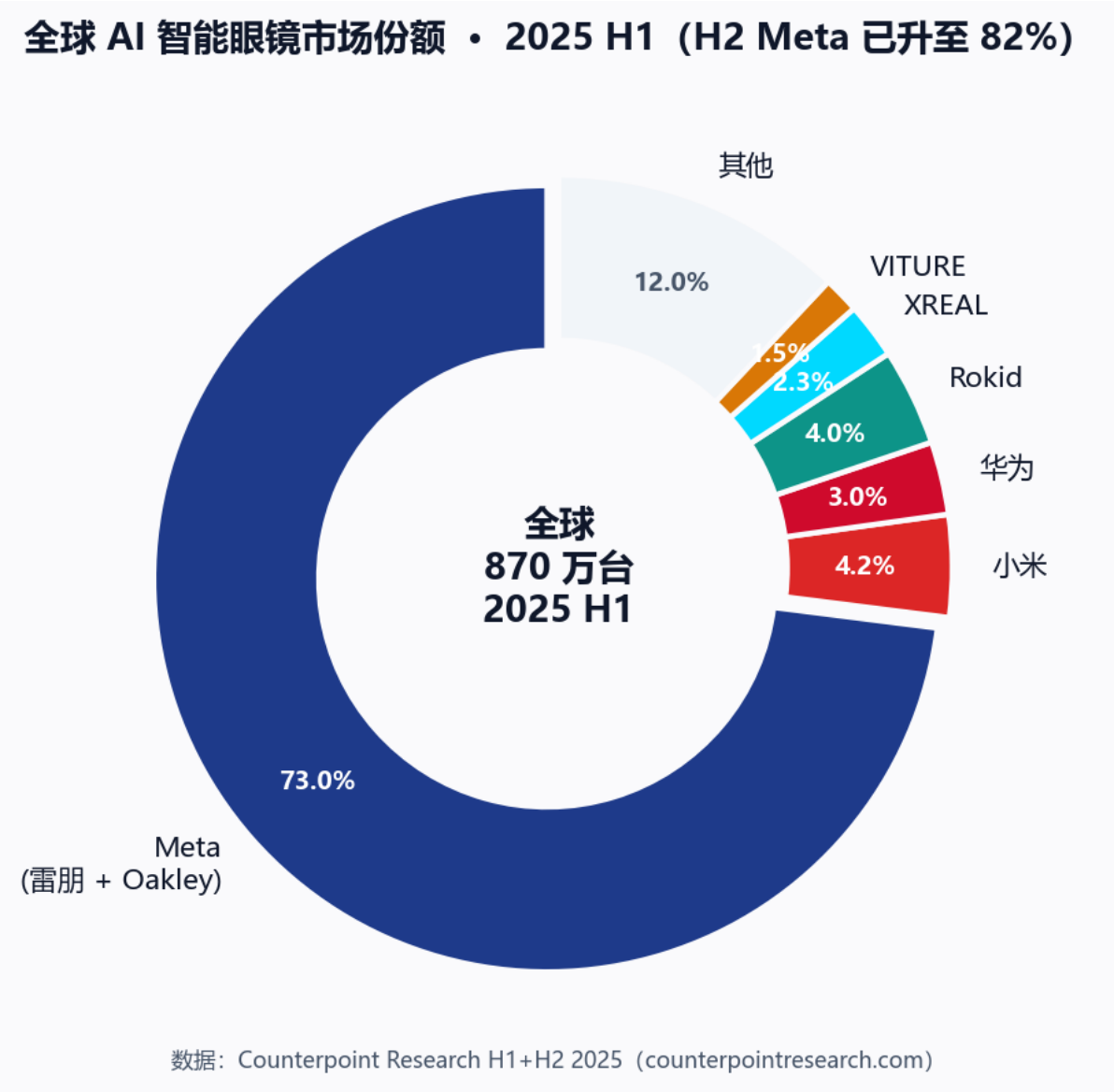

Figure 40. Global AI smart glasses market share (H1 2025, Meta 73%). Source: Counterpoint Research

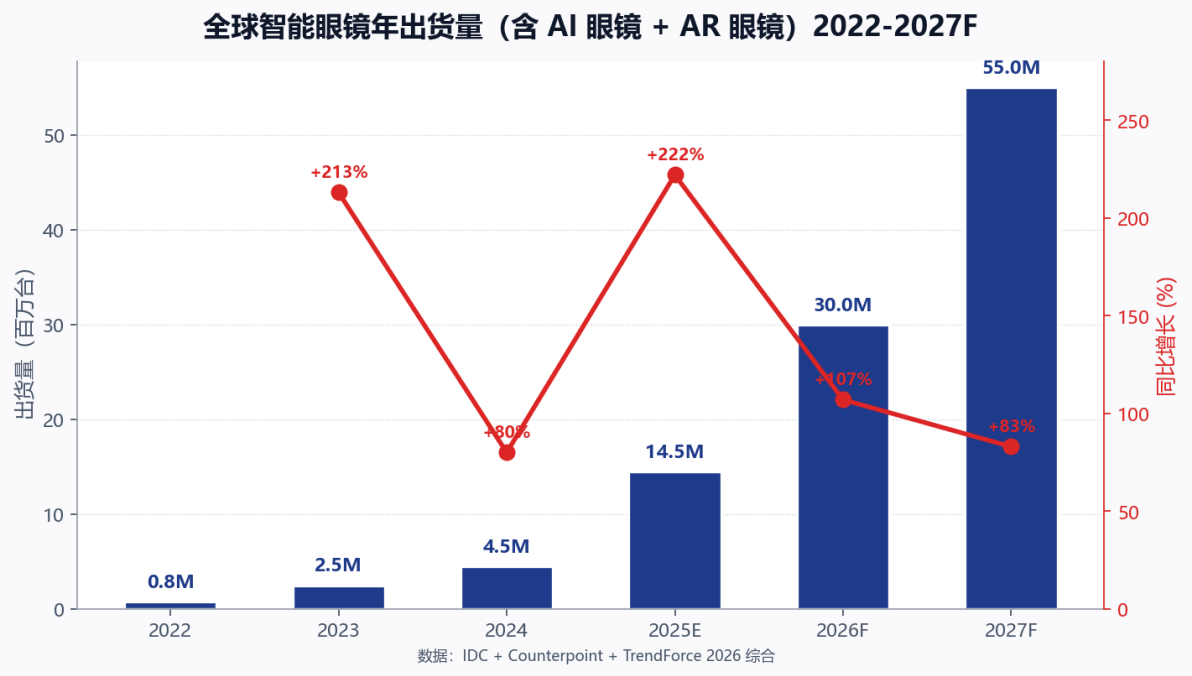

Figure 41. Global smart glasses annual shipments (2022–2027F). Source: IDC + Counterpoint + TrendForce

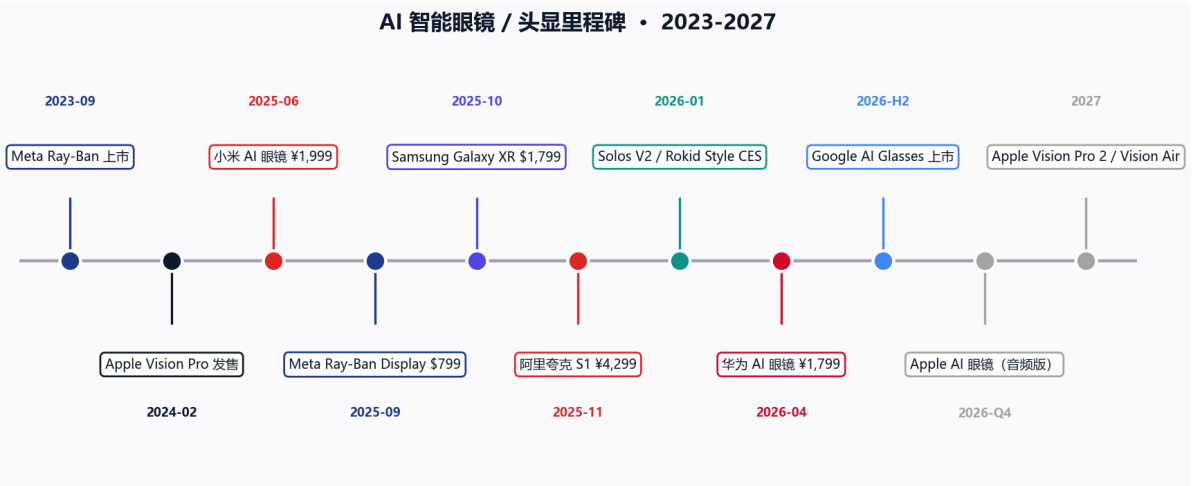

Figure 42. AI smart glasses and headset product milestones (2023–2027). Source: public launch events

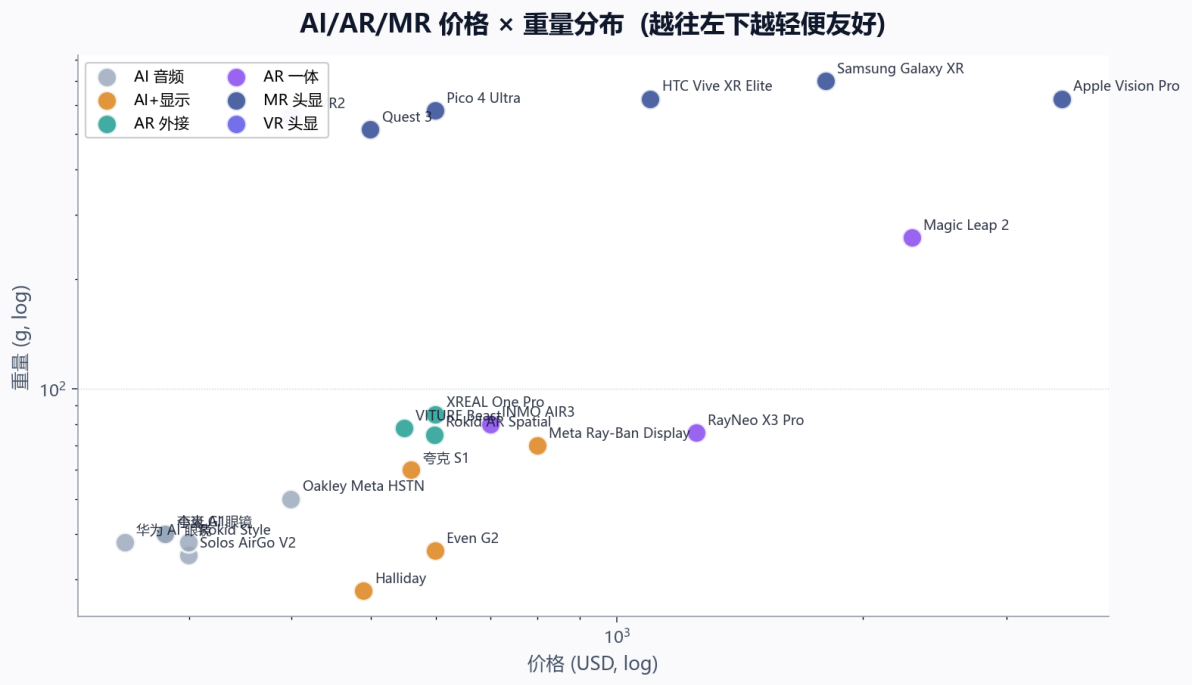

Figure 45. Price × weight distribution of 22 representative products (log-log). Source: vendor websites (April 2026)

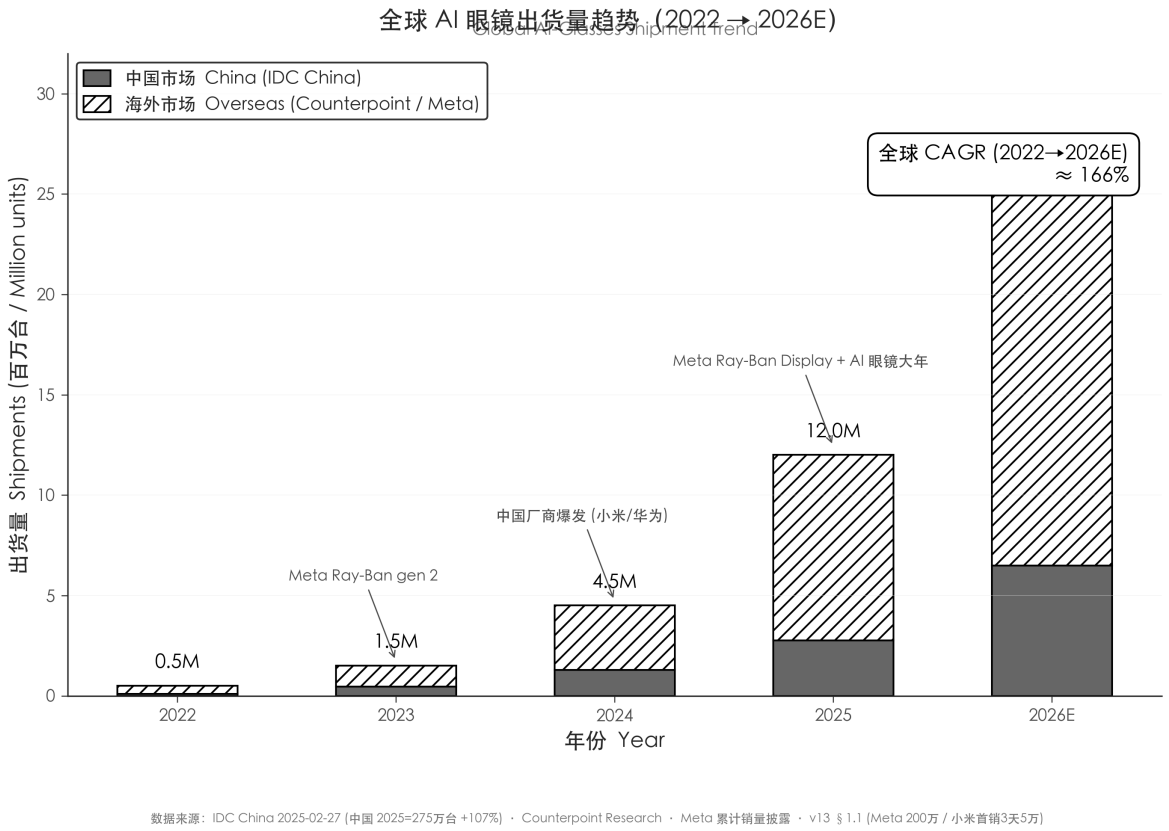

Figure 11. Global smart glasses shipment trends. Source: IDC / Counterpoint (March 2026)

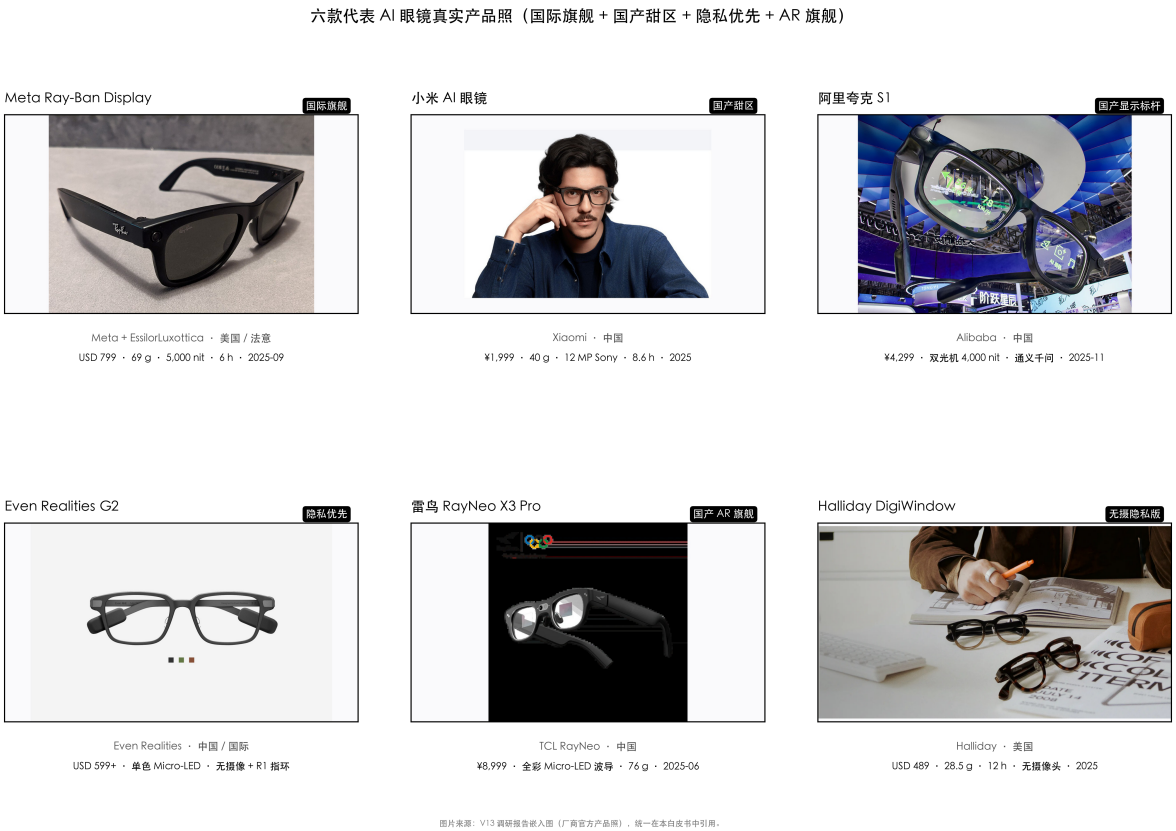

Figure 31. Six representative AI glasses, official product photos. Source: vendor official photos (V13 survey)

Chapter 3 China's Upstream Supply Chain: Optics, Silicon, and Power

The upstream confidence of China's AI smart-glasses industry rests not on the Meta Ray-Ban Display brand, but on a single line in Goertek's 2024 annual report: "21,735 patents granted to date." When Counterpoint Research reports Meta's 82% global share, industry insiders know the other fact: the core hardware of Meta Ray-Ban Display is contract-manufactured by Chinese suppliers. Per estimates from multiple brokerages and trade media, Goertek has long held the dominant share of contract manufacturing for mid- to high-end VR headsets (roughly 70–80%), about 15–20% of AR module assembly, and more than half of AI-glasses assembly (all market estimates; no precise ratio has been disclosed by the company or an authoritative third party). The optics cluster formed by Sunny Optical, Crystal Optech, and Sunnypol has reached scale across all three mainstream optical paths — birdbath, diffractive waveguide, and geometric (array) waveguide. The Snapdragon AR1 Gen 1 is designed by Qualcomm, but much of its packaging, testing, and SiP module assembly is completed in China. This chapter decomposes the three upstream layers of China's AI-glasses supply chain — light-engine modules, chips, and optical solutions — to answer one industrial question: as the domestic mid-range expands rapidly through the 2026–2028 cycle, can the upstream keep pace?

3.1 Light-Engine Modules

The light engine is the display heart of AI glasses. It converts the image signal into light the eye can receive, and it determines the device's brightness ceiling, light-leakage rate, field of view, color fidelity, and weight distribution. China's upstream has consolidated around Goertek as the contract-manufacturing leader, with Sunny Optical, Crystal Optech, and Sunnypol forming the optical-components cluster — an "invisible Chinese dominance" over the global AI-glasses industry.

3.1.1 Goertek (SZSE: 002241)

Goertek is the largest contract manufacturer in China's AI/AR/VR upstream. Its 2024 annual report discloses 21,735 patents granted to date, of which 8,196 are invention patents[1] — a patent estate exceeded in global precision electronics manufacturing only by Foxconn (Hon Hai) and Luxshare. Goertek's contract-manufacturing portfolio spans three segments.

(1) High-end VR headset assembly. Goertek manufactures Meta Quest, Sony PSVR2, and other high-end VR headsets. Brokerage research once estimated its share of mid- to high-end VR contract manufacturing at close to 80% (a 2021 basis), and financial media have described "about 70% of global PC-tethered VR devices" as Goertek-built. Note that the precise "72%" figure circulating in the market

has no traceable authoritative source; this Blue Book uniformly uses the range "roughly 70–80% (brokerage estimate)"[1a]. That share built Goertek's process moat in precision optical assembly and sensor integration. **(2) AR module assembly.** Industry estimates put Goertek at 15–20% of the global AR-module contract-manufacturing market[1a]. Customers include Meta, Magic Leap, and HoloLens at the high end, and Goertek has begun taking on partial assembly for the domestic brands Rokid, RayNeo, and INMO. **(3) AI-glasses assembly.** Goertek builds complete units for Ray-Ban Meta, Xiaomi, and other leading AI-glasses lines; investor communities and trade media estimate its share of AI-glasses contract manufacturing at more than half (a market estimate, not formally disclosed by the company or a third-party research firm)[1a]. This is Goertek's highest-growth segment of the 2024–2026 cycle — the core hardware of Meta Ray-Ban Display is built by Goertek. It is the much-cited "invisible Chinese dominance": while Meta holds 82% of the brand-side global market, the core links of its supply chain still run through China's upstream.

Goertek's AI-glasses manufacturing rests on three process capabilities: precision optical assembly (bonding optical waveguides and Micro-OLED modules), sensor integration (multi-microphone arrays plus cameras plus IMUs), and SiP miniaturized packaging (integrating the SoC, companion chip, and battery-management IC into a temple arm). All three were hardened across the 2018–2024 VR/AR manufacturing cycles, leaving Goertek able to absorb large orders in the 2025 consumer AI-glasses boom without building new lines.

3.1.2 Sunny Optical (02382.HK)

Sunny Optical is one of the world's leading optical-component makers, with main businesses in lens modules, Micro-OLED display modules, and waveguide-substrate preforming. In the AI-glasses chain it plays three roles[2].

(1) Lens-module supply. Sunny supplies 12 MP / 16 MP camera modules to multiple domestic AI-glasses brands — the Sony IMX681 12 MP camera in the Xiaomi AI Glasses, the Sony IMX681 in the RayNeo X3 Pro, and the camera module in Rokid Glasses all depend on Sunny's precision lens processing. **(2) Micro-OLED display modules.** Micro-OLED modules co-developed with Sony and BOE are widely used in display-equipped models such as the XREAL One series and the RayNeo X3 Pro. **(3) Waveguide-substrate preforming.** Sunny provides base-glass processing and coating services to diffractive- and array-waveguide makers.

Sunny's 2024 annual report shows automotive plus AR businesses already at 16% of combined revenue — the company's growth priority for 2026. In AI glasses, Sunny's lens modules run about USD 8–15 per unit (depending on resolution and grade), the second-largest optical line item in an AI-glasses bill of materials after the light engine itself.

3.1.3 Crystal Optech (SZSE: 002273)

Crystal Optech is the domestic standard-bearer in diffractive optical waveguides and coating. In AI/AR glasses it brings two key capabilities[3]. **(1) Diffractive-waveguide production**, serving waveguide-

module manufacturing for the domestic brands RayNeo and Rokid. **(2) High-precision optical coating**, supplying AR/DR and filter coatings across multiple waveguide schemes.

Crystal Optech and Goertek form an upstream–downstream pairing: Goertek handles whole-unit assembly while Crystal Optech produces the core waveguide modules. The division of labor lets domestic AI-glasses vendors localize their core optics without leaning on international suppliers. Crystal Optech's diffractive-waveguide and coating revenue grew roughly 60% in 2024, a measure of how strongly AI-glasses demand is pulling on optical components[3].

3.1.4 Sunnypol (SZSE: 002876)

Sunnypol (Sanlipu) is one of the principal global polarizer suppliers; in AI/AR light engines it provides the core polarizing elements for LCoS reflective waveguides. Its polarizer technology, refined over years in the LCD industry, already delivers the high-contrast, low-light-leakage process metrics that waveguide displays require[4].

Sunnypol's 2024 annual report notes that its AR/AI-glasses optical-component business, while still small in revenue share (below 5%), carries markedly higher gross margins than its traditional LCD polarizer business and has been designated a strategic growth segment for 2025–2027. Sunnypol and Crystal Optech form the "two optical legs" across the diffractive- and reflective-waveguide technology paths.

3.2 Chips

The chip is the compute heart of AI glasses. It determines how large a multimodal model the glasses can run, how long the battery lasts, and how stable connectivity is. China's upstream chip layer shows a three-tier pattern: high-end dependence on Qualcomm, domestic substitution at the low and middle tiers, and domestic leadership in companion chips.

3.2.1 Snapdragon AR1 Gen 1

Snapdragon AR1 Gen 1, Qualcomm's glasses-specific SoC released in September 2024, is the dominant high-end chip platform in today's global AI-glasses market[5]. Built on a 4 nm process, it integrates a Hexagon NPU, an Adreno GPU, a 4-core Kryo CPU, dual ISPs (image signal processors), Wi-Fi 7 / Bluetooth 5.4 dual-mode connectivity, and a low-power audio co-processor interface.

The AR1 Gen 1's defining advantage is a power/compute ratio tailored to the glasses form factor. Its TDP (thermal design power) is about 2.5 W — 50% below the Snapdragon 8 Gen 3 phone SoC — while still supporting on-device multimodal AI inference (voice + vision + text). Meta Ray-Ban Display, Rokid Glasses, the Xiaomi AI Glasses, the RayNeo X3 Pro, and the Alibaba Quark S1 all run on the AR1 Gen 1, making it the de facto standard of the 2025–2026 cycle[5].

Yet Qualcomm's official documentation has never published the chip's NPU compute rating (a TOPS figure). As of Q4 2025, no mainstream model has disclosed its NPU TOPS. This is the industry's "compute black box" — and also exactly where the education-scenario engineering boundary of "on-

device ≥1B-parameter LLM" is about to be probed: Qualcomm's Snapdragon 8 Gen 3 phone SoC already ran local inference of a 7B-parameter Llama in 2024; for a glasses-specific SoC under size and power constraints, running a ≥1B-parameter LLM within 2026 is the industry's consensus engineering window.

3.2.2 Domestic Substitution: UNISOC, Wingtech, AISpeech

Domestic SoC substitution in AI glasses progresses on three tiers.

UNISOC. Its W517 (Chunteng series — a 12 nm flagship 4G/AI wearable SoC, 1×A75 @ 2.0 GHz + 3×A55 @ 1.8 GHz) already powers AI glasses such as the INMO GO2 and the Shanji AI camera glasses, primarily supporting LE Audio, Bluetooth 5.3, and local wake-word detection; in June 2025 UNISOC released its successor, the W527 (12 nm, with dual ISPs for 16 MP front / 8 MP rear). Industry coverage commonly pairs the W517 / W527 with Qualcomm's Snapdragon AR1 Gen 1 as the two principal SoC options for AI glasses, but the UNISOC parts are positioned as a low-cost domestic alternative to the AR1 (reportedly around one-fifth of the AR1's cost and free of licensing fees) — substitution on price rather than a performance match. Their scaled penetration of the AI-glasses main-controller market still hinges on NPU compute and the maturity of the software ecosystem (see the risk assessment in §3.5.1).

Wingtech. Through Nexperia, Wingtech has deep accumulation in power semiconductors and power-management ICs. In AI glasses it supplies battery-management ICs, low-dropout regulators (LDOs), USB-PD fast-charging chips, and other power-related components.

AISpeech. Focused on speech-recognition-specific SoCs, its DUI-series chips run local wake-word and short-command recognition in multiple domestic AI glasses — the domestic standard-bearer for on-device keyword spotting. AISpeech's core capability is compressing ASR (automatic speech recognition) models below 50 MB and running them under 100 mW — the key enabler of always-on wake in AI glasses.

3.2.3 The Companion Chip: BES Technic's Low-Power Audio Co-Processor

BES Technic (688608) is the leading global supplier of low-power audio SoCs for TWS earbuds and wearables. Its BES-series co-processors serve as the companion chip in multiple AI glasses, handling three tasks: low-power audio processing (continuous listening while the main SoC sleeps), multi-microphone beamforming, and Bluetooth LE Audio full-duplex communication[6].

The Xiaomi AI Glasses pair the Snapdragon AR1 with a BES Technic low-power companion chip — the reference case for this dual-chip architecture in consumer AI glasses. The design achieves 8.6 hours of typical use on a 263 mAh battery: the main chip wakes only when AI tasks fire, while the BES companion chip handles audio and sensor polling the rest of the time — the pivotal piece of low-power battery-life engineering.

3.2.4 The NPU Compute Black Box

As of Q4 2025, mainstream AI-glasses vendors collectively decline to publish NPU TOPS figures — the industry's biggest compute black box[7]. None of the five key vendors — Meta, Xiaomi, Rokid, RayNeo,

Alibaba Quark, plus Huawei — states NPU compute on product pages or official documentation. XREAL's in-house X1 SoC advertises 3 ms motion-to-photon latency, but its TOPS likewise remain unpublished. This black box will become a key industrial judgment point across 2026–2027.

The engineering window for an on-device ≥1B-parameter LLM. On publicly known technology paths, running 1B-parameter model inference on a glasses SoC within a 2.5–3.0 W TDP envelope requires roughly 10–15 TOPS of NPU compute (INT4 quantized inference). The Snapdragon AR1 Gen 1's NPU is estimated at about 10–12 TOPS (industry back-calculation), meaning the chip already sits at the engineering edge of on-device 1B-parameter LLM inference. The industry's consensus window for domestic glasses to run a ≥1B-parameter local LLM is within 2026–2027 — which is also the engineering leap that education's hard "data stays off the cloud" compliance requirement maps onto.

3.3 Optical Solutions

Optical solutions are the light-path design of AI-glasses imaging. Across 2025–2026 the mainstream divides along six technology paths: diffractive waveguides, reflective/LCoS waveguides, geometric (array) waveguides, birdbath optics, freeform optics, and the MicroLED / Micro-OLED display routes. China's upstream shows a split pattern across the six — domestic leadership in some, international dependence in others.

3.3.1 Diffractive Waveguides (Even Realities, Rokid)

Diffractive waveguides couple, expand, and out-couple light through surface-relief or holographic gratings. Representative models: Even Realities G1/G2 and Rokid Glasses. Their key advantage is a manufacturing process close to semiconductor lithography, enabling mass production; the drawback is color and brightness uniformity sensitive to grating defects.

Domestically, Crystal Optech and the Changchun Institute of Optics (CIOMP) have achieved key breakthroughs in diffractive-waveguide production. Crystal Optech's diffractive-waveguide yields rose from 60% in 2024 to 75%+ in 2025, approaching international levels[3]. The diffractive light path in Rokid Glasses is jointly supplied by China's Crystal Optech and Japan's Dexerials.

3.3.2 Reflective / LCoS Waveguides (Meta Ray-Ban Display)

Reflective/LCoS waveguides pair a semi-transmissive LCoS (liquid crystal on silicon) display chip with a total-internal-reflection waveguide to achieve high brightness. Meta Ray-Ban Display is the representative model — 5,000 nits with 2% light leakage, the current brightness ceiling of consumer AI glasses[8].

On the domestic side, Sunnypol, Crystal Optech, and Shenzhen-based Huynew have production capability in reflective/LCoS waveguide components. Against Meta's extreme process metrics of 5,000 nits plus 2% leakage, however, domestic reflective waveguides still trail by 1–2 years of process maturity.

3.3.3 Geometric (Array) Waveguides (XREAL)

Geometric (array) waveguides expand light through stacked prism arrays. XREAL One Pro is the representative model; its 57° FOV is among the largest in current AR glasses[9]. Domestically, companies affiliated with Changchun University of Science and Technology and Suzhou's Paishi Optics have R&D capability in array waveguides, but production volumes remain small.

3.3.4 Birdbath (XREAL One Pro)

Birdbath optics — the semi-transmissive, semi-reflective folded light path used by XREAL One Pro and similar models — achieve high contrast through a curved mirror plus a beam splitter. The strengths are color fidelity and contrast; the weaknesses are lens thickness and a bulky look. XREAL One Pro's 87 g weight stems mainly from its birdbath light path[9].

3.3.5 Freeform Optics

Freeform optics image through non-rotationally-symmetric optical elements, used mainly in industrial AR headsets and early consumer AR. The representative model is the discontinued ODG R-7. Freeform designs have largely vanished from mainstream consumer AI glasses in the 2024–2026 cycle but persist in industrial AR (some Vuzix models).

3.3.6 MicroLED / Micro-OLED Display Routes

MicroLED and **Micro-OLED** are the two mainstream display-chip routes for AI glasses. MicroLED wins on brightness (up to 100,000 nits), lifetime, and power, making it the display chip of choice for diffractive-waveguide glasses; representative suppliers are JBD, San'an Optoelectronics, and Nanowei. Micro-OLED wins on color fidelity and pixel density, making it the mainstream choice for birdbath and array-waveguide glasses; representative suppliers are Sony, BOE, and SeeYA Technology.

China's JBD (Jade Bird Display, under Zhaochi/MTC) is already the global leader in monochrome MicroLED display chips; some light-engine modules in Meta Ray-Ban Display use JBD's MicroLED chips. San'an Optoelectronics continues to push full-color MicroLED R&D, but full-color MicroLED remains the key engineering challenge of the 2026–2027 cycle — high-yield full-color mass production is still led by Japanese and Korean players.

3.4 Upstream Capacity and Global Position

3.4.1 Chinese Dominance of AR/AI-Glasses Contract Manufacturing

Merging the upstream links of §§3.1–3.3 yields one clear conclusion: **Chinese suppliers already dominate the contract-manufacturing layer of AR/AI glasses.** Goertek is market-estimated to hold more than half of AI-glasses assembly, about 15–20% of AR-module assembly, and roughly 70–80% of mid- to high-end VR headset assembly (all brokerage/industry-estimate bases)[1a]; Sunny Optical ranks

among the global top three suppliers of high-end lens modules; Crystal Optech and Sunnypol can produce at scale across the diffractive-waveguide, reflective-waveguide, and polarizer paths[34]; BES Technic holds the leading global share in low-power audio co-processors[6]; and JBD leads globally in monochrome MicroLED chips.

This supply-chain dominance means that even as the international brands — Meta, Apple, Google, Samsung — hold the global premium market at the whole-unit level, the core links of their supply chains run through Chinese manufacturers. Meta Ray-Ban Display's contract manufacturing is the emblematic case: when Counterpoint Research reports Meta's 82% global share, industry insiders know the other fact — the core hardware is built in China[1].

3.4.2 China's Smart-Glasses Patent Stock: Roughly 17,700

Per Qichacha statistics, China held roughly 17,700 active smart-glasses-related patents as of end-April 2026 — more than a tenfold increase over a decade earlier (about 1,500 at end-2016); the share of published invention applications rose from 20.63% in 2021 to 58.09% in 2025, a steady tilt toward higher-value invention patents[10]. Two caveats: the figures come from the corporate-data provider Qichacha (as relayed by CCTV Finance and others), not from the China National Intellectual Property Administration; and different data providers' query formulations can produce results that differ by multiples (Tianyancha's mid-2025 basis counted only "over 7,000"), so any citation must state the provider's basis[10]. A substantial portion of Goertek's 21,735 granted patents relates to AR/VR/AI glasses, and Sunny Optical, Crystal Optech, Sunnypol, and JBD hold their own reserves. This patent estate carries real weight in the global AI-glasses value chain and is China's key defensive asset in international litigation.

The domestic patent reserve already provides strategic defense at three levels: precision optical assembly (Goertek), diffractive-waveguide production (Crystal Optech), and monochrome MicroLED display chips (JBD). These three layers form the defensive bulwark of China's AI-glasses upstream for 2026–2028 — a technical barrier international players cannot route around in the short term.

3.5 Two Structural Concerns Upstream

Although China's upstream dominates the contract-manufacturing layer, this report must flag two structural concerns — they will define the upstream's key engineering challenges of 2026–2028.

3.5.1 On-Device NPU Compute Trails LLM Demand

The first concern: **on-device NPU inference compute is not keeping up with LLM requirements.** As of Q4 2025, no mainstream glasses model publicly claims local execution of a ≥1B-parameter LLM. Qualcomm's 2024 documentation for the Snapdragon AR1 Gen 1 platform emphasizes "local voice wake, keyword detection, and local translation models (distilled models under 100 MB)," while ≥1B-parameter on-device LLM inference is placed by default among "engineering goals for the next 18 months"[7].

Domestic SoCs lag further at this layer. UNISOC's W517 (Chunteng series) remains centered on audio plus keyword recognition, not foundation-model inference; Wingtech and AISpeech specialize in power management and speech processing, not LLM inference. Through 2026–2027, domestic glasses will therefore depend on Qualcomm's Snapdragon AR1 Gen 1 (or successors) for on-device LLM inference — a hard shortfall of "international dependence in high-end SoCs."

The shortfall bites hardest in education. K-12 data-compliance rules demand minimization — minors' voice, image, and biometric data may not be sent to the cloud without dual informed consent from parents and the school. None of the 11 mainstream models currently satisfies all three compliance conditions at once: an on-device ≥1B-parameter LLM, a hardware-enforced privacy LED, and an offline inference pipeline[11]. How fast domestic SoCs close the on-device LLM compute gap will directly determine whether domestic glasses can complete K-12 compliance adaptation independently across 2026–2028.

3.5.2 The International Gap in High-End Optics

The second concern: **the international gap in high-end optical solutions**, concentrated in two subsegments — **full-color MicroLED waveguides** and **extreme light-leakage control**.

Full-color MicroLED waveguides. Meta Ray-Ban Display's LCoS reflective waveguide reaches 5,000 nits with 2% leakage — the extreme ceiling of consumer AI glasses. China's JBD leads globally in monochrome MicroLED chips, but high-yield mass production of full-color MicroLED remains dominated by Japanese and Korean players (Plessey, Mojo Vision, Aledia). San'an Optoelectronics still trails international leaders in full-color MicroLED by roughly 12–18 months.

Extreme light-leakage control. Meta Ray-Ban Display's 2% leakage rate rests on precision LCoS-plus-multilayer-TIR waveguide processing; domestic reflective-waveguide makers currently run 5–8% leakage, which means a visibly weaker display under strong outdoor light. This process gap is unlikely to close within 1–2 years and remains the competitive shortfall of domestic high-end AR glasses in the global premium market.

Together, the two concerns mean that while China's upstream holds global dominance in total contract-manufacturing volume and mid-range products, it remains internationally dependent in two subsegments: on-device LLM inference and high-end optical processing. The key strategic choice for domestic vendors across 2026–2028 is to expand manufacturing and brand advantages in the mid-range while accelerating NPU localization and the engineering assault on high-end optics — the strategic crux of coordination between the upstream and the downstream brand layer.

3.5.3 The Coordination Bottleneck Across the Upstream Chain

A third phenomenon deserves attention: **the upstream coordination bottleneck** — every link has a domestic champion, yet cross-link coordination still leaks efficiency. The four links — light-engine modules (Goertek), optical components (Sunny Optical + Crystal Optech + Sunnypol), chips (Qualcomm + BES Technic + AISpeech), and display chips (JBD + San'an Optoelectronics) — currently cooperate mainly on a build-to-order basis, without deep joint R&D. That model was reasonable before 2024, when

product forms were unsettled; under the rapid iteration cycles of 2025–2027 it becomes a hidden handicap in product differentiation for domestic glasses.

The international flagships (Meta, Apple, Google) have already built "deep joint R&D plus long-term supply" agreements upstream, locking in key suppliers' process roadmaps early in product development. Domestic vendors need a strategic shift in 2026–2028: upgrade from build-to-order to a "joint R&D plus strategic supplier" model, above all in NPU compute planning and high-end optics roadmap selection, where long-term coordination with leading upstream suppliers is essential. A reference template is the three-way collaboration of Xiaomi, Qualcomm, and BES Technic on the 2025 Xiaomi AI Glasses — the three parties locked in the Snapdragon AR1 plus BES low-power companion-chip dual-chip architecture during product planning and jointly optimized the 8.6-hour battery-life target on a 263 mAh cell.

References

[1] Goertek 2024 annual report / company announcement (2025-03-26): "21,735 patents granted to date (cumulative grants of 21,700+), including 8,196 invention patents; 34,900 cumulative applications." Disclosed via the Shenzhen Stock Exchange; relayed by Tencent News. https://new.qq.com/rain/a/20250326A09P4A00 [in Chinese]

[1a] Goertek's contract-manufacturing shares are market estimates: near-80% of mid- to high-end VR assembly (2021, brokerage research): https://m.sohu.com/a/584977384_121156916/ [in Chinese]; over-60% of AI-glasses assembly (investor-community estimate): https://xueqiu.com/1297485090/326608595 [in Chinese]. Neither ratio has been formally disclosed by the company or an authoritative third party; this Blue Book cites them as ranges.

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[3] Crystal Optech, 2024 annual report: "diffractive waveguide and coating revenue up roughly 60% YoY." Disclosed via the Shenzhen Stock Exchange. [in Chinese]

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[7] Karl Guttag (KGuttag). (2024–2025). Analysis of the smart-glasses NPU TOPS compute black box. KGuttag industry blog.

[8] Meta. (2025, September). Ray-Ban Display optics specifications. https://www.meta.com/smart-glasses/ray-ban-display/

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[10] Qichacha (relayed by CCTV Finance and others). China's active smart-glasses-related patents at roughly 17,700 (as of 2026-04-28). https://news.qq.com/rain/a/20260429A045AN00 (2026-04-29) [in Chinese]; updated June 2026 basis of roughly 18,000: https://www.caiwennews.com/article/1467911.shtml (2026-06) [in Chinese]

[11] Composite conclusion of the seven-criterion education-readiness scorecard, Chapter 2 of this report.

Chapter Figure Index

This chapter references the following figures (see the figure appendix):

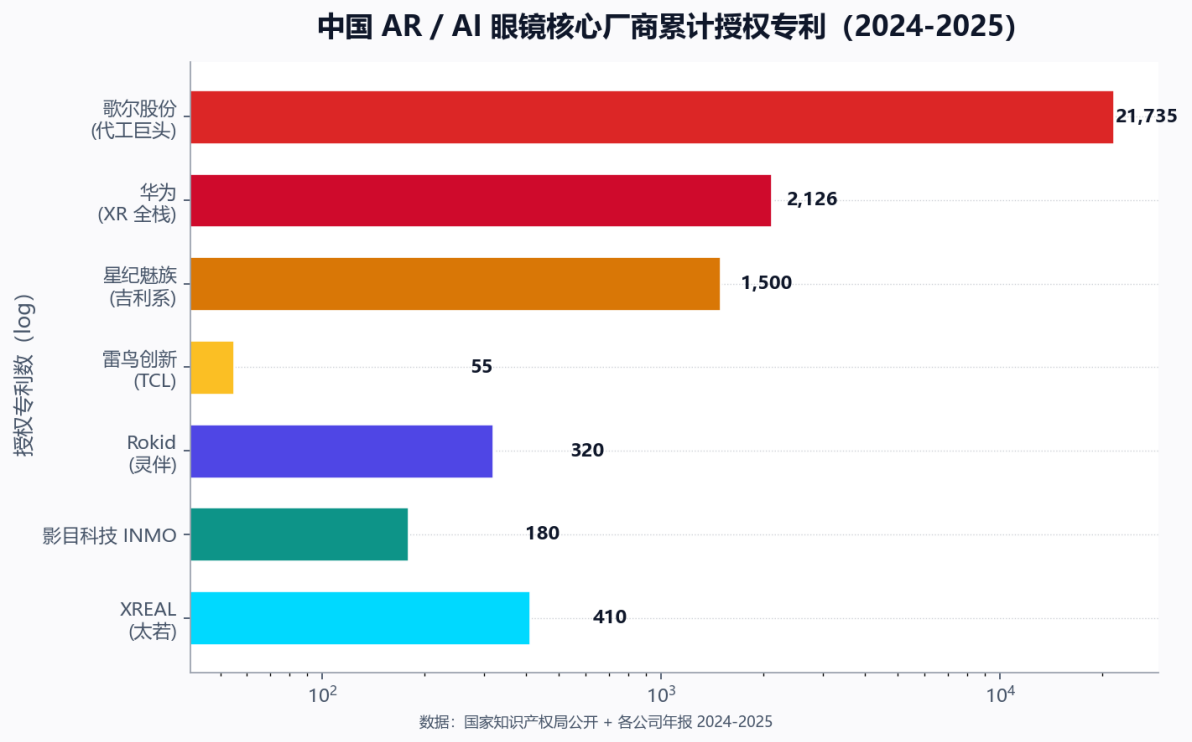

Figure 50. Cumulative granted patents of leading Chinese AR/AI glasses vendors. Source: Qichacha (April 2026)

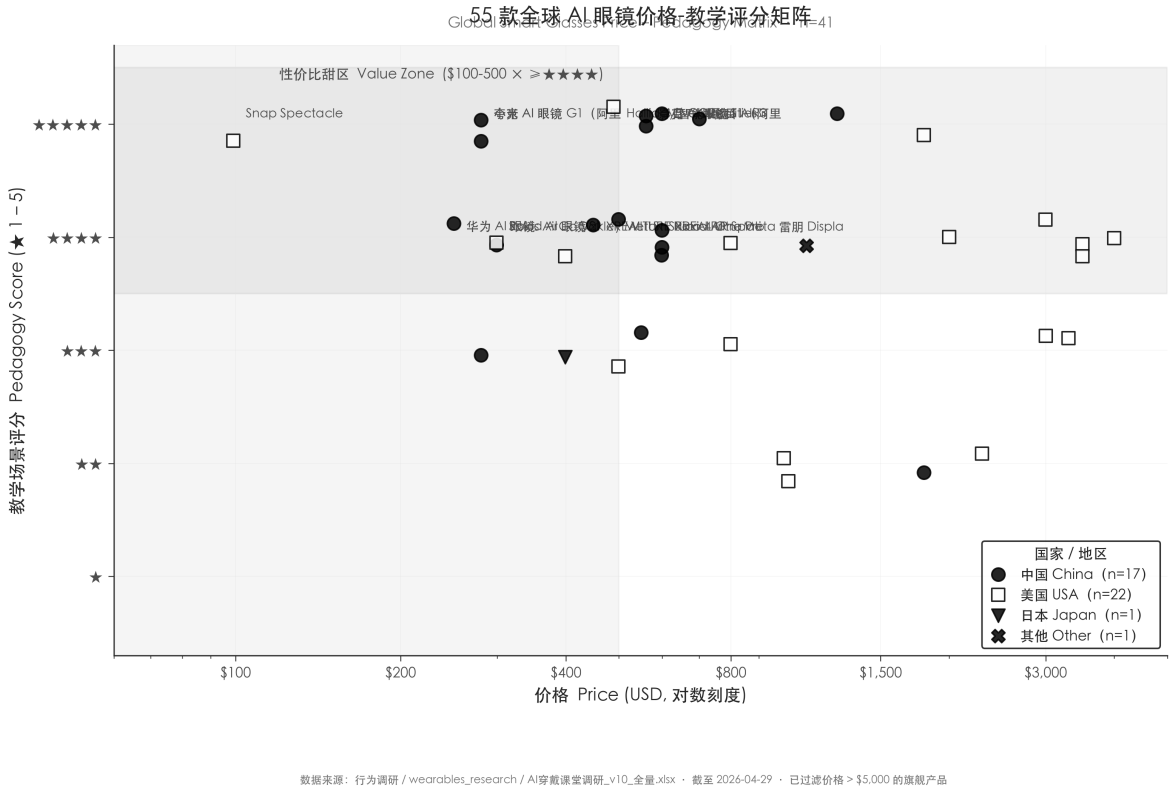

Figure 04. AI glasses price–performance matrix. Source: vendor websites and public reviews (April 2026)

Chapter 4 Midstream and Downstream: OEMs, Channels, and Subsidies

If the upstream — Goertek, Sunny Optical, Crystal Optech — forms the invisible contract-manufacturing chassis of China's AI-glasses industry, the midstream and downstream — whole-device brands, sales channels, and the application ecosystem — are its visible battlefield. Across 2025–2026 that battlefield split into three distinct camps: the international flagship camp of Meta, Apple, Google, and Samsung, which holds global premium pricing power; the domestic ecosystem seven — Xiaomi, Huawei, Alibaba Quark, RayNeo, INMO, Rokid, and Namibox — clustered in the RMB 1,999–4,999 mid-range density sweet spot; and Namibox, whose K9 education-vertical glasses (the world's first) open a new industrial possibility for the segment. This chapter decomposes the landscape along four dimensions — whole-device brand structure, sales channels, consumer applications, and education applications — and closes with two structural concerns: homogenization of education-vertical applications, and the mismatch between user-education costs and product positioning. The midstream/downstream question it answers: beyond international flagship pricing and domestic mid-range density, does the education vertical constitute a third engineerable industrial path?

4.1 The Whole-Device Brand Landscape

4.1.1 International Flagships: Meta / Apple / Google / Samsung

The international flagship camp settled into a "big four" pattern across 2025–2026, each pairing a distinct product position with a distinct business model.

Meta covers the USD 379–799 range with a three-brand matrix: Ray-Ban Meta (no display), Oakley Meta HSTN / Vanguard (sport), and Meta Ray-Ban Display (display-equipped). Counterpoint Research puts Meta's global share at 82% in H2 2025[1]. Meta's core business model is "hardware plus software platform" — Ray-Ban Display plus the Meta Neural Band (EMG wristband) plus the Meta AI assistant (built on Llama) form a complete "AI + display + gesture control" trinity.

Apple's Vision Pro (shipped February 2024, USD 3,499) holds the high-end MR position, with a lighter "Vision Air" AI-glasses line expected in 2027. Multiple market-research firms are explicit in their 2026 forecasts: "Apple is expected to enter in 2027 and will be the industry's key inflection point"[2]. Apple's model is "hardware + service subscriptions + developer ecosystem" — visionOS and the App Store are its moat in XR.

Google is advancing the Android XR ecosystem in deep partnership with Samsung and XREAL[3]. Google AI Glasses are expected in H2 2026, coupled to Gemini Live, Astra, and the Android XR

platform. Google's model is "open platform plus software services," a counterpoint to Meta's vertical integration.

Samsung's Galaxy XR (October 2025, USD 1,799) is the first hardware landing of the Samsung–Google Android XR alliance, positioned upper-mid. Samsung leverages the Galaxy ecosystem for cross-device coordination among phones, tablets, and glasses, and is expected to broaden the product matrix in H2 2026.

4.1.2 The Domestic Ecosystem: Xiaomi / Huawei / Alibaba Quark / RayNeo / INMO / Rokid / Namibox (K9 Education Vertical)

The domestic camp formed a multipolar "ecosystem seven" across 2025–2026.

Xiaomi entered consumer AI glasses with the Xiaomi AI Glasses (released June 26, 2025) from RMB 1,999 (≈USD 278; RMB figures in this chapter are converted at RMB 7.2 per USD). Counterpoint data show Xiaomi's H2 2025 shipments up 200% YoY, lifting it to global No. 2[1]. Xiaomi's model — hardware plus the Mijia ecosystem plus the Super XiaoAi assistant — approximates Apple's vertical integration.

Huawei built a double moat of domestic compliance plus the HarmonyOS ecosystem, combining HarmonyOS, the Pangu LLM, and the Huawei Cloud education platform[4]. In April 2026 Huawei released a new AI-glasses model under the "Shili Yanji" tagline, in three colorways (streamer silver, titanium gray, modern black), with light weight as the focus[4]. Its core model is hardware plus the HarmonyOS ecosystem plus government-and-enterprise B2B.

Alibaba Quark entered the November–December 2025 launch window with two products at RMB 1,999 (G1) and RMB 4,299 (S1). The S1 pairs dual light engines with optical waveguides for near-eye display, 4,000-nit peak brightness, 3K capture, and deep binding to Qwen and the Alibaba ecosystem[5]. Alibaba's model is hardware plus Alibaba ecosystem services (Alipay / Taobao / Amap / DingTalk).

RayNeo (TCL-backed) entered the domestic all-in-one full-color AR high end with the RayNeo X3 Pro at RMB 8,999 (announced May 27, 2025; on sale June 15). The X3 Pro held roughly a 24% global AR smart-glasses brand share in Q3 2025[6]. RayNeo's model is high-end AR hardware plus bound AI back ends (Qwen + DeepSeek).

INMO focuses on the teaching-translation niche. The GO3 weighs 53 g, displays 35 languages in real time with sub-1-second latency, and is used by university language centers for cross-border meeting support and interpreting training.

Rokid (Hangzhou Lingban Technology) is one of the whole-device brands this report tracks closely (NetDragon Websoft Holdings, HKEX: 0777, was the lead investor of its November 2023 round; see §10.1.6). Its product lines split into two. **(1) All-in-one AI+AR glasses** — the flagship **Rokid Glasses** weighs only **49 g** and pairs a JBD "Hummingbird Mini II" monochrome Micro-LED light engine with binocular diffractive waveguides (officially rated "Up to 1,500 nits" to-eye brightness), a Qualcomm AR1 chip, and a 12 MP camera (Sony IMX681), supporting AR+AI multimodal interaction, object recognition, and text translation, from **RMB 2,499** (announced November 18, 2024; on sale Q2 2025); in

November 2025 Rokid added an AI-glasses model co-branded with BOLON (EssilorLuxottica's house brand) from RMB 2,199, routed through offline eyewear channels[18]. **(2) Split-design AR / spatial computing** — the Rokid Max 2 glasses (RMB 3,099) plus the Station 2 host form the Rokid AR Lite kit (RMB 3,699), aimed at large-screen viewing, productivity, and spatial computing[18]. Rokid's core differentiation lies in switchable LLM back ends (OpenAI / DeepSeek / Qwen / Gemini) and its in-house YodaOS-XR spatial-computing system. **Market position.** On Omdia's 2025 basis, Rokid ranks No. 1 globally in display-equipped AI glasses and No. 2 globally / No. 1 in China across all smart-glasses categories (figures to be reconciled against the original Omdia report)[19]; Rokid Glasses sales exceeded 300,000 units in 2025, against a company-disclosed 2026 target of 1 million units (a target, not a realized figure)[19]. **Education deployment.** Rokid's AR teaching solutions have entered 40+ primary and secondary schools in Hangzhou, Shanghai, Wenzhou, and Jinhua; it co-built an XR education joint laboratory with Zhejiang Normal University and, in December 2024, initiated the China AR Education Innovation Alliance[7]. **Capital track.** Rokid obtained CSRC overseas-offering and listing filing on February 26, 2026 (proposing to issue up to 312 million shares on the HKEX Main Board) and completed its joint-stock reorganization on March 6, 2026, sprinting for the "first listed smart-glasses stock" (XREAL filed first with the HKEX in April 2026); the final filing/listing status is not yet settled and is marked "in progress"[20].

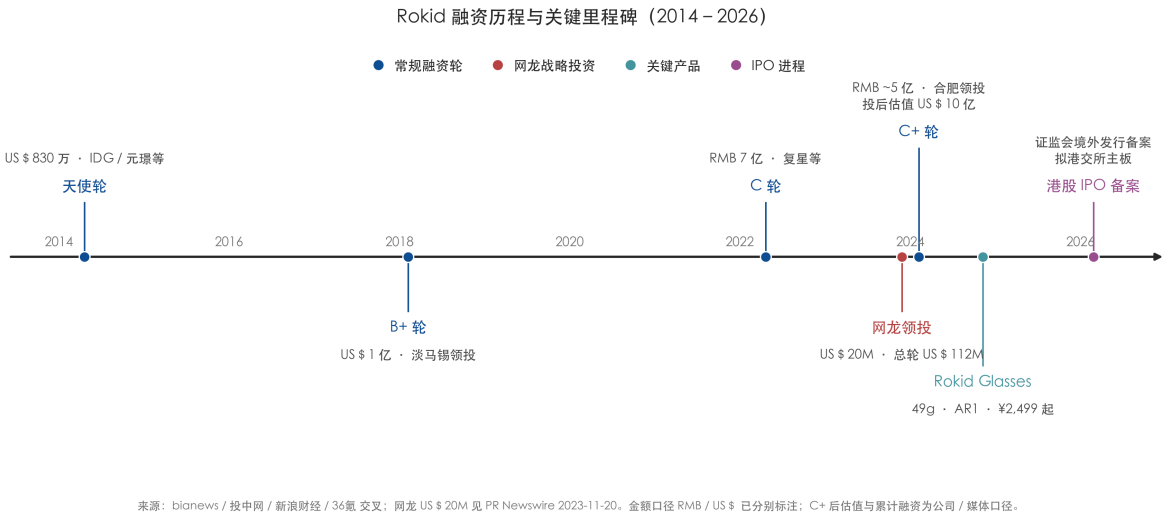

Figure 87. Rokid funding history and key milestones (2014–2026). Source: bianews / ChinaVenture / Sina Finance / 36Kr; PR Newswire 2023-11-20

Namibox (the K9 education vertical) became the world's first K9 education-vertical AI glasses with the Namibox AI Learning Glasses (NAMI INSIGHT One; pre-sale December 31, 2025) from RMB 2,499 — 36.85 g, a smart ring controller, a detachable Mini AR module (MicroLED diffractive optical waveguide), a 12 MP camera, an in-house education-domain LLM, and teaching data from 40 million K9 users. Namibox's model — hardware plus education-content SaaS plus a K9 learning platform — is the domestic ecosystem's most differentiated vertical play.

4.1.3 The Domestic Mid-Range Price Sweet Spot (RMB 1,999–4,999)

Plotting the seven domestic vendors on a price scatter shows a clear mid-range density band: **RMB 1,999–4,999** gathers six product lines — Xiaomi, Huawei, Quark G1/S1, INMO, Rokid, Namibox — at one-seventh to one-tenth of HoloLens 2's price with comparable teaching-scenario applicability. The band carries three industrial meanings.

(1) Price defensibility. RMB 1,999–4,999 is Chinese consumers' psychological anchor for AI glasses: below it a product reads as "bare-bones," above it as "non-essential." The seven domestic vendors' concentration in this band forms a price-defensive advantage against the international flagships (Meta Ray-Ban Display at RMB 5,599; Vision Pro at RMB 24,499).

(2) Education-procurement friendliness. Education-bureau centralized purchasing and school self-funding are extremely budget-sensitive. The RMB 1,999–4,999 band sits exactly under the "below RMB 5,000 per unit" decision threshold of school centralized procurement.

(3) Domestic-LLM attachability. Every domestic mid-range model — Xiaomi's Super XiaoAi, Huawei's Pangu, Quark's Qwen, RayNeo's Qwen + DeepSeek, Rokid's multi-LLM switching, Namibox's in-house education model — supports attachment to domestic foundation models, satisfying MOE data-security requirements and keeping minors' voice and image data onshore.

4.2 Sales Channels

4.2.1 International DTC (Meta Store / Apple Store / Rokid Global)

International vendors sell primarily direct-to-consumer.

Meta Store. Meta sells D2C through its own store plus EssilorLuxottica's global eyewear retail network (10,000+ stores). The channel's decisive advantage — reaching 30+ countries at hardware launch — was a key support of Meta's leap to an 82% share in H2 2025[1].

Apple Store. Apple Vision Pro sells through Apple's online store and 500+ physical stores worldwide. Apple's channel advantage is premium brand recognition plus a closed experience loop — consumers can trial the full Vision Pro feature set in-store.

Rokid Global. Rokid sells through its global site, Amazon (North America), and select overseas distributors. Rokid's channel build-out in industrial and medical B2B markets runs well ahead of other domestic brands — the domestic ecosystem's representative overseas D2C play[7].

4.2.2 Domestic E-Commerce (JD / Tmall / Pinduoduo)

The domestic ecosystem sells primarily through e-commerce.

JD.com is the main consumer channel for domestic AI glasses. Industry media estimate the Xiaomi AI Glasses sold close to 50,000 units in their first three days (not officially disclosed by Xiaomi), with over 60% completed through JD and Xiaomi's own site (the channel split is likewise a media estimate)[8]. JD's strengths are its large 3C-electronics user base and fast logistics.

Tmall is the main channel for Alibaba Quark G1/S1, the INMO series, and the RayNeo X3 Pro. Its strengths are mature brand-store operations and users receptive to AI glasses.

Pinduoduo centers on entry-level AI glasses (below RMB 1,999), serving lower-tier cities and price-sensitive buyers.

4.2.3 Offline Experience Stores

The domestic ecosystem's offline experience-store footprint lags the international brands. Xiaomi Home and Huawei experience stores can demo AI glasses; Alibaba Quark, RayNeo, and Rokid still rely on flagship stores in tier-1 and new-tier-1 cities. This offline gap is a key operations item for the domestic ecosystem to close across 2026–2028 — for a wearable, the "try before you buy" decision path differs markedly from conventional 3C products.

4.2.4 B2B Education Procurement Channels

Education procurement differs fundamentally from the consumer market, structured in three layers: government centralized procurement, school self-funding, and teacher/parent individual purchase.

Government centralized procurement is the mainstay of B2B education buying: batches of 100+ units, emphasis on unified brands and standardization, and high demands on domestic compliance, domestic LLMs, and education SDKs. The lecture capture vendors Seewo, HiteVision, and AVA already operate mature "education-bureau liaison plus tendering" channels; new AI-glasses entrants must ride them.

School self-funding is led by private schools and training institutions: batches of tens of units, weighted toward value for money and feature richness. This layer is AI glasses' mid-range beachhead in education — private schools decide faster than public ones and adopt new technology more readily.

Teacher/parent individual purchase targets AI-assisted teaching and learning, concentrated on mainstream models such as Ray-Ban Meta, Xiaomi, RayNeo V3, and Namibox. Teachers buy mainly for classroom support (teleprompting, translation); parents buy mainly for their children's learning support.

4.3 The Application Layer (Consumer)

4.3.1 Four Mainstream Scenarios: Capture / Translation / Teleprompting / Read-Aloud

Consumer AI-glasses usage concentrates in four scenarios.

Capture. First-person video capture is the core consumer application. Ray-Ban Meta, the Xiaomi AI Glasses, and the RayNeo V3 all lead with first-person capture, used mainly for sports, travel, and vlogging.

Translation. Real-time translation is the differentiating application. The INMO GO3 — 53 g, 35 languages displayed in real time, sub-1-second latency — is the de facto standard. Meta Ray-Ban Display's Teleprompter feature, made public at CES 2026, can also serve cross-language communication[9].

Teleprompting. CES 2026 publicized Meta Ray-Ban Display's Teleprompter[9] — the key application for speeches, hosting, and teaching. Its teaching extension is the "teaching prompt": the teacher uploads courseware while preparing the lesson, and the glasses surface the next teaching point in class.

Read-aloud. Voice read-aloud combined with book scanning enables "see it, hear it" — the key scenario for visual-impairment assistance, early literacy, and foreign-language learning.

4.3.2 AI Assistants / Instant Q&A

The AI assistant is the core interaction capability of AI glasses, and each vendor's assistant binds deeply to its model ecosystem: Meta AI (Llama family), Apple Intelligence (in-house plus ChatGPT integration), Super XiaoAi (Xiaomi plus Doubao), Pangu (Huawei), Qwen (Alibaba Quark), multi-LLM switching (Rokid).

Assistant capability stacks in four layers: **voice dialogue** (natural-language interaction), **visual question answering** ("glance and ask"), **tool use** (calling third-party APIs), and **long-term memory** (retaining interaction context). The first three were present on mainstream models by H2 2025; the fourth — long-term memory — is the engineering focus of 2026–2027.

4.3.3 Industrial / Medical / Education Training

Consumer applications extend into industrial, medical, and education training.

Industrial training. Vuzix M400 deployments — OSHA's expansion after a two-year pilot, Fujitec's elevator-maintenance training in Japan, CNH Industrial's dealer training in Latin America, Plug Power's remote training — have established the de facto usability of B2B industrial AR glasses[10]. **Medical training.** HoloLens 2 is deployed at scale in anatomy and surgical teaching; Imperial College used Microsoft Lens / HoloLens devices in NHS wards to let one clinician teach 50–60 medical students by live clinical streaming[11]. **Education training.** Consumer AI glasses in education remain early-stage, driven by three demand types: K9 learning support (Namibox), special-education assistive devices (for visual and hearing impairment), and cross-border teaching-research training.

4.4 The Application Layer (B2B Education)

4.4.1 K-12 Teacher-POV Pilots

The scale of China's K-12 teacher-POV pilots can be estimated from two independent threads.

Thread 1. The MOE's "AI-Empowered Teacher Development" pilot program counts a cumulative 103 units on its public basis (first batch of 2 — the Ningxia Hui Autonomous Region and Beijing Foreign Studies University, 2018; second batch of 100 — 55 universities, 20 prefecture-level cities, and 25 districts/counties, 2021; plus later additions)[12]. Across pilot units: 2.97 million teacher-trainings in intelligent literacy delivered cumulatively; 43,000 smart classrooms / training rooms built or upgraded; 738 intelligent tools developed; and 30 cities/districts advancing AI-enabled "Three Classrooms"

deployments (the national initiative spanning targeted-delivery, master-teacher, and renowned-school online classrooms) covering 188,000 teachers[12].

Thread 2. The MOE Department of Basic Education's "AI education bases for primary and secondary schools" total 509 across two batches (184 in the first, 325 in the second)[13] [14]; the National Center for Educational Technology (NCET) AI curriculum pilots cumulatively cover 1,000+ schools[15].

Synthesizing the threads, **about 1,500 primary and secondary schools have entered national-level AI education pilots** (estimated on the internal basis of cumulative experimental schools across programs)[12]. The potential buyers of teacher-POV AI glasses are distributed mainly across this ~1,500-school installed base.

4.4.2 Higher Education: Lecture Capture / Flipped Classrooms

Potential higher-education applications center on lecture capture, flipped classrooms, and cross-border exchange.

Lecture capture. Traditional lecture capture depends on ceiling-mounted fixed cameras; teacher-POV glasses can serve as a complementary first-person data source. The international SaaS platforms — Echo360, Panopto, Mediasite — solved the "camera-position selection" problem across 2024–2026 with auto-tracking PTZ cameras (such as the Epiphan EC20), but "viewpoint selection" still depends on fixed cameras[16]. Teacher-POV glasses close exactly that gap.

Flipped classrooms. Teachers upload first-person teaching video for students to watch in advance, freeing class time for collaborative discussion — a model already validated at multiple R1 universities.

Cross-border exchange. University teachers lecturing abroad use AI glasses for real-time translation (the INMO GO3 and similar models) — a differentiated application for internationalized teaching.

4.4.3 Medical Schools / Laboratories / Field Research

Medical schools, laboratories, and field research form the high-value B2B education scenarios.

Medical schools. HoloLens 2 is deployed at scale in anatomy and surgical teaching. USC's Armstrong team validated lightweight glasses such as Ray-Ban Meta in foot-and-ankle residency teaching; trainees reported them "more instructive than traditional overhead cameras"[17].

Laboratories. In chemistry, biology, and physics labs, a teacher wearing AI glasses can record student procedures while AI drafts the lab report automatically — a differentiated B2B education demand.

Field research. In geography, ecology, and archaeology fieldwork, AI glasses sell on durability (IP54+), battery life (≥6 hours), and visual question answering (identifying species and geological features).

4.4.4 Teacher Training / Teacher Education

Teacher training and pre-service teacher education are the high-value entry points of B2B education.

The National Training Program. The MOE's National Training Program (*Guopei*) has invested RMB 2 billion+ per year in teacher training since 2010, with AI-pedagogy content rising rapidly across 2024–

2026. In training scenarios, AI glasses' replay-plus-micro-teaching-analysis capability (as in Seewo's Weige Teacher tool) offers differentiated value.

Teacher education. Normal universities (Beijing Normal University, East China Normal University, South China Normal University) are folding AI pedagogy into pre-service programs. Pre-service teachers wearing AI glasses for teaching-skill practice is a prospective new model for teacher education across 2026–2028.

4.5 Two Structural Concerns in the Midstream and Downstream

The midstream/downstream has settled into a multipolar pattern — international flagships, the domestic ecosystem seven, and Namibox's K9 vertical — but this report must flag two structural concerns.

4.5.1 Homogenization of Education-Vertical Applications

The first concern is **homogenization in the education vertical**. Of the domestic seven, six — Xiaomi, Huawei, Alibaba Quark, RayNeo, INMO, Rokid — remain positioned as consumer AI glasses; Namibox is the only education-vertical player. Industrializing the education vertical cannot be done by one vendor — it needs at least 3–5 vendors building differentiated positions across K-12, K9, special education, teacher education, and medical education.

The current reality: outside Namibox, vendors approach education as a consumer-product extension — the Xiaomi AI Glasses can be used in education but are not education-vertical; the RayNeo X3 Pro can be used in education but is positioned premium. The consumer-extension path hits two problems at education-procurement time. **First, education SDKs lack depth** — integration with China's education ecosystems (Seewo, HiteVision, AVA) remains incomplete. **Second, education compliance is not preconfigured** — hardware-enforced privacy LEDs, minors' data minimization, and parent-account binding do not ship as factory defaults.

Two resolution paths exist: **(a) existing consumer brands ship deeply customized education editions** (a "Xiaomi AI Glasses · Education Edition," say); **(b) new entrants specialize in the education vertical** (Namibox today; possibly a future "K-12 teacher-specific AI glasses" brand). Both paths carry industrial opportunity across 2026–2028.

Four education-vertical subsegments merit attention through 2026–2028. **Segment 1 · K-12 teacher POV**: classroom support for primary and secondary teachers, with the ~1,500 national-level AI education pilot schools as the installed-base market[12]. **Segment 2 · Higher-education lecture capture**: lecture capture plus flipped classrooms at R1-class and Project 985/211 universities, with roughly 2,800+ regular HEIs plus 1,500+ adult HEIs as the market base. **Segment 3 · Teacher education**: pre-service training systems at 100+ normal universities with hundreds of thousands of pre-service teachers — a stable market. **Segment 4 · Special-education assistive devices**: assistance for children with visual or hearing impairment or autism, with roughly 2,300+ special-education schools as a differentiated vertical. Together the four segments form the potential market base for education-vertical AI glasses in 2026–2028.

4.5.2 The Mismatch Between User-Education Costs and Product Positioning

The second concern is the **mismatch between user-education costs and product positioning**. Product positioning today is vendor-driven (consumer versus B2B versus education vertical), while end users' understanding of AI glasses remains early. **Consumer users** (the 30–45 middle class) want capture, translation, and an AI assistant; they accept the category readily but are price-sensitive. **Industrial B2B users** (45–60 industrial practitioners) want work guidance, remote training, and videoconferencing; they are price-insensitive but demand extreme functional stability. **Education users** (teachers, students, parents) want teaching support, learning support, and controllable compliance; their price sensitivity is moderate but their compliance bar is extremely high.

The divergence means **no single product can serve all three user types**. Meta Ray-Ban Display wins in the consumer market but faces Vuzix M400's industrial-grade advantage in B2B; the Xiaomi AI Glasses win in the consumer market but face Namibox's vertical advantage in education. **User education — getting users to understand what AI glasses are worth to them — is the shared challenge of every AI-glasses vendor.** Through 2026–2028, the decisive education-vertical investment is not hardware iteration but the three-in-one operation of user education, channel penetration, and content-ecosystem building.

For China's K-12 market specifically, user-education investment concentrates in three areas. **(1) Teacher-training content.** Teachers' pedagogical grasp of AI glasses is still nascent; vendors need to develop "AI-glasses pedagogy" training courses with normal universities and the National Training Program. **(2) Home–school co-construction.** Parents' perception of AI glasses in learning comes mainly from Xiaohongshu and Douyin; vendors must build home–school content ecosystems that show parents concrete value in their children's learning. **(3) School IT and teaching-research collaboration.** School informatization directors and teaching research officers face nontrivial technical hurdles integrating AI glasses; vendors must supply complete deployment documentation, technical support, and third-party integration schemes. Taken together, the three investments say one thing: **industrializing the education market is not selling a product but building an ecosystem** — the central strategic question of whether AI-glasses vendors can hold ground in the education vertical across 2026–2028.

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Chapter Figure Index

This chapter references the following figures (see the figure appendix):

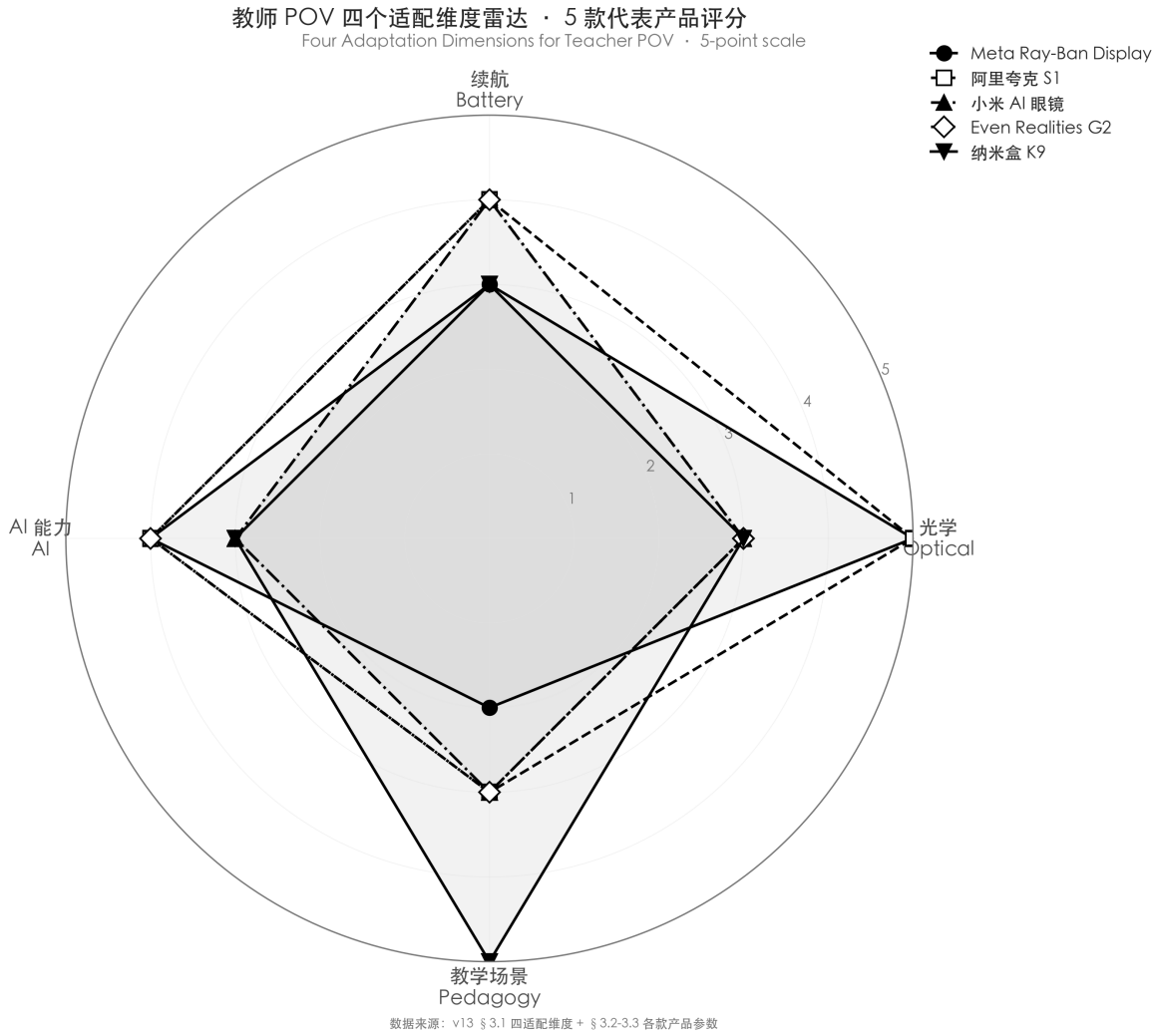

Figure 28. four dimensions radar

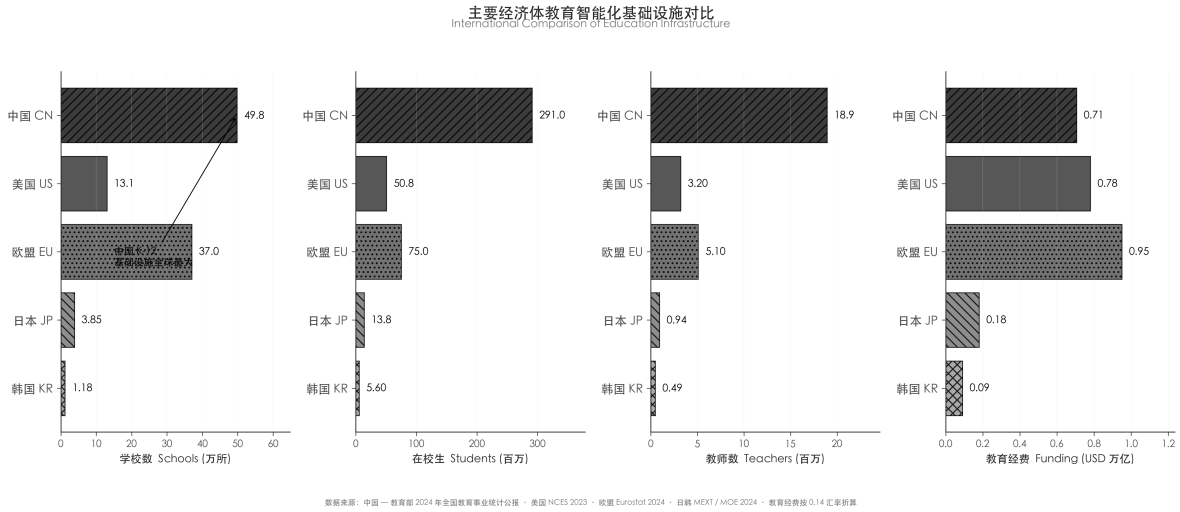

Figure 22. Global comparison of education digitalization infrastructure. Source: UNESCO / OECD / World Bank reports

Chapter 5 The Lecture Capture Industry: Incumbents and AI Disruption

Something unmistakable happened to the lecture capture market between 2024 and 2026: four landmark capital moves traced the industry's entire trajectory. In February 2024 Sonic Foundry sold Mediasite to Enghouse for USD 15.5 million; in May 2024 Echo360 secured a USD 43 million credit refinancing; in October 2024 Panopto acquired Elai; in February 2025 Seewo — CVTE's education brand — connected its full product line to DeepSeek; and in May 2025 Echo360 acquired GoReact. None of these five events stands alone — together they mark traditional hardware-based lecture capture vendors being consolidated by private equity, redefined by AI, and wired directly into Chinese foundation models. Internationally, Echo360, Panopto, and Mediasite form a PE-led SaaS-consolidation "tripod"; in China, eight appliance vendors — Seewo, HiteVision, AVA, REACH, Qzhi (Zhongqing), Wenxiang, Hikvision, and Dahua — constitute a homegrown duopoly-anchored landscape of government procurement, domestic LLMs, and recording hardware. This chapter calibrates the market baseline on dual global-plus-China bases, decomposes the three international SaaS players, three international hardware players, and eight Chinese appliance vendors one by one, analyzes the distinctive role of education KOLs and the WeChat ecosystem in China's K-12 decision chain, and closes with one industrial question: under the twin pressures of embedded recording (Zoom/Teams) and the teacher-POV incremental data source, will lecture capture's next decade be "consolidated" or "redefined"?

5.1 The Global Lecture Capture Market

5.1.1 The USD 11–16 Billion Baseline (a 7× Definitional Spread)

Lecture capture market-size estimates spread across a sevenfold "narrow versus wide" range in 2025–2026. Our research collected estimates from 10+ public market-research firms for the 2025 global market, spanning USD 3.1 billion (SkyQuest, narrow basis)[1] to USD 23.4 billion (Value Market Research, wide basis) — a 7× range, with CAGRs from 9.5% to 34.1%.

The spread is not an artifact of uneven research quality; it signals that lecture capture as a category is still being redefined. Three definitional boundaries — whether hardware counts, whether videoconference recording counts, whether corporate training counts — produce the sevenfold valuation gap.

This Blue Book standardizes on a base case: **a global lecture capture market of USD 13.65 billion in 2025 and USD 17.44 billion in 2026, rising to USD 59.39 billion by 2031 at a 27.77% CAGR over 2026–2031** (Mordor Intelligence's current website edition, accessed June 2026)[2], cross-checked against

three mid-basis firms — Research and Markets, The Business Research Company, and The Insight Partners — and excluding Emergen Research (USD 217.4 billion by 2033, 34.10% CAGR), whose long-range projection into the hundreds of billions reflects an "all-EdTech" basis. Citation requires care with unit conversion: USD 17.44 billion equals 174.4 yi in Chinese units, and Chinese-language media occasionally miswrite it as "17.44 yi" (USD 1.744 billion) — an order of magnitude too low. On the second basis, **Verified Market Research (VMR)'s official press-release figures are USD 5.41 billion (2020) → USD 34.37 billion (2028) at a 33.54% CAGR over 2021–2028** — the "USD 4.5 billion in 2022" base circulating in Chinese media cannot be traced in VMR's original text, appears to be a citation distortion, and is no longer used; the "33.5% CAGR" must always be labeled as VMR's basis, not Mordor's[2a]. Industry Research Biz gives USD 5.02 billion (2025) → USD 44.16 billion (2034) at a 26.9% CAGR, consistent with the base case at the CAGR level. Global Growth Insights' USD 6.33 billion (2025) → USD 17.07 billion (2033) at 13.2%, and Market Research Future's 10.9% CAGR for the Smart LC subcategory, represent the "mature SaaS replacement-cycle" view — the most conservative estimate, excluding AI value-add.

5.1.2 CAGR 25% (Base Case)

The arithmetic mean CAGR across the four mid-basis firms is 25% — the base-case growth rate this Blue Book cites. The gap to Mordor Intelligence's current 27.77% (2026–2031; its prior 2025–2030 edition showed 28.57%, since superseded on the website) stems mainly from the divergence of two curves: the AI value-add layer versus core lecture capture SaaS. Kaltura, the only publicly traceable listed lecture capture company, grew revenue +2.30% / +3.77% / +2.02% / +1% across 2022–2025 (2024 revenue USD 178.72 million; 2025 revenue USD 180.9 million)[3], indicating that organic growth in core lecture capture SaaS (excluding M&A) runs at roughly 5–8%. Mordor's 25–28% CAGR most likely reflects new revenue streams from the AI value-add layer.

5.1.3 North America at 38.10% / Software at 65.12%

Mordor Intelligence's regional split: **North America holds 38.10% of global revenue**, the largest single region; **Asia-Pacific grows fastest at a 28.60% CAGR**, driven mainly by China, India, Japan, and Indonesia; Europe is comparatively stable thanks to the mature Opencast open-source ecosystem; Latin America and the Middle East/Africa are nascent[2].

By end user, **higher education holds 75.05% of revenue** and **corporate training grows at a 29.10% CAGR**, while K-12 is propelled by US federal money such as the USD 811 million Digital Equity Act. **Mordor's component split**: software 65.12%, hardware 34.88% — hardware is being eroded by commoditization pressure, with value migrating to SaaS plus the AI layer[2].

The implication: even when AI glasses arrive carrying a "teacher POV / student POV first-person" narrative, **higher education remains their largest potential buyer** — the exact inverse of China, where all-in-one lecture capture appliances dominate K-12. In China, K-12 is the mainstay of government procurement while higher education is the "next battlefield" where SaaS subscriptions have yet to form; overseas, R1 research universities' IT departments have paid lecture capture SaaS subscriptions for two

decades, and corporate training is entering at a near-30% CAGR. Two different market curves mean AI glasses' entry path must split overseas from China.

5.2 The International SaaS Tripod

5.2.1 Echo360 (Including the GoReact Acquisition)

Echo360 is North America's most aggressive explorer of lecture capture AI. On May 14, 2024, o15 Capital Partners, alongside Centre Lane Partners, extended a USD 43 million credit facility, explicitly to "retire existing debt and support a transformative acquisition"[4]. That credit line directly financed the GoReact acquisition a year later.

May 8, 2025: the GoReact acquisition. Echo360 completed its acquisition of GoReact, the market leader in AI video skills assessment, with 800 academic-institution customers and a training footprint covering one-fifth of US new teachers[5]. It is the most narratively charged strategic acquisition of the 2024–2026 lecture capture cycle, marking Echo360's repositioning from "passive recording infrastructure" to a "Learning Transformation Platform."

AskEcho, the AI assistant embedded in Echo360's flagship EchoVideo platform, entered the mainstream product in October 2024 — automatically generating teaching aids, Smart Chapters, auto-captions, and cross-video semantic search[6]. With GoReact integrated, AI video assessment (students submit video assignments; AI returns playback annotations plus teacher scoring) became EchoVideo's upper value-add layer — the decisive product-form step Echo360 crossed: **from "record + search" to "record + assess."**

2,000+ customers / 5 million learners / 1,200+ institutions. The customer base shows a steep expansion curve — 1,200 higher-education institutions plus 2 million learners disclosed in October 2024[6], updated in January 2026 to 2,000+ customers and 5 million learners/instructors/trainers/frontline employees across the Americas, EMEA, and APAC[7]. A 67% customer-base expansion in just over a year, driven mainly by GoReact's 800 institutional customers and new enterprise accounts.

Centre Lane Partners control. As Echo360's PE owner, Centre Lane Partners pairs with o15 Capital Partners in a "control plus credit" two-layer capital structure — the archetype of PE-led SaaS consolidation in international lecture capture. On September 4, 2025, Echo360 entered the Gartner Hype Cycle for Higher Education 2025 — key endorsement for its IPO-roadshow product story. On March 17, 2026, Echo360 struck a hardware partnership with Epiphan Video, pushing 4K PTZ and AI auto-tracking down into classroom hardware — completing a dual-track integration of software AI value-add plus hardware AI tracking.

5.2.2 Panopto (Including the Elai Acquisition)

Panopto, spun out of Carnegie Mellon University in 2007, was **acquired outright by the private-equity firm K1 Investment Management in April 2021**[8]. CEO Jason Beem took office in November

2022. Panopto's AI path differs from Echo360's — its product philosophy is a three-piece set of transparent pricing, AI captioning, and hardware–software integration.

October 2024: the Elai.io acquisition. Elai is an AI text-to-video platform that generates explainer videos directly from scripts. The deal won EdTech Chronicle's 2024 Best M&A Deal Under USD 20M award[9]. With Elai integrated, Panopto users can not only search recorded lectures but have AI generate supplementary explainer segments in any teacher's voice — a clear product-boundary extension into AI content generation.

AI Access: 12+ language transcription / Smart Chapters / Insights. Access AI auto-translated captions went live in August 2024; February 2025 added Hindi automatic speech recognition (ASR), Smart Chapters, OCR, and custom dictionaries[10]. Finland's Aalto University has deployed its ASR auto-captioning since January 2024 — the representative European case of compliance-driven AI captioning. From May 11, 2026, Brown University turns on Panopto auto-captions by default to satisfy HHS Section 504 and WCAG 2.1 AA accessibility compliance — the key node where regulation forces AI captions to become a lecture capture standard feature.

K1 Investment Management control. K1 has wholly owned Panopto for five years since April 2021, forming the "international PE pair" with Centre Lane-controlled Echo360[8]. K1 brings deep SaaS-consolidation experience, with a portfolio spanning education and enterprise SaaS. Panopto's reference customers include Stanford, Cornell, Northwestern, Brown, and Dartmouth, plus the enterprises VMware, Tableau, HubSpot, Qualcomm, and GE Healthcare.

On May 15, 2026, Panopto and Epiphan Video jointly released the **EC20 PTZ camera**: 4K CMOS, 20× optical zoom, AI auto-tracking (Presenter and Zone modes), PoE+ single-cable power, Dante audio over IP — the first Panopto-certified PTZ camera[11]. Both AI modes carry industry meaning: Presenter mode follows the teacher across the stage; Zone mode auto-frames within preset areas. But the EC20 solves **camera-position selection, not viewpoint selection** — it still hangs on the front wall or ceiling, still sees the room panorama, and still cannot see which student the teacher is actually looking at, or for how long.

5.2.3 Mediasite (Sold to Enghouse)

Mediasite is the most senior hardware-recorder brand in lecture capture, with a lineage reaching back to Sonic Foundry's 1990s video technology. **The transaction closed on February 9, 2024**: Sonic Foundry (OTC: SOFO) sold the Mediasite business (including its Japanese and Dutch subsidiaries) to the Canadian listed enterprise-software company Enghouse Systems Limited (TSX: ENGH) for **USD 15.5 million in cash**[12]. Sonic Foundry's FY2023 (ended September 30, 2023) showed total revenue of USD 22.1 million and an Adjusted EBITDA loss of USD 10.3 million (roughly doubling YoY)[13] — the direct trigger for the sale.

Against Mediasite's historical peak (Sonic Foundry's market value once reached the order of USD 350 million), USD 15.5 million is stark value destruction. Mediasite is the market's most instructive cautionary case — **it did not merely run slow in the AI race; its entire product philosophy failed to keep up.** Its core form — server-room hardware recorders plus companion SaaS — earned its revenue

from servers, PoE recording units, and enterprise deployment services, and that hardware-locked dual-track structure carried a structural disadvantage against pure SaaS subscription paths.

Enghouse's integration strategy folds Mediasite's revenue into its enterprise-video group (alongside Vidyo and Lifesize) without pushing higher-education expansion[12]. Enghouse stated plainly that one acquisition motive was "expanding its Japan footprint" — Japanese universities deployed Sonic Foundry/Mediasite hardware recorders at scale from the 2010s, migrated to SaaS slowly, and thus generate a stable maintenance revenue stream. This "platform asset inside Enghouse, no active competition" positioning means Mediasite has effectively exited lecture capture's AI first tier.

The warning Mediasite's value destruction sends the rest of the field: hardware-asset value is being eroded at accelerating speed by SaaS-plus-AI substitution. When a lecture capture vendor cannot ship content-understanding AI — auto-captions, Smart Chapters, video assessment — within 24 months, its positioning slides from "teaching infrastructure" to "video archive tool," and the valuation multiple collapses with it.

5.3 Three International Hardware Players

5.3.1 Owl Labs Meeting Owl 4+

Owl Labs, a Boston-based videoconferencing hardware maker founded in 2019, centers its product line on the Meeting Owl 360° panoramic smart camera. The Meeting Owl 4+ completed its iteration in 2024, targeting small and mid-sized classrooms and meeting rooms.

Three key capabilities: **360° panoramic video** (one unit covers the whole room), **AI speaker auto-tracking** (identifying and focusing on whoever is speaking), and a **multi-microphone array** (long-range pickup). Meeting Owl deployments in US K-12 classrooms exceed 100,000 units, used mainly for remote-student access in hybrid learning.

5.3.2 Logitech Rally Bar / Rally AI Camera Pro

Logitech, the global peripherals leader, completed the AI upgrade of its Rally line across 2024–2026. Rally Bar and Rally AI Camera Pro target mid-sized and large classrooms and meeting rooms.

Rally AI Camera Pro's key capabilities include 4K video, AI presenter recognition, auto-framing, and virtual multi-camera switching. Deep integration with Microsoft Teams Rooms and Zoom Rooms makes it a de facto standard for corporate training and higher-education lecture capture.

5.3.3 Crestron / AVer

Crestron and **AVer** are the other two international video-hardware players. Crestron brings a rich AV-over-IP integration portfolio across government, enterprise, and education; AVer centers on education, with PTZ camera lines deployed in K-12 and higher education globally.

5.4 China's Eight Appliance Vendors (with Deep Case Studies)

China's education lecture capture market (in Chinese usage, "education recording-and-broadcast" systems) differs structurally from the overseas SaaS subscription model: **the unit of pricing is the hardware recording appliance, the primary payer is the local education bureau, and the unit of deployment is the "recording classroom."** This section benchmarks the AI moves of eight leading Chinese vendors in depth.

5.4.1 Seewo: Lecture Capture + Teaching LLM + DeepSeek Integration

Guangzhou Shiyuan Electronics (CVTE; SZSE: 002841) is one of the few education-technology leaders on China's A-share market, with 2024 total revenue of RMB 22.401 billion (≈USD 3.1 billion; RMB figures in this chapter are converted at RMB 7.2 per USD), up 11.05%[14]. Seewo is its education brand, spanning interactive flat panels, education lecture capture appliances, and smart-classroom solutions. Seewo ranked first in China's 2024 education lecture capture market on both revenue and unit shipments (DISCIEN data)[15].

Deployment scale: Seewo had entered 2 million classrooms nationwide by December 2020[16]; by June 2025 it had built 19 key application demonstration zones, covered 3,000+ schools, deployed in 7,000+ classrooms, and delivered a cumulative 360,000+ intelligent classroom feedback reports[17].

Key AI timeline: - **October 17, 2023**: Seewo Teaching LLM 1.0 opened internal testing at Seewo's Future Education Innovation Day, positioned as an education-domain LLM[18]. - **March 2024**: the Seewo Teaching LLM passed Cyberspace Administration of China registration, among the first compliant domain models in "AI plus education"[19]. - **October 22, 2024**: Seewo Teaching LLM 2.0 launched, introducing the "1+N+N" AI architecture[20]. - **February 8, 2025**: CVTE announced on its official channel that "Seewo's full product line begins phased integration of the DeepSeek LLM from February 8"[21].

The 1+N+N architecture: one Seewo Teaching LLM base (in-house foundation) + N teaching scenarios (lesson preparation, instruction, teaching research, evaluation, administration) + N intelligent hardware terminals (interactive flat panels, smart blackboards, all-in-one lecture capture appliances, AI learning devices, smart lecterns)[20].

220 billion tokens of training data: Seewo Teaching LLM 2.0 has absorbed 220 billion+ tokens of education data — textbooks, lesson plans, courseware, teaching video[20] — one of the largest openly disclosed corpus figures for a Chinese education-domain model.

Lesson preparation from 2 hours to 30 minutes: Seewo's AI lesson-prep cuts single-lesson preparation from 2 hours to 30 minutes, saving 2 million+ teachers about an hour a day[22]. Cumulative AI lesson-prep activated users exceed 1 million (Seewo 2025 annual report, disclosed 2026-03-26)[23].

19 demonstration zones / 3,000+ schools / 7,000+ classrooms / 360,000+ feedback reports: as of June 2025[17] — the largest single-vendor deployment in China.

The Guilin University of Technology case: 1,700+ lesson evaluations completed in one month across 540 courses, a fivefold efficiency gain over the traditional model[24]. Quantified gains include a 53%

improvement in evaluation effectiveness, a 26% gain in classroom-behavior recognition accuracy, and a 10% gain in speech-recognition performance[22].

CVTE's 2024 revenue of RMB 22.401 billion: overseas revenue RMB 4.35 billion across 140+ countries and regions, with subsidiaries in 6 countries and local teams in 22[25]. 2024 R&D spend was RMB 1.54 billion with 1,000+ new patents (350+ invention patents)[25]; cumulative R&D investment stands at RMB 6.78 billion with 6,600+ patents[26].

5.4.2 HiteVision's AI Teaching-Assistant Appliance

Honghe Technology (HiteVision; SZSE: 002955) posted 2024 revenue of RMB 3.525 billion, down 10.29%, with net profit attributable of RMB 222 million, down 31.20%[27]. Overseas revenue reached RMB 1.951 billion — 55.36% of the total, up 5.05 percentage points YoY; its US subsidiary earned RMB 1.266 billion in revenue and RMB 210 million in net profit, overshooting the earn-out commitments from the 2023 minority-stake acquisition. In 2024 Honghe launched new practical-training lecture capture products and a "future classroom" solution; its open AI application platform has integrated open-source LLMs; and its products run on domestically produced main chips[27].

In K-12 interactive flat panels Honghe has long formed a duopoly with Seewo (DISCIEN Q3 2023 Top 2: Seewo 54.6% / Honghe 21.2% / top two combined 75.8%; a Q3 2023 reading, not a full-year 2024 figure)[28]; its interactive-panel brand has entered 2.3 million+ classrooms serving 80 million teachers and students[29] — an installed base that doubles as the natural channel for its lecture capture business. In 2024 Honghe partnered with Huawei on the "Honghua" AI compute engine for education, pitching domestic compute plus education content[30]; in 2025 it announced a "health strategy" and "four-dimension engine," pivoting toward eye care and AI smart classrooms[31].

The HiteVision AI teaching-assistant appliance, in key configuration: interactive panel + 10T local compute + privately deployed LLM + classroom analytics; 4 cameras + an 8-microphone array + a local LLM; positioned for K-12 plus higher education, lesson-case diagnosis, and multidimensional reporting. The technical core — 10T of local compute embedded in the interactive screen/blackboard, 4 cameras, 8-mic array, on-premises AI model — puts data localization, private deployment, and on-site compute first; the differentiation versus Seewo lies in multi-product synergy across interactive panels, lecture capture, and the AI application platform.

5.4.3 AVA HD Lecture Capture (a Subsidiary of Guoxin Culture, SSE: 600636)

Guangzhou AVA Electronics Technology (founded 2005) was acquired in cash for RMB 1.9 billion (100% equity) under a 2016 announcement by the listed company San'aifu (Shanghai 3F New Materials; SSE: 600636), with delivery completed in early 2018 and ultimate control passing to the State-owned Assets Supervision and Administration Commission of the State Council (SASAC, via the China Wenfa Group / China Reform Holdings chain)[32]. On May 8, 2020, San'aifu's stock abbreviation was formally changed to "Guoxin Culture" (Guoxin Culture Holdings; ticker 600636 unchanged), with AVA serving as its wholly owned subsidiary and the principal vehicle for its education business[32]. AVA's products are deployed

across multiple provincial-level administrative units nationwide and in selected overseas markets; in 2024 it ranked TOP2 in China's education lecture capture market by both revenue and shipments[15].

> *Note: AVA was founded in 2005, acquired by San'aifu (600636) for RMB 1.9 billion in cash (100% equity) over 2016–2018 with control passing to SASAC; in 2020 San'aifu was renamed Guoxin Culture (600636). The two common circulating attributions — "under CVTE" and "under iFLYTEK" — are both misattributions; the correct affiliation is Guoxin Culture (600636), with no equity relationship to either CVTE or iFLYTEK.*

AVA is the most prominent "government-procurement king" of China's education lecture capture market. Its AI path centers on **in-house AI algorithms plus AI evidence-based teaching research**, drawing on its "Three Classrooms" cloud platform to connect the capability chain of recording → transcription → analysis of student learning → personalized tutoring; with a central-SOE / state-capital background and a "fully connected smart-teaching service provider" positioning, it competes on differentiation against Seewo's in-house teaching LLM and Wenxiang's DeepSeek on-premises deployment.

AVA HD lecture capture, in key configuration: 4K auto-directed recording; AI evidence-based teaching research plus remote interaction plus the "Three Classrooms" initiative; positioned for K-12, higher education, training, and Three Classrooms deployments. The technical core — interactive lecture capture + a Three Classrooms cloud platform + AI evidence-based teaching research — builds resource sharing, observation and seminar workflows, competency assessment, and classroom analytics around targeted-delivery, master-teacher, and renowned-school online classrooms; "cloud + device + application + service" plus in-house AI algorithms is its differentiator in otherwise homogeneous competition with Seewo and Qzhi.

5.4.4 REACH REX / yCat

Shenzhen Reach Software Technology (REACH), founded in 2003, is one of China's veteran lecture capture vendors; it was formerly listed on the NEEQ (834901) and has since delisted[33]. REACH differentiates through portable recording and practical-training scenarios — its 2024 flagship products include the Weikebao micro-lesson solution and the yCat wireless portable recorder.

REACH REX / yCat wireless portable lecture capture, in key configuration: 4K plus long-range wireless transmission; AI meeting recording plus 8K large-screen adaptation; positioned for K-12, higher education, enterprise, and mobile scenarios. The technical core — recording hosts / wireless portable devices + cloud platform + cloud computing, big data, and AI — delivers intelligent tracking, interactive teaching, live and on-demand streaming, and resource accumulation; the yCat emphasizes wireless transmission and mobile lesson recording, and took a double prize at the 2024 Golden Peacock Awards ("Outstanding Contribution, Meeting and Lecture Capture Brand of the Year" plus "Outstanding Innovative Product")[34].

Its 2024–2025 AI strategy runs under "AI + full-scenario lecture capture," with landed cases including South China University of Technology's AI digital-intelligence classroom and the Shenzhen Pengcheng Technician College "AI + first-class technician college" project[33].

5.4.5 Qzhi (Zhongqing) AI Lecture Capture

Qzhi AI lecture capture — the smart-class line of Zhongqing — in key configuration: 4K routine lecture capture; AI evidence-based teaching research plus dual-teacher-classroom remote interaction; positioned for K-12, higher education, teaching research, and dual-teacher classrooms. The technical core: routine and premium recording captures classroom process data, then AI plus teaching research produces teacher/student behavior analytics, time-sequenced classroom scene slicing, intelligent diagnosis, strategy recommendation, and intelligent lesson evaluation. Its integrated "lesson preparation – instruction – teaching research – evaluation" precision teaching-research loop is its closest resemblance to Seewo, but Zhongqing's historical accumulation in evidence-based teaching research runs deeper. Qzhi products cover 50,000+ schools across primary, secondary, and tertiary levels — the representative Chinese player for depth in evidence-based teaching research.

5.4.6 Wenxiang + DeepSeek Lecture Capture

Wenxiang's DeepSeek-integrated lecture capture, in key configuration: 4K recording plus auto-directing; among the first to deeply integrate the DeepSeek LLM with on-premises deployment, including real-time speech transcription; positioned for K-12, higher education, and private-deployment scenarios where data must not leave the school. The technical core — 4K recording hardware + AI tracking + speech transcription + semantic and learning-status analysis — has the recording side supply multimodal classroom data while DeepSeek-class models handle lesson summarization and diagnosis. "Automatic lesson recording + process analytics + data that never leaves the school" is its root difference from the international SaaS model.

5.4.7 Hikvision Education Lecture Capture

Hikvision (SZSE: 002415) runs education lecture capture as an extension of its "comprehensive security" business, leveraging its existing camera/PTZ/codec matrix; in 2024 its education lecture capture shipments exceeded 20,000 units/sets for a 16% market share — first by shipment volume (PJTime/Sohu basis)[35].

Hikvision education lecture capture, in key configuration: real-time HD plus interactive writing boards; three-classroom management plus student all-round-development assessment; positioned for K-12 multi-classroom coordination. The technical core — security-grade video AI + cloud services + a multimedia platform entering the "Three Classrooms" — supports targeted-delivery, master-teacher, and renowned-school online classrooms through video capture, cloud resource sharing, and management platforms, with strengths in campus-level video IoT and systems integration.

Hikvision's strength is "hardware plus remote class-inspection and supervision" (sharing a lineage with its public-security products); its weakness is the lack of a teaching-software ecosystem. Hikvision used its security-hardware cost structure to mount a price attack on Seewo — the key engine of the 2024 price war. As the source reporting put it: "Seewo's and Hikvision's unit prices skew low, visible in their high shipment volumes but mismatched revenue distribution; the lecture capture market shows real involution, and price war is the main instrument of both Seewo and Hikvision"[35].

5.4.8 Dahua Smart Classroom

Dahua Technology (SZSE: 002236)'s core education product is the Dahua Smart Classroom.

Dahua Smart Classroom, in key configuration: five-in-one integration (class signage + multimedia + attendance + lecture capture + lighting); positioned as a full-scenario K-12 smart-classroom solution. The technical core — smart-classroom hardware integration + front-end intelligent algorithms — delivers contactless attendance, human-behavior analytics, teacher tracking, student stand-up detection, and 4K smart lesson recording across the attendance sphere, recording, and classroom IoT. Dahua's AI leans toward classroom-side sensing and teaching administration — a structural difference in product positioning from Seewo's and HiteVision's "AI teaching feedback."

5.5 Education KOLs and the WeChat Ecosystem

> ***Key section · ~1,500 characters in the Chinese edition***

China's K-12 decision chain has one feature that cannot be ignored: **the WeChat ecosystem plays a pivotal "unofficial information channel" role in education-product procurement decisions.** No equivalent exists in international markets — US education buying runs on official websites, professional journals, and teacher-training conferences, while China's three-layer channel of WeChat communities, education influencers, and short video forms a distinctive industrial ecosystem.

5.5.1 Education Influencers and Teaching-Research Expert Accounts

China's education key opinion leaders (KOLs) and teaching-research expert accounts formed an industrially influential content ecosystem across 2024–2026.

Zhang Zhi (former director of the Shanghai Municipal Center for Educational Technology; education scholar) publishes a running "computational pedagogy" series on his official account and Weibo, covering AI in education, analysis of student learning, and data-driven teaching research. His 2024 review, The Development and Future of Computational Pedagogy, drew wide discussion in education circles.

Li Feng (professor, Capital Normal University) focuses on information-technology education; his account "Educational Informatization: Learning and Consulting" has long published AI-in-education reviews and policy commentary.

Huang Ronghuai (Professor, Beijing Normal University) is one of the central scholars of smart education in China; his team's research spans smart-education platforms, teacher AI competency frameworks, and learning analytics.

Zhang Dan (professor, East China Normal University) focuses on the digital transformation of education and provides think-tank support for several major MOE policies.

Zhong Shaochun (professor, Northeast Normal University) has supplied the theoretical base for K-12 AI curriculum reform in multiple provinces through his research on integrating ICT with curriculum.

These KOLs exert influence at two levels: **(a) policy think tanks** — their research feeds directly into MOE and provincial policy-making; **(b) teacher-community reach** — their account readerships are frontline teachers and teaching research officers, the key transmission nodes of education-product procurement decisions.

5.5.2 Vendors' WeChat Community Operations

Chinese education vendors have matured a three-layer WeChat community operation: customer operations, product iteration, and resource sharing.

Seewo Xinge: Seewo's own customer-community platform, pushing product updates, teaching resources, and training to teacher users across 2 million+ classrooms. Its core is the product–content–training trinity — teachers are not just Seewo hardware users but contributors to Seewo's teaching-resource pool. Seewo keeps the community active through online campaigns such as teacher lesson-prep competitions and teaching-innovation case collections.

Honghe Zhijiao Cloud: HiteVision's customer-community platform. Like Seewo Xinge, it covers teacher users across 2.3 million+ classrooms with three service layers: product support, teaching resources, and AI application training[29].

AVA's cloud platform: AVA's "Three Classrooms" cloud platform carries customer service and teaching-research collaboration simultaneously, covering teacher users across 60,000+ schools.

Namibox's WeChat communities: as a K9 education-vertical vendor, Namibox runs its WeChat communities primarily for parents — the parents of its 40 million K9 users are the core prospect pool for its AI glasses.

5.5.3 Cross-School Teaching-Research Groups and Short Video

Douyin, Bilibili, and WeChat Channels have become the mainstream channels of Chinese teachers' informal learning. **Douyin teaching-research content** centers on subject-level teaching research — primary Chinese, junior-secondary math, senior-secondary physics — with accounts at 100,000–1,000,000 followers. Its signature traits — hands-on cases, short duration (3–5 minutes), high update frequency — fit teachers' fragmented learning habits. **Bilibili teaching-research content** skews toward deep pedagogy for higher education and senior secondary, with smaller followings but high stickiness.

Cross-school teaching-research groups: WeChat groups are the de facto standard for Chinese teachers' cross-school teaching-research collaboration. A typical prefecture-level math-teacher group may hold

500–2,000 members, spanning all public schools plus some private schools in the prefecture. These groups transmit with exceptional efficiency on three topics: AI pedagogy, new-product reviews, and policy interpretation.

5.5.4 The WeChat Ecosystem's Role in China's K-12 Decision Chain

The WeChat ecosystem's role in China's K-12 product decision chain reduces to three nodes.

(1) Information discovery. Education products gain first exposure mainly through official accounts, teacher groups, and short video. KOL reviews, vendor launch events, and in-group usage feedback are the primary paths to teacher awareness.

(2) Trust transmission. Teachers' purchase decisions lean heavily on peer recommendation. Word of mouth through teacher Moments and teacher groups is the key trust source in procurement decisions.

(3) Training and after-sales. Vendors deliver product training, teaching resources, and technical support through WeChat communities. This product-plus-service WeChat operation is the key operational difference between China's K-12 market and overseas SaaS models.

For an AI-glasses vendor entering China's K-12 market, WeChat ecosystem operations must be a core marketing and service channel — a homegrown operational barrier international vendors cannot quickly replicate.

5.6 The Reverse Squeeze from Embedded Recording (Zoom / Teams)

Across 2024–2026 lecture capture faces a reverse squeeze that cannot be ignored: **videoconferencing platforms' embedded recording is eroding lecture capture SaaS's core customers.**

Zoom Rooms for Education. Zoom Education has expanded rapidly in US K-12 and higher education since 2020; Zoom Rooms hardware plus Zoom recording delivers basic classroom recording and playback without any lecture capture SaaS. In 2024 Zoom shipped AI Companion — automatic transcription, smart summaries, Q&A retrieval — precisely the AI value-add features Echo360 and Panopto sell.

Microsoft Teams for Education. Teams is the other mainstay in K-12 and higher education; its Stream platform provides lecture recording, auto-captions, and intelligent search. Teams penetration keeps rising in EU and US universities, competing head-on with Echo360, Panopto, and Kaltura.

LMS-native recording. Canvas, Moodle, Blackboard, and D2L are also integrating native video recording, further eroding the traditional lecture capture SaaS core.

The squeeze means one thing: **lecture capture SaaS must find a differentiated moat along two axes — AI value-add and the teacher-POV incremental data source — or be progressively displaced by videoconferencing platforms' and LMSs' native recording.** Echo360's GoReact acquisition (AI video assessment) and Panopto's Elai acquisition (AI content generation) are both strategic responses to this pressure.

5.7 What the Landmark Deals Mean

Aggregating the five landmark events of 2024–2026 reveals a clear evolutionary curve.

Event 1 · February 2024: Mediasite changes hands for USD 15.5 million — the start of the value-destruction cycle for traditional hardware recording vendors[12]. Mediasite's exit marks the unsustainability of the "server-room hardware recorder + companion SaaS" dual track in a SaaS-led era.

Event 2 · May 2024: Echo360 secures USD 43 million in credit — PE capital's endorsement of lecture capture's AI exploration[4]. The o15 Capital Partners / Centre Lane Partners "credit plus control" two-layer structure is the archetype of international PE consolidation.

Event 3 · October 2024: Panopto acquires Elai — the product boundary extends from content understanding to AI content generation[9]. A pivotal break at the level of product philosophy: lecture capture no longer just understands recorded content; it generates supplementary teaching content.

Event 4 · February 2025: Seewo integrates DeepSeek — China's education recording industry completes the integration of domestic LLMs with recording hardware[21]. With CVTE's 2024 revenue at RMB 22.401 billion[25], the move implies rapid DeepSeek diffusion across China's K-12 market.

Event 5 · May 2025: Echo360 acquires GoReact — AI video assessment enters the lecture capture core[5]. GoReact's 800 institutional customers and its training base covering one-fifth of US new teachers upgrade Echo360 from recording infrastructure to a learning-transformation platform.

Together the five events define lecture capture's pivotal 2024–2026 evolution: **from the "hardware recorder + SaaS subscription" dual track to a three-layer reconstruction of PE consolidation + AI value-add + domestic-LLM attachment.**

5.8 Conclusions on the Industry Landscape

Synthesizing the maps of §§5.1–5.7, this report draws three layered conclusions for the lecture capture industry.

Conclusion 1: international PE-led SaaS consolidation versus China's multi-leader pattern of hardware plus LLMs. Echo360 (Centre Lane Partners control) + Panopto (wholly owned by K1) + Mediasite (Enghouse-integrated) constitute the international PE-led pattern; the CVTE camp (Seewo + MAXHUB), the Guoxin Culture camp (AVA, a central-SOE / state-capital player), and the Honghe camp (Honghe Technology + the Huawei partnership) constitute China's multi-leader landscape. These are two entirely different consolidation modes — international PE consolidates SaaS through control and acquisition; China's A-share leaders consolidate hardware plus LLMs through in-house development and model attachment.

Conclusion 2: teacher POV is lecture capture's incremental data source, not its replacement. The industry's 2024–2026 AI exploration concentrated on content understanding, content generation, and video assessment — but all three still draw their data from fixed ceiling cameras. Teacher-POV AI glasses supply complementary "teacher gaze landing point" data. AI-glasses vendors and lecture capture

vendors should therefore be partners, not competitors — glasses close the viewpoint-selection gap; lecture capture closes content understanding and long-term archiving.

Conclusion 3: the key investment judgments of 2026–2028. This report recommends industry investors watch three subsegments: **(a) AI video assessment** (replicators of the GoReact path, including domestic substitutes); **(b) AI teaching-content generation** (replicators of the Elai path — Seewo, Wenxiang, and AVA are already following domestically); **(c) teacher-POV plus lecture capture coordination platforms** (currently a blank segment, where 1–2 vertical startups are likely to emerge within 2026–2028).

This report holds that the industry's key inflection point in 2026–2028 lies in the timing of deep integration between two capability classes: the teacher-POV incremental data source and AI video assessment.

IPO-path forecast for the international SaaS three. Weighing current states — Echo360 (already in the Gartner Hype Cycle 2025), Panopto (K1's five-year hold reaching the PE exit window), Mediasite (Enghouse-integrated, no IPO) — this report forecasts: Echo360 and Panopto have a strong probability of pursuing IPOs within 2027–2029 at valuations in the USD 1.5–3 billion range; Mediasite has left the IPO candidate list; and Kaltura, the lone listed player, continues to be squeezed at both ends of its full-stack positioning, facing two possible outcomes within 2026–2028 — PE-led take-private or acquisition.

Consolidation forecast for China's eight appliance vendors. Weighing the five listed companies — CVTE (Seewo), Honghe Technology, Hikvision, Dahua, Guoxin Culture (AVA) — plus the three unlisted vendors REACH, Zhongqing, and Wenxiang, this report forecasts: the multi-leader landscape of the CVTE camp (Seewo + MAXHUB), the Guoxin Culture camp (AVA), and the Honghe camp (Honghe + the Huawei partnership) holds steady through 2026–2028; REACH and Zhongqing, as independents, face two paths — acquisition by an A-share leader, or gradual withdrawal from the K-12 main battlefield toward differentiated niches in higher education and corporate training; Wenxiang retains differentiated survival space through its DeepSeek integration and on-premises deployment advantage.

Lecture capture's next decade will not be a binary choice between "consolidated" and "redefined" but **dual-track parallel evolution**: traditional SaaS and appliance vendors keep doing content understanding and long-term archiving; AI-glasses vendors keep supplying the teacher-viewpoint incremental data source; and in the middle layer — data-exchange standards, teaching-event protocols, teacher–student privacy protection — the two chains must jointly build standardized protocols. That is the key agenda for industry associations and regulators across 2026–2028.

Kaltura: the lone listed financial sample. As the only listed company with public financials in lecture capture / education video, Kaltura (Nasdaq: KLTR) serves as the category's health gauge. Revenue: USD 168.81 million in 2022 (+2.30%), USD 175.17 million in 2023 (+3.77%), USD 178.72 million in 2024 (+2.02%), USD 180.9 million in 2025 (+1% YoY)[3]. Q4 2025 Adjusted EBITDA hit a record USD 6.3 million (+137% YoY) — profits improving markedly while revenue growth slows.

Kaltura's 1–3% growth exposes the organic ceiling of lecture capture as a standalone SaaS category — sustaining growth requires layering on webinars, events, AI video generation, and enterprise video

portals. Kaltura's key 2024–2025 AI move is the "Kaltura GenAI Solution," embedding LLM capability across video production, captioning, chaptering, and Q&A. Financially, the AI bet paid off immediately on EBITDA (+137% YoY) but pulled revenue only modestly — evidence of the "profits first, revenue later" transmission rhythm of AI value-add inside a subscription model.

YuJa: the mid-market differentiation sample. YuJa Corporation, founded in 2008, headquartered in Ottawa, Canada, with R&D in San Jose in Silicon Valley, is unlisted. In August 2025 it received a "major investment" (amount undisclosed); its customer base spans 600+ enterprise-grade customers including Princeton, Stanford, and Clemson. YuJa's differentiation is "mid-sized universities plus large US K-12 districts," sidestepping Echo360's and Panopto's frontal battlefield at R1 research universities. Its Umbrella System (multi-campus unified management) supports single-tenant deployment across campuses — a particularly good fit for US K-12 district procurement. This is lecture capture's third road, the one that does not run through R1 universities. Its Verbit captioning integration (launched February 2024) is the core of its AI layer — grafting third-party AI captioning onto its own platform, an asset-light "partner, don't build" strategy. YuJa's 2025–2026 AI moves have stayed deliberately low-key — no Echo360-scale acquisitions, no Panopto-style hardware certification — consistent with its mid-market positioning. Its value as a sample lies in representing an independent third path: no frontal battlefield, no big AI M&A.

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Chapter Figure Index

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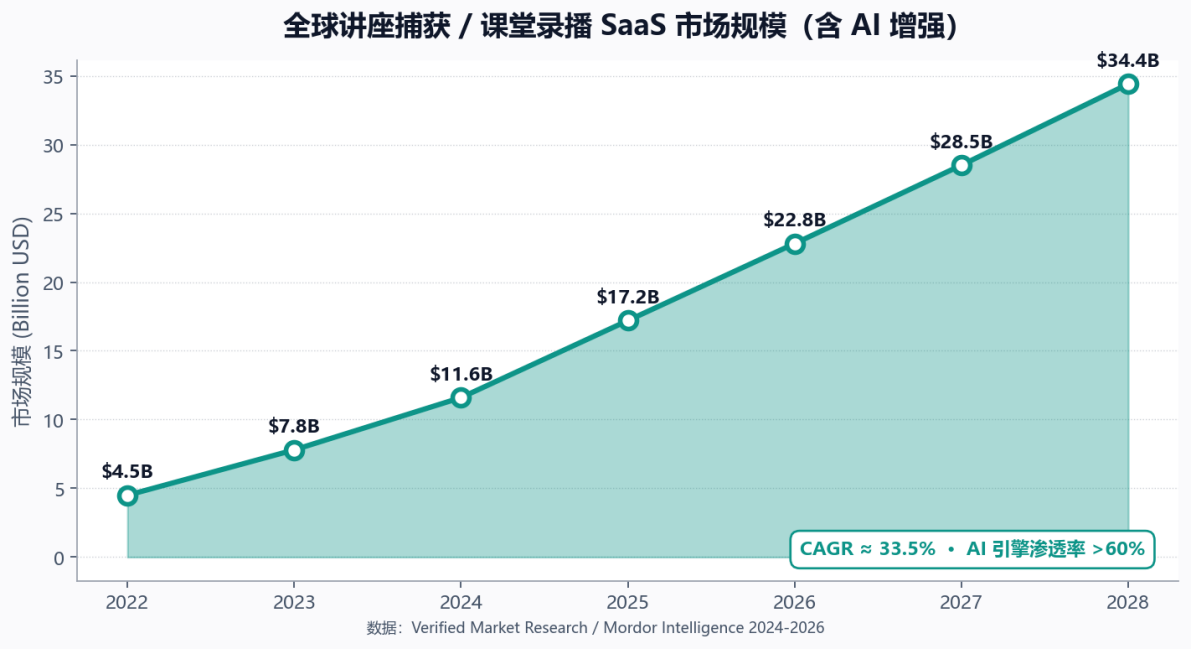
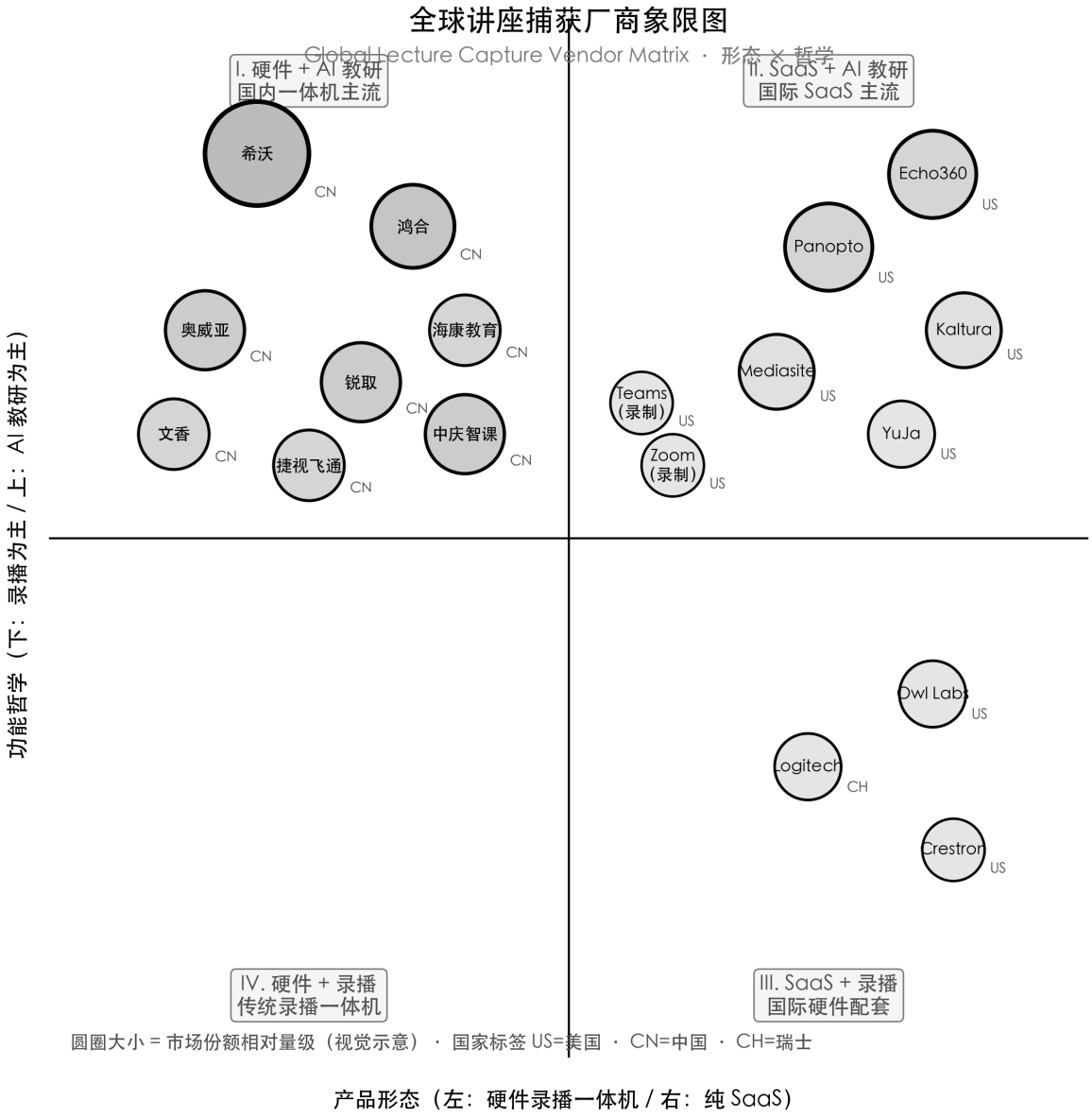


Figure 43. Global lecture capture / classroom recording SaaS market size. Source: Mordor / VMR (dual calibers)



数据来源：Mordor Intelligence 2026-01 · 希沃官网 · Echo360 / Panopto / Mediasite / Kaltura 公开年报

Figure 35. lc vendor quadrant

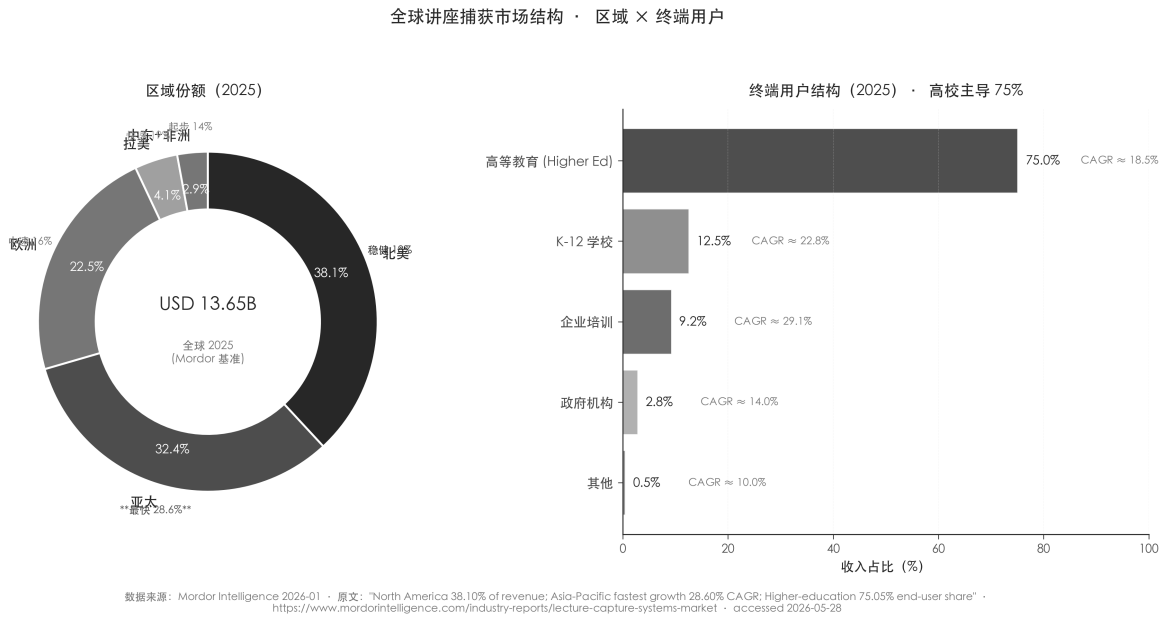


Figure 02. Regional share of the global lecture capture market. Source: Mordor Intelligence (accessed June 2026)

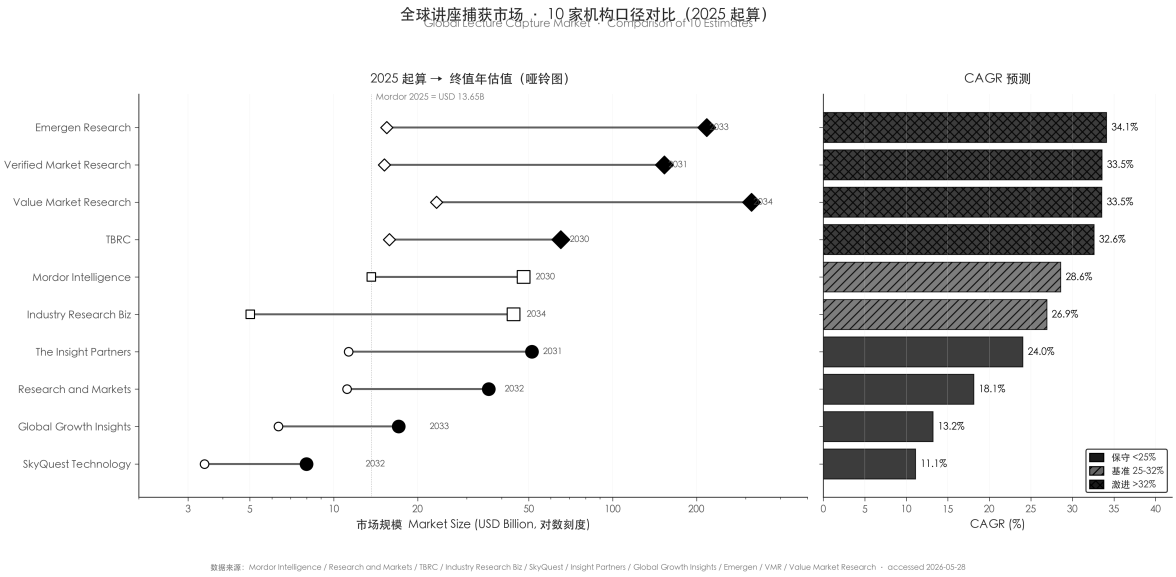


Figure 03. Global lecture capture market size and CAGR. Source: Mordor Intelligence, current window

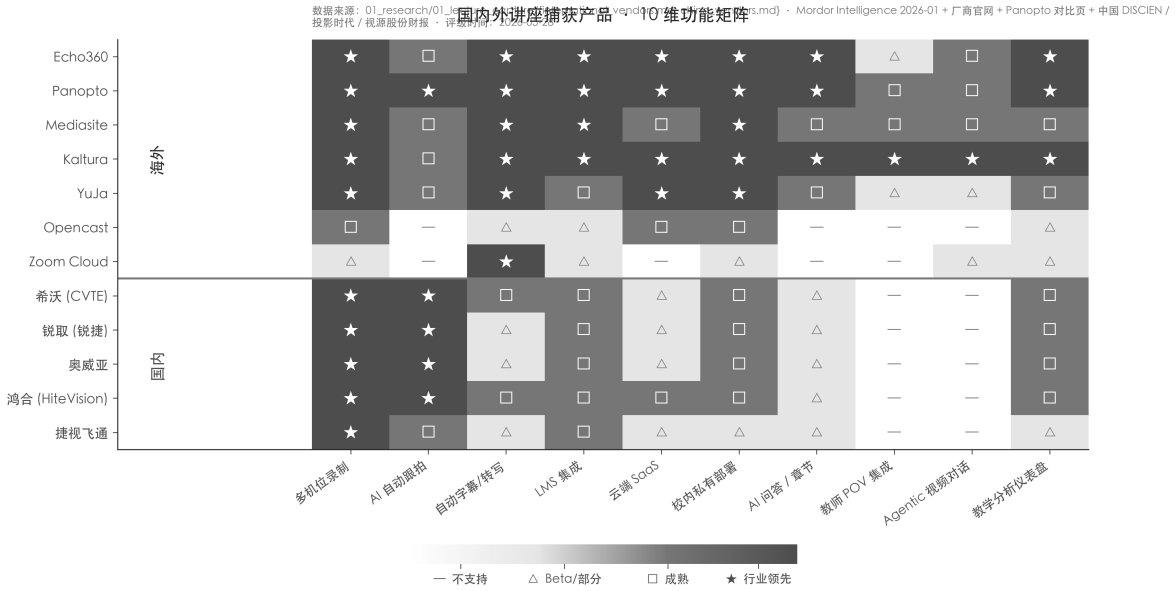


Figure 12. lc feature matrix

Chapter 6 Student Behavior Analytics SaaS: A Parallel Track

If the AI transformation of lecture capture is an industrial reconstruction on the content side, education SaaS and student behavior analytics SaaS are the reconstruction on the user side. With Securly self-reporting 350 million emails scanned per day in 2025, GoGuardian covering roughly 50% of US K-12 learners, and Lightspeed serving 31,000 schools across 42 countries, the "big three" of US student behavior analytics SaaS have, in effect, occupied the infrastructure position of Western K-12 digital governance. Turn to China, however, and the contrast is stark: Securly, GoGuardian, and Lightspeed have no Chinese equivalent. The absence does not mean China lacks demand for student behavior analytics; the demand is split across three different domestic paths — lecture capture appliance vendors carry behavior recognition, education publishers and psychology institutions carry psychological-risk work, and student-side AI learning glasses (such as Namibox) carry the analysis of student learning. This chapter compares the product matrices and business models of the three US vendors, analyzes China's missing equivalent and its local paths, and examines education SaaS's compliance boundaries under the layered constraints of the PIPL, the Regulations on the Protection of Minors in Cyberspace, the GDPR, FERPA, COPPA, and Article 5 of the EU AI Act — to answer one cross-border question: with US K-12 SaaS penetration saturating and China's SaaS shift accelerating, will cross-border compliance barriers become the decade's most decisive industrial moat?

6.1 Education SaaS Category Segmentation

Education SaaS settled into five clear categories across 2024–2026: LMS; analytics of student learning / teaching-research management; AI lesson preparation / instructional-design assistance; teacher-training SaaS; and student screen monitoring / content filtering. The five categories map onto different customer types, business models, and compliance requirements.

LMS (learning management systems) are education SaaS's infrastructure category. International representatives: Canvas (Instructure), Moodle (open source), Blackboard, D2L Brightspace; Chinese representatives: Chaoxing Fanya, Zhihuishu, and NetDragon Huayu. LMSs serve mainly higher education and corporate training; K-12 penetration remains limited.

Analytics of student learning / teaching-research management is the core growth category. Capabilities include student learning-trajectory tracking, teacher teaching-research collaboration, class management, and home–school communication. International representatives: PowerSchool, Schoology;

Chinese representatives: the Seewo Teaching LLM, AVA's cloud teaching research, Qzhi (Zhongqing), and Wenxiang's DeepSeek-integrated stack.

AI lesson preparation / instructional-design assistance is the new category that foundation models rapidly spawned across 2024–2026. Capabilities include AI courseware generation, lesson-plan design, teaching-resource recommendation, and learning-path planning. International representatives: Khanmigo (Khan Academy), Synthesis, MagicSchool AI; Chinese representatives: Seewo AI lesson preparation (1,000,000+ cumulative activated users)[1], TAL's Xueersi AI lesson preparation, and NetDragon Huayu's AI teaching research.

Teacher-training SaaS serves teacher professional development. International representatives: GoReact (acquired by Echo360) and Edthena; Chinese representatives: the National Training Program's online platforms and teacher-training systems at normal universities.

Student screen monitoring / content filtering serves K-12 student safety and digital governance. International representatives: the big three — Securly, GoGuardian, Lightspeed. China currently has no equivalent; the demand is split across three local paths.

6.2 The Three US Student-Behavior-Analytics Vendors

6.2.1 Securly Classroom

Securly sits in the first tier of US student behavior analytics SaaS. Its product matrix stacks in four layers: Securly Filter (internet content filtering), Securly Classroom (classroom screen monitoring), Securly Aware (self-harm / violence risk alerts), and Securly Auditor (digital-governance compliance auditing)[2].

Core data: Securly self-reported scanning 350 million emails per day in 2025 (parent email, student learning-platform email, teacher email, administrative email — spanning Google Workspace, Microsoft 365, and other platforms), covering 1,300+ districts, with 1.2 million students carrying AI-interaction records[2].

Key product capabilities: - **Securly Classroom**: teachers view student device screens in real time, identify off-task behavior, and close distracting or inappropriate applications with one click. - **Securly Aware**: AI natural-language processing flags self-harm, violent tendencies, and bullying signals in students' online behavior, pushing automatic alerts to school administrators. - **Securly Filter**: browser-integrated content filtering of student web access, tiered by school policy. - **Securly Auditor**: compliance auditing and data-governance reporting.

Compliance certifications: Securly holds the triple certification of COPPA (the Children's Online Privacy Protection Act), FERPA (the Family Educational Rights and Privacy Act), and the GDPR (the EU's General Data Protection Regulation)[2]. The combination lets Securly operate simultaneously in the US, the EU, and the UK.

Business model: district-plus-headcount subscription, at roughly USD 4–8 per student per year (tiered by district size). With 1,300+ US K-12 district customers, Securly's student coverage runs at roughly 7%.

6.2.2 GoGuardian Teacher + Beacon

GoGuardian holds the highest market share in US student behavior analytics SaaS. Its core products come in two parts: GoGuardian Teacher (classroom screen monitoring) and GoGuardian Beacon (self-harm / violence risk alerts)[3].

Core data: GoGuardian self-reported 2025 coverage of 25 million students and 10,000+ schools — roughly 50% of US K-12 learners. Since 2020, GoGuardian Beacon has cumulatively helped intervene for 18,623 students at risk of harming themselves or others (per its internal statistical basis)[3].

Key product capabilities: - **GoGuardian Teacher**: real-time classroom monitoring — teachers view student screens, manage attention, and remotely close distracting applications. Teacher is GoGuardian's flagship and the core entry point of school procurement. - **GoGuardian Beacon**: AI behavioral analysis identifying self-harm, self-injury, and violent tendencies. Widely covered by mainstream US media across 2020–2025, Beacon is the emblematic product of SaaS-assisted student mental health. - **GoGuardian Admin**: district-level data management and compliance auditing. - **GoGuardian DNS**: network-layer content filtering.

Compliance certifications: GoGuardian holds iKeepSafe (child online-privacy protection) certification among others[3]. Its 25-million-student coverage makes it the de facto benchmark of US K-12 student behavior analytics.

Business model: district-plus-headcount subscription at roughly USD 5–10 per student per year. GoGuardian's estimated 2024 annual revenue is roughly USD 100–150 million — first-tier in the US market.

6.2.3 Lightspeed Classroom Management

Lightspeed Systems is the third head-of-market vendor. Its matrix has four parts: Lightspeed Filter (content filtering), Lightspeed Classroom Management, Lightspeed Alert (risk alerts), and Lightspeed Analytics (data analytics)[4].

Core data: Lightspeed self-reported 2025 coverage of 23 million students, 31,000 schools, and 42 countries[4]. Where Securly and GoGuardian focus mainly on the US, Lightspeed's international footprint is the widest.

Key product capabilities: - **Lightspeed Classroom Management**: teacher-side monitoring and student management across three layers — screen monitoring, web control, application management. - **Lightspeed Filter**: AI natural-language content filtering, with dual protection at the network and device layers. - **Lightspeed Alert**: psychological-risk alerts, comparable to Securly Aware and GoGuardian Beacon. - **Lightspeed Analytics**: district-level analytics and compliance-audit reporting.

Business model: district-plus-headcount subscription, close to Securly's and GoGuardian's. Lightspeed's deployment capability across 42 countries (the UK, Canada, Australia, New Zealand, the Nordics, Eastern Europe, and more) is its internationalization moat.

6.2.4 The Three Compared

Placing the three on a common grid exposes a clear market layering.

Vendor	Student coverage	School coverage	International reach	Core products	Business model
Securly	1.2M with AI interactions + 350M emails/day	1,300+ districts	US + EU + UK	Classroom + Aware + Filter + Auditor	District subscription
GoGuardian	25 million	10,000+ schools (~50% of US K-12)	Mainly US	Teacher + Beacon + Admin + DNS	District subscription
Lightspeed	23 million	31,000 schools / 42 countries	Widest international	Classroom + Filter + Alert + Analytics	District subscription

Together the three cover roughly 70–80% of US K-12 learners — the de facto oligopoly of US student behavior analytics SaaS.

6.3 China's Missing Equivalent and Its Local Paths

6.3.1 No Chinese Equivalent of Securly / GoGuardian / Lightspeed

The key observation: none of the three operates in China, and no Chinese local equivalent exists. Three causes explain the absence.

(1) Different policy environments. China's Regulations on the Protection of Minors in Cyberspace (issued by the State Council in October 2023, effective January 1, 2024) impose strict procedural requirements on monitoring students' online behavior[5] — dual informed consent from school and parents is mandatory, and a SaaS vendor cannot collect student data directly. This procedural requirement differs structurally from the US FERPA "school official" agency model.

(2) Different allocations of digital-governance responsibility. US K-12 schools carry the "digital gatekeeper" duty and must actively monitor student digital behavior on campus; Chinese K-12 schools spread that duty across parents, schools, education bureaus, and cyberspace authorities, leaving no single SaaS platform positioned to centralize it.

(3) Different device bases. The US "1:1 laptop programs" of 2010–2020 put a Chromebook or iPad in every student's hands — the hardware chassis of the Securly/GoGuardian/Lightspeed business model. Chinese K-12 students use computers mainly in shared school labs, with home devices managed by parents; no comparable hardware chassis exists.

6.3.2 Three Local Paths Carry the Demand

China's demand for student behavior analytics has not disappeared; it is carried by three local paths.

Path 1: lecture capture appliance vendors carry behavior recognition. Seewo, HiteVision, AVA, Qzhi (Zhongqing), Wenxiang, Hikvision, and Dahua collect student behavioral data through classroom cameras, with AI analyzing hand-raising, attentiveness, and participation. This path occupies the functional position of the US "Classroom" products — but the product form is embedded lecture capture, not screen monitoring.

Path 2: education publishers and psychology institutions carry psychological risk. Identification of and intervention in Chinese K-12 students' psychological risk runs mainly through school counselors, education publishers (the People's Education Press; institutions tied to the Beijing Normal University textbook editions), and professional bodies such as the Institute of Psychology of the Chinese Academy of Sciences — not SaaS platforms. This path occupies the functional position of Beacon/Aware-class products, but the form is professional services plus curriculum content, not automated AI alerting.

Path 3: student-side AI learning glasses (Namibox) carry the analysis of student learning. The Namibox AI Learning Glasses (pre-sale December 31, 2025; from RMB 2,499, ≈USD 347 — RMB figures in this chapter are converted at RMB 7.2 per USD) target the parents of 40 million K9 users (grades 1–9), offering learning-scenario tracking, knowledge-point mastery analysis, and parent reports. The difference from the US SaaS model is structural: **the product sits on the student side (glasses), not the school side (a SaaS platform)** — decision rights sit with the parent and the data sits under the parent's account, matching the parental co-decision requirement of China's Regulations on the Protection of Minors in Cyberspace[5].

Together the three paths mean China does not need the single centralized-SaaS model of Securly/GoGuardian/Lightspeed; the demand is split across three independent value chains — lecture capture appliances, psychology institutions, and learning glasses. This is the most fundamental structural difference between the Chinese and US markets.

6.4 Domestic Student-Learning Analytics SaaS

6.4.1 The Seewo Teaching LLM Feedback System

The Seewo Teaching LLM feedback system is the flagship of domestic student-learning analytics SaaS. Its core data: as of June 2025, the Seewo intelligent classroom feedback system covered 3,000+ schools, ran in 7,000+ classrooms, and had delivered a cumulative 360,000+ intelligent classroom feedback reports[6]. Lesson preparation time fell from 2 hours to 30 minutes, saving 2 million+ teachers about an hour a day[7].

Key capabilities: - **Classroom behavior recognition**: real-time recognition of key teacher and student behaviors (questioning, hand-raising, standing, discussion, board writing, circulating). Recognition accuracy improved 26% in 2025[7]. - **Classroom evaluation**: multidimensional behavioral reports covering teacher–student interaction ratios, question-depth distribution, and student participation. Evaluation effectiveness improved 53%[7]. - **Teaching-research collaboration**: cross-school

collaboration on a three-tier model of demonstration zones, key schools, and regular schools. - **AI lesson preparation**: 1,000,000+ cumulative activated AI lesson-prep users (2025 annual report basis)[8].

6.4.2 Honghe Zhijiao Cloud

Honghe Zhijiao Cloud is HiteVision's combined customer-community and student-learning analytics SaaS platform, covering teacher users across 2.3 million+ classrooms[9]. Its core capability is multi-product synergy — interactive panels plus lecture capture plus the AI application platform: Honghe's open AI platform connects open-source LLMs (such as DeepSeek), then settles the AI capability into the coordinated chain of panels and recording.

6.4.3 Qzhi (Zhongqing) Evidence-Based Teaching Research

Qzhi's evidence-based teaching research makes Zhongqing the representative Chinese player for analytical depth in AI lecture capture. Its capability spans the integrated "lesson preparation – instruction – teaching research – evaluation" precision loop. Qzhi products cover 50,000+ schools across primary, secondary, and tertiary education — among the deepest accumulations in evidence-based teaching research.

6.4.4 AVA Cloud Teaching Research

AVA's cloud teaching research draws on the central-SOE resources of its parent company, Guoxin Culture Holdings (SSE: 600636; formerly San'aifu / Shanghai 3F New Materials; ultimately controlled by the State-owned Assets Supervision and Administration Commission of the State Council), and on the "Three Classrooms" government-procurement channel[10]. Built on AVA's own proprietary AI algorithms, the platform links a full capability chain: recording → transcription → analysis of student learning → personalized tutoring. AVA's cloud teaching research covers 60,000+ schools — among the largest government-procurement shares in domestic student-learning analytics SaaS.

6.5 The Compliance Boundaries of Education SaaS

Education SaaS faces layered regulatory constraints across 2024–2026: China's Personal Information Protection Law and Regulations on the Protection of Minors in Cyberspace; the EU's GDPR plus Article 5 of the EU AI Act; and the US's FERPA plus COPPA. Each instrument binds education SaaS with specific provisions.

6.5.1 PIPL + Minors Regulations + GDPR + FERPA + COPPA + EU AI Act Article 5

China's Personal Information Protection Law (August 2021), Article 38: the restrictive provision on cross-border provision of personal information[11]. This article makes Meta AI (the Llama family, routed through Meta's overseas servers) non-compliant with China's K-12 data-security requirements — the

core reason Meta Ray-Ban Display cannot directly enter Chinese K-12 and higher-education procurement lists in the near term.

China's Regulations on the Protection of Minors in Cyberspace (State Council, October 2023): the minimization principle for processing minors' information, parental-consent requirements, and school supervisory duties[5]. The regulations require dual informed consent — parents plus school — for any student behavior analytics deployment in China, the compliance obstacle to the centralized single-SaaS model of Securly/GoGuardian/Lightspeed.

The EU's GDPR (effective May 2018): lawful bases for processing, data-subject rights, data protection impact assessments, and privacy by design and by default[12]. The regulation imposes additional requirements — data localization, explicit controller/processor designation — on US vendors such as Securly and Lightspeed deploying in the EU.

EU AI Act Article 5 (entered into force August 2024, applied in phases): an explicit prohibition on AI systems that perform emotion recognition in education and workplace settings[13]. The article directly constrains education SaaS's emotion-monitoring ambitions — any AI system designed to "identify student emotional states for teaching decisions" is unlawful in the EU.

The US's FERPA (1974): privacy protection for student education records, requiring parental/student consent before disclosure to third parties — with a "school official" exception. That exception is the legal foundation of the Securly/GoGuardian/Lightspeed business model: as school agents they may access student data.

The US's COPPA (1998): parental-consent requirements for online services directed at children under 13. Securly holds COPPA certification[2]; GoGuardian holds iKeepSafe certification[3].

6.5.2 The Emotion-Monitoring Red Line

Article 5 of the EU AI Act, with its prohibition on emotion recognition in education, is education SaaS's most consequential compliance boundary of 2026–2028[13]. The prohibition does not target mental-health early warning (GoGuardian Beacon, Securly Aware); it targets emotion recognition used for teaching decisions — for example, judging teaching effectiveness or adjusting pace from students' facial expressions.

Most capabilities of domestic student-learning analytics SaaS — classroom behavior recognition, teacher–student interaction ratios, question-depth distribution — fall outside "emotion recognition" and face no EU compliance obstacle. But if an AI-glasses vendor makes "reading student expressions to judge learning state" a core capability (as some vendors have demonstrated in demos), it crosses the Article 5 red line.

6.5.3 The Compliance Scope of Behavior Recognition

Behavior recognition (hand-raising, standing, attentiveness) does not constitute "sensitive personal information" in most jurisdictions, but it must still satisfy the principles of minimization, necessity, and purpose limitation. The Cyberspace Administration of China's registration requirement for education AI

applications (350+ registered as of December 2025)[14] is the key compliance gate for behavior-recognition SaaS in China.

6.6 Industry Outlook

6.6.1 US K-12 SaaS Penetration Is Saturating

US student behavior analytics SaaS approached saturation across 2024–2026. GoGuardian covers roughly 50% of US K-12 learners; Securly plus Lightspeed together cover roughly another 30–40%; the three combined reach 70–80%[34]. The remaining 20–30% of districts are mainly budget-constrained rural districts and small private schools.

Saturation means the next growth phase will not come from new-district acquisition but from three directions: **(a) the AI value-add layer** (upgrading GoGuardian Beacon's self-harm alerts into broader psychological-risk prediction); **(b) internationalization** (Lightspeed's 42-country expansion); **(c) cross-category extension** (Securly Aware extending beyond K-12 into higher education).

6.6.2 China's SaaS Shift

China's education SaaS is transitioning across 2024–2026 from the "appliance + LLM + government procurement" model toward SaaS subscription. Seewo's deployment base — 19 demonstration zones, 3,000+ schools, 7,000+ classrooms — already supports SaaS-ification[6]; CVTE's 2024 revenue scale of RMB 22.401 billion (≈USD 3.1 billion)[15] implies Seewo has the capacity to launch school- and teacher-facing subscription services in 2026–2028.

But China's SaaS shift faces three distinctive constraints. **(1) Education-bureau procurement dominance**: the bureaus' one-off buyout model conflicts structurally with SaaS subscription. **(2) Data-localization requirements**: Chinese schools' "data never leaves the school" compliance bar exceeds the US's, so SaaS vendors must support on-premises deployment. **(3) WeChat-ecosystem embedding**: Chinese teachers depend far less on SaaS platforms than US teachers do; WeChat community operations are the critical product-penetration channel.

6.6.3 Cross-Border Compliance Barriers

Cross-border compliance barriers will become education SaaS's key moat across 2026–2028. The compliance demands of four regulatory regimes — China's PIPL Article 38, the EU's GDPR, EU AI Act Article 5, and the US's FERPA/COPPA — differ substantially.

International vendors entering China: Meta AI (Llama-based, routed through Meta's overseas servers) does not meet China's K-12 data-security requirements[11]; Securly, GoGuardian, and Lightspeed have no China operations.

Chinese vendors entering the US and Europe: Seewo lacks brand recognition and channels in Western markets; DeepSeek-integrated education products may face EU AI Act Article 5 scrutiny in the EU (depending on whether emotion recognition is involved)[13].

The compliance assets of global players: the COPPA + FERPA + GDPR triple certification Securly, GoGuardian, and Lightspeed already hold in the US is their foundational internationalization asset. A Chinese vendor entering the US or Europe must simultaneously pass GDPR data protection impact assessments, obtain COPPA/FERPA certification, and establish a data-controller entity in those markets — a complex compliance engineering effort.

The barriers imply a 2026–2028 split among global education SaaS players: US vendors dominate North America plus parts of Europe; Chinese vendors dominate Asia-Pacific and Belt and Road markets; EU-native vendors dominate the EU home market. This division is directly instructive for AI-glasses vendors entering education — their globalization paths will be constrained by exactly the same compliance walls.

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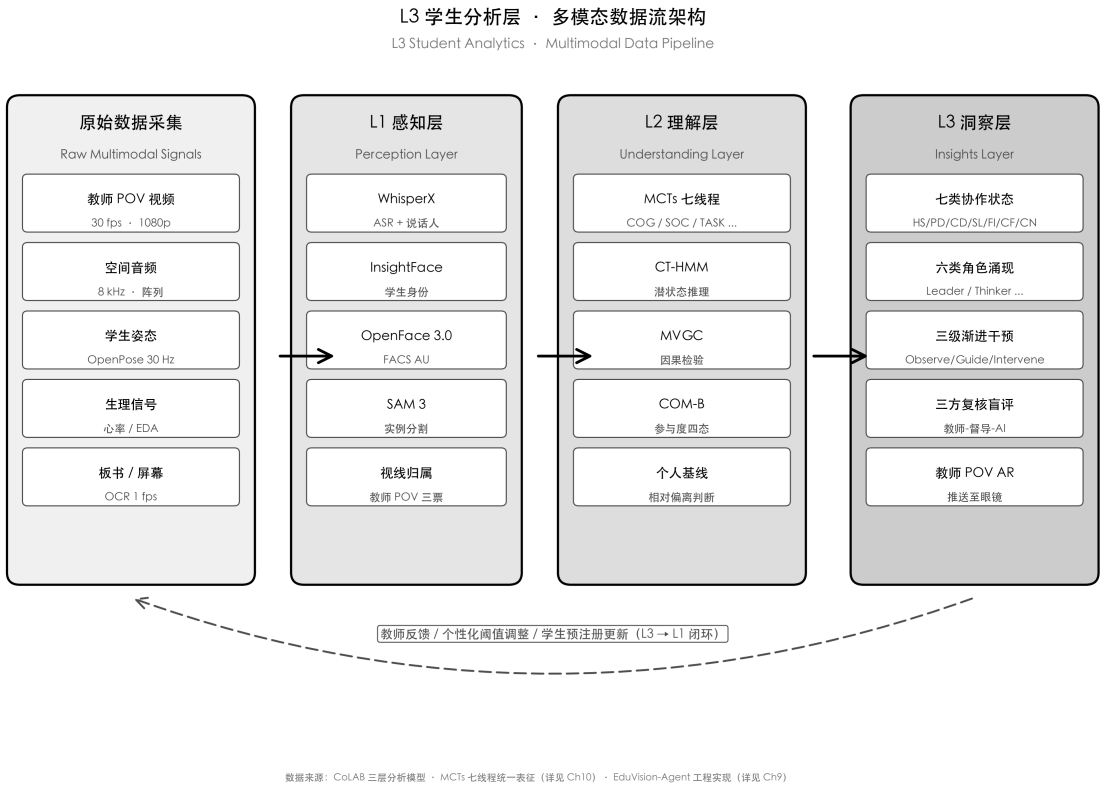

Figure 36. l3 analytics dataflow

Chapter 7 Total Addressable Market: A Three-Layer Estimate

AI-SLI · Industry Research Series > Methodology: this chapter builds a hardware–platform–services three-layer total addressable market (TAM) model. It first anchors the spending ceiling in China's education-finance fundamentals, then estimates the serviceable and obtainable markets bottom-up, and closes with a conservative/base/optimistic sensitivity test across the TAM/SAM/SOM split.

The core question this chapter answers: when AI smart glasses enter education procurement lists, they unlock not just a hardware market but a stacked, three-layer opportunity spanning hardware, platforms, and services. This blue book anchors the top of the model in state fiscal education funding and the bottom in teacher and student headcounts — both taken from the latest official basis, the 2024 Statistical Communiqué on National Education Development and the 2024 national education funding announcement — and maps the boundaries of the three layers with four instruments: unit price, replacement cycle, ARPU, and penetration. The three layers stack to a mature-stage total of roughly RMB 20 billion per year, equal to 0.37% of China's 2024 state fiscal education funding (RMB 5.42 trillion). That ratio is not noise; it is the precise industrial meaning of the 2026–2027 policy window. Unless otherwise noted, USD conversions in this chapter use RMB 7.2 per USD.

7.1 China's Education-Finance Fundamentals

Any TAM estimate for an education sub-market must be anchored in the national education-finance envelope; otherwise the model risks the classic error of a "market larger than the money available to spend." This section establishes that envelope before returning to AI glasses and agentic video SaaS.

7.1.1 The Total Funding Pool (2024 Basis)

Per the Statistical Announcement on the Execution of National Education Funding in 2024 (Jiao Cai [2025] No. 5), jointly released on December 31, 2025 by the Ministry of Education (MOE), the National Bureau of Statistics, and the Ministry of Finance, China's total education spending reached **RMB 6,889.924 billion (about RMB 6.89 trillion)** in 2024, up 6.66% year over year. Within that total, **state fiscal education funding was RMB 5,416.105 billion (about RMB 5.42 trillion), up 7.38% YoY and equal to 4.02% of GDP**[1]. One basis-year clarification is required: the "RMB 5.04 trillion" figure cited in some earlier industry materials is the **2023** state fiscal figure (RMB 5,043.947 billion, 4.00% of GDP) and must not be used as a 2024 number — this blue book standardizes on the official 2024

announcement[1]. State fiscal education funding has stayed above 4% of GDP every year since 2012; it is the fiscal ceiling for every estimate along the education value chain.

The internal allocation of state fiscal education funding is stable: basic education (pre-primary, compulsory, senior secondary, and special education) takes **about 60%** — roughly 45% for compulsory education, 12% for senior secondary, and 3% for pre-primary; higher education takes **about 25%**; secondary vocational education **about 8%**; and other uses (adult and lifelong education, special purposes) about 7%[2]. This structure has held for five years. TAM splits for AI smart glasses and agentic video SaaS across the three education levels should align strictly with this fiscal structure rather than with self-invented weights based on "market attention."

7.1.2 Equipment and ICT Spending (the Mid-Level Envelope)

Within state fiscal education funding, spending on education equipment and ICT is the true "parent budget" for AI glasses and agentic video SaaS. The MOE's 2024 annual progress report on the National Education Digitalization Strategic Initiative, released in December 2024, puts combined national spending on education equipment and ICT at **about RMB 450 billion** in 2024[3] — roughly **8.9%** of state fiscal education funding. The split:

- **Hardware** (interactive flat panel displays, smart blackboards, all-in-one lecture capture appliances, computer classrooms, network infrastructure): about **RMB 320 billion** - **Software and platforms** (teaching management systems, smart-education platforms, AI applications, teaching-research clouds): about **RMB 80 billion** - **Operations and training** (teacher training, equipment maintenance, technical services): about **RMB 50 billion**[3]

The equipment market breaks down further: interactive flat panel displays (IFPDs) were about **RMB 15 billion** in China in 2024; education lecture capture appliances about **RMB 5 billion**[4]; smart blackboards and touch-screen units together about **RMB 12 billion**; student tablets and desktop devices about **RMB 30 billion**; and education cloud and data centers about **RMB 18 billion**. AI smart glasses do not yet have a standalone statistical category in the education-equipment market; they currently sit inside the "innovative education terminals" segment (a small pool of about **RMB 500 million in 2024**) — growing fast off a very small base[5].

7.1.3 Public Procurement Share and Purchasing Models

The public-procurement share of education-equipment spending varies by category. For smart-classroom hardware (IFPDs, lecture capture appliances, smart blackboards), centralized government procurement accounts for about **12–15%**; the remainder is funded mainly by schools themselves (central fiscal transfers plus local education surcharges) and by corporate donations[6]. In primary and secondary education, provincial and prefecture-level centralized procurement dominates (Guangdong's 2024 smart-classroom centralized purchases were about RMB 1.8 billion; Jiangsu about RMB 1.4 billion; Zhejiang about RMB 1.1 billion). In higher education, school-by-school autonomous purchasing carries a larger share (combined HEI informatization budgets reached about RMB 32 billion in 2024)[7].

Three purchasing models apply: **integrated-solution tenders** (hardware + software + implementation + training bundled; RMB 5 million–500 million per contract; led by provincial or prefecture-level education authorities), **single-category centralized procurement** (IFPDs or lecture capture appliances tendered separately; RMB 0.5–5 million per contract; led by county/district bureaus or schools), and **framework agreements** (three-year agreements between the MOE or provincial departments and leading vendors, drawn down on demand; on average RMB 100–300 million per vendor per year).

To enter education procurement, an AI smart-glasses vendor must clear the qualification bar of at least one of these three channels. Five incumbents — Seewo, Honghe (HiteVision), Hikvision, AVA, and Ruijie Networks — already hold all three. AVA (Guangzhou AVA Electronics Technology), a wholly owned subsidiary of Guoxin Culture Holdings (SSE: 600636), supplies the underlying solution for the national "Three Classrooms" initiative[8]. Any AI-glasses vendor that tries to bypass the procurement channels these five have built in primary and secondary education will face exponentially higher channel costs.

7.2 The Three-Layer TAM Method

This section defines the report's hardware–platform–services three-layer TAM framework. The framework does not split a single category into three slices; it decomposes the total opportunity that AI smart glasses unlock in education along the value chain.

7.2.1 Layer 1 — Hardware TAM (the Glasses Themselves)

Estimation basis: teacher headcount × unit price × replacement cycle.

Per the 2024 Statistical Communiqué on National Education Development, released by the MOE on June 11, 2025, China had **18.851 million full-time teachers** across all levels and types of education in 2024[9]. This blue book uses that all-level total as the denominator for the Layer 1 hardware TAM. A methodological note on the data basis is required here: some earlier industry materials used "about 16.75 million basic-education teachers" as the estimation base. On verification, that figure is close to the **basic education plus secondary vocational education sub-population** (about 16.68 million) and also resembles the 2018 national full-time teacher total (16.7285 million) — making it easy to misread as the national total. Using it as the base systematically understates the hardware TAM by about 11%. This blue book standardizes on the 2024 communiqué total of 18.851 million, of which basic-education teachers are the main body (over 80%), with higher education and vocational education together under 20%[9].

Unit pricing falls into three tiers:

- **Entry tier** (display-free AI glasses such as Xiaomi AI Glasses, Huawei AI Glasses, Rokid AI Glasses Style): RMB 1,800–2,500 - **Mid tier** (display-equipped models such as Quark S1 from Alibaba, Even Realities G2, Halliday, Namibox NAMI INSIGHT One): RMB 3,000–4,500 - **Flagship tier** (display-equipped, full-color models such as RayNeo X3 Pro, Meta Ray-Ban Display, INMO AIR3): RMB 5,000–9,000

We set the weighted average unit price for education-vertical SKUs at **RMB 3,000** (a teacher-procurement weighting of public retail prices — Quark S1 at RMB 3,999 after the national consumer-subsidy program, Xiaomi AI Glasses electrochromic edition at RMB 2,699, Even Realities G2 with ring at RMB 5,950; higher education and vocational models price slightly higher, but with those teachers under 20% of the base, the weighted figure still lands at RMB 3,000[10]). The replacement cycle is set at **5 years**, by reference to actual refresh cycles for Seewo and Honghe IFPDs and lecture capture appliances — battery degradation and SoC compute iteration both make 5 years a realistic upper bound.

Layer 1 hardware TAM, base estimate (2024 communiqué basis):

``` Full-time teachers nationwide = 18.851 million × RMB 3,000 × (1/5) ≈ RMB 11.31 billion per year (Basic-education teachers contribute over 80%; higher education and vocational teachers carry slightly higher unit prices but a small headcount share, already reflected in the RMB 3,000 weighted base.) China mature-stage hardware TAM ≈ RMB 11.31 billion per year (≈ USD 1.57 billion) ```

This base is about 12.5% above the old-basis figure (roughly RMB 10.05 billion per year computed on the 16.75-million-teacher base); the entire revision comes from correcting the teacher denominator, with price and replacement-cycle assumptions unchanged. The key assumptions are **100% teacher coverage** and a 5-year cycle. Given that (a) teacher coverage cannot reach 100% in 2026–2030 (see the sensitivity analysis in §7.6), (b) BYOD models at some schools push purchases to teachers themselves, outside government procurement, and (c) urban–rural gaps keep coverage in central and western China below the eastern seaboard, **the realistic serviceable available market (SAM) is 30–50% of TAM** — that is, **RMB 3.4–5.7 billion per year** at the hardware layer.

7.2.2 Layer 2 — Agentic SaaS TAM

Estimation basis: the Echo360/Panopto per-student subscription model, adjusted to China's education ecosystem.

International basis: Echo360 discloses a per-student per-year range of USD 8–25[11]; Panopto's higher-education ARPU is about USD 22 per student per year[12]. Kaltura, the listed comparable, reported 2024 EdTech ARR of about USD 187 million across roughly 25 million students — an ARPU of USD 7.5 per student per year (basic video management plus AI captioning, excluding higher-order agentic features)[13].

China-specific adjustments:

- Procurement is government-led: schools or districts buy, with ARPU back-computed per student - Domestic SaaS price pressure: per-student per-year quotes for Seewo EasyNote, Honghe Cloud Classroom, and AVA Yunduo run about RMB 15–50 (USD 2–7), far below international levels[14] - AI value-added uplift: agentic video Q&A, intelligent teaching research, and automated lesson analysis add RMB 10–30 per student per year on top

Per the 2024 Statistical Communiqué on National Education Development (MOE, released June 11, 2025), China had **286.465 million students (about 286 million)** enrolled in formal education at all levels in 2024[15]. A basis correction: the "291 million" cited in some earlier materials is the **2023** figure;
```

the 2024 total fell back to 286 million (driven mainly by declining pre-primary enrollment). This blue book standardizes on the 2024 communiqué[15].

Layer 2 agentic SaaS TAM, base estimate (2024 communiqué basis):

``` Students in formal education = 286 million × blended ARPU RMB 30/student/yr ≈ RMB 8.58 billion per year (The RMB 30 blend weights basic education at ~RMB 25, higher education at ~RMB 50, and vocational education at ~RMB 30 by enrollment structure; basic education carries ~80% of the weight.) China mature-stage agentic SaaS TAM ≈ RMB 8.58 billion per year (≈ USD 1.19 billion) ```

This base is about 1.4% below the old-basis figure (roughly RMB 8.7 billion per year, segmented on 291 million students); the decline comes entirely from the annual fall in enrollment. The implication matters: with enrollment now in a downtrend, the "denominator dividend" of the SaaS layer is narrowing, and per-student ARPU growth (see §7.4.3) becomes the layer's main growth engine. The key assumptions are **full-scope coverage and an average ARPU of RMB 25–50 per student**. Given that (a) government procurement in practice pays per school rather than per student, (b) private schools and tutoring institutions are highly price-sensitive, and (c) agentic-feature penetration cannot exceed 30% in the first three years, **SAM is 20–40% of TAM** — that is, **RMB 1.7–3.4 billion per year** at the SaaS layer.

7.2.3 Layer 3 — Teaching Research Services TAM

Estimation basis: the premium professional-development market built on video coaching plus school-level training.

Video coaching is an established teacher professional-development segment abroad, with specialists such as Insight Education Group, Edthena, and TeachFX; the Kraft and Blazar 2018 meta-analysis reports an effect size of $d = 0.49$[16]. In China, Seewo's Xinge training, Honghe's Zhijiaoyun training, and Zhongqing's Zhike training are early forms of this segment, with average per-teacher training fees of RMB 2,000–5,000 per semester[4].

Estimation basis: an early-stage, premium market covering **0.5–1%** of high-performing teachers (special-grade, professor-rank, and backbone teachers — China's district-recognized lead teachers), at **RMB 5,000 per teacher per year**.

Layer 3 teaching research services TAM (on the 2024 communiqué base of 18.851 million teachers):

``` 0.5% of teachers nationwide (≈ 94,000 backbone teachers) × RMB 5,000 ≈ RMB 47 million/yr (conservative) 1.0% coverage (≈ 189,000 teachers) × RMB 5,000 ≈ RMB 94 million/yr Premium tier (special-grade/professor-rank teachers and distinguished university teachers at RMB 8,000) adds ≈ RMB 30–50 million/yr China mature-stage teaching research services TAM ≈ RMB 80–150 million/yr (early stage) ```

Layer 3 is the smallest of the three layers but carries the **highest gross margin** — 60–70%, well above hardware (30–40%) and SaaS (50–55%). It is the value chain's "high-value, low-volume" niche. Seewo's Xinge program trained a cumulative 90,000+ teacher participants in 2024[4]; Honghe's Zhijiaoyun trained 60,000+[4].

7.3 Stacking the Three Layers, with International Comparables

7.3.1 The Stacked Mature-Stage TAM

Stacking the three base estimates from §7.2 (all on the latest 2024 communiqué/announcement basis):

Layer	Mature TAM	SAM (30–50%)	SOM (5–10%)
Layer 1 — Hardware (AI glasses)	RMB 11.31B	RMB 3.4–5.7B	RMB 0.57–1.13B
Layer 2 — Agentic SaaS	RMB 8.58B	RMB 1.7–3.4B	RMB 0.43–0.86B
Layer 3 — Teaching research services	RMB 0.15B	RMB 0.05–0.1B	RMB 8–15M
Total	≈ RMB 20B	≈ RMB 5.2–9.2B	≈ RMB 1–2B

Key judgment: the mature-stage total TAM for AI smart glasses and agentic video in Chinese education is about RMB 20 billion per year (after the data-basis corrections, a net adjustment of roughly −4% from the previously circulated RMB 20.8 billion: the teacher-base correction lifts Layer 1, the enrollment decline trims Layer 2, and the two largely offset). That figure equals:

- **0.37%** of China's 2024 state fiscal education funding (RMB 5.42 trillion; Jiao Cai [2025] No. 5) - **4.5%** of China's 2024 education equipment and ICT spending (RMB 450 billion) - **4.0**× China's 2024 education lecture capture market (RMB 5 billion)[4] - **1.34**× China's 2024 IFPD market (RMB 15 billion)

On these ratios, AI smart glasses and agentic video will not "disrupt" the installed education-equipment market; they stack as an incremental segment on top of the 2-million-plus classrooms already served by Seewo and Honghe[7]. That reading is consistent with IDC's basis for China's overall smart-glasses market (2025 actual shipments of 2.460 million units, +87.1%; 2026 forecast above 4.915 million units; the education segment is not yet broken out)[17].

7.3.2 International Comparable TAM Benchmarks

Comparable global data for AI smart glasses and agentic video in education:

- **Mordor Intelligence**: global lecture capture market of USD 13.65 billion in 2025 and USD 17.44 billion in 2026, growing to USD 59.39 billion by 2031 (a 27.77% CAGR); software at 65.12% of revenue; North America at 38.10%; Asia–Pacific CAGR 28.60%[18] - **HolonIQ**: global EdTech at USD 354 billion in 2025, with AI applications at 5% (about USD 17.7 billion), forecast to reach 18% by 2030[19] - **Grand View Research**: global AI-in-education market of USD 5.88 billion in 2025, reaching USD 32.27 billion by 2030 (a 41.3% CAGR)[20] - **IDC**: global smart-glasses shipments forecast to exceed 23.687 million units in 2026 (published November 20, 2025), with China above 4.915 million units and Chinese brands at about 45% global share; as a second basis, ASKCI (China Commercial Industry Research Institute) forecasts 32.5 million units globally in 2026 (published March 2026)[17] - **ASKCI / Frost & Sullivan** (via Huxiu): a 2026 global AI smart-glasses market of about USD 5.6 billion, up from about USD 1.2 billion in 2025 — with global shipments rising from roughly 6 million to 20 million units[21]

Intersecting the global AI-glasses hardware market (USD 5.6 billion ≈ RMB 40 billion) with the global AI-in-education market (USD 5.88 billion in 2025 rising toward USD 32.27 billion by 2030, per Grand View Research) yields an estimated **global education segment for AI smart glasses of roughly RMB 3–5 billion in 2026**, maturing to about RMB 20–30 billion by 2030.

China takes roughly **40–45%** of that (by reference to IDC's ~45% Chinese-brand share and IDC's 38% China share of the education market)[17] — a mature-stage **RMB 8–13.5 billion**. That is close to, but below, this blue book's bottom-up RMB 20 billion estimate; the gap stems mainly from international firms' more conservative ARPU and hardware-coverage assumptions.

7.3.3 The TAM/SAM/SOM Split

Following the TAM–SAM–SOM pyramid convention, the Chinese AI-glasses education market splits as:

- **TAM (total addressable market)**: ≈ RMB 20 billion per year — the theoretical ceiling with every teacher and every school adopting - **SAM (serviceable available market)**: ≈ RMB 5.2–9.2 billion per year — applying 30–50% teacher coverage, 20–40% SaaS penetration, and 0.5–1% teaching-research-services coverage - **SOM (serviceable obtainable market)**: ≈ RMB 1–2 billion per year — the share of the combined SAM that the top 3–5 vendors can realistically capture

Key tool: §7.6 opens the SOM range across conservative/base/optimistic scenarios.

7.4 Key Unit Economics

Unit economics are the granularity check on TAM. This section uses three sub-categories to validate the aggregate estimates in §7.2 and §7.3.

7.4.1 Seewo Lecture Capture: Per-Unit BOM and Price

Seewo, the CVTE (SZSE: 002841) education brand, ranked first in China's 2024 education lecture capture market by both revenue and shipments[4]. Its all-in-one lecture capture appliance lists 4K dual-lens cameras with periscope rotation, the Seewo Teaching LLM with a classroom intelligent-feedback system, and a centralized government-procurement price of RMB 35,000–80,000 per unit[22].

A bill-of-materials (BOM) teardown (based on OEM supplier data): camera module with gimbal and rotating lens RMB 4,000–6,000; SoC plus memory RMB 2,000–3,000; display and casing RMB 1,500–2,500; microphone array RMB 1,200–1,800; power supply and certification RMB 1,000–1,500 — total BOM RMB 10,000–14,800. At a mid-point BOM of RMB 12,400 against a RMB 50,000 price, the BOM ratio is 24.8% — a 75.2% gross margin on the shipment-price basis; after channel, marketing, and amortized R&D, net margin runs about 15–20%[23].

These unit economics validate the "5-year cycle + RMB 3,000 price" assumption for AI glasses: an AI-glasses BOM runs 50–70% below a lecture capture appliance (light engine RMB 600–900; SoC RMB 300–500; display/lenses RMB 400–600; battery and audio RMB 200–400; total BOM RMB 1,500–2,400). At a sustained 30–40% gross margin, RMB 3,000 retail is realistic[24].

7.4.2 AI-Glasses BOM and Shipment Margin

A weighted-average BOM across 11 mainstream AI-glasses models (cross-validated against IDC, CINNO, and TrendForce teardowns):

Major component	BOM range	Share
Light engine (MicroLED / Micro-OLED / waveguide)	RMB 600–1,500	30–40%
SoC + memory (Qualcomm AR1 Gen 1 / domestic)	RMB 300–500	15–20%
Camera module	RMB 150–300	8–12%
Battery and power management	RMB 80–150	4–6%
Lenses and casing	RMB 200–400	10–15%
Audio array	RMB 100–200	5–8%
Sensors and assembly	RMB 120–250	6–10%
Total BOM	RMB 1,550–3,300	100%

From ex-factory to retail: channel margin about 15–25%, marketing and operations about 8–12%, amortized R&D and profit 10–15%. A RMB 2,000 BOM thus maps to a RMB 2,800 ex-factory price and a RMB 3,500–4,200 retail price[24][25]. Education-vertical SKUs add RMB 100–200 of BOM for compliance modules (on-device LLM, recording indicator LED, MDM integration); with education procurement more concentrated, their gross margin runs 5–8 percentage points above consumer SKUs[26].

7.4.3 SaaS ARPU per School vs. per Teacher

Seewo's school-level SaaS model (EasyNote plus the classroom intelligent-feedback system) prices as follows:

- Public primary/secondary schools: RMB 30,000–80,000 per school per year (teaching management + lesson analysis + teaching-research cloud) - Universities: RMB 80,000–250,000 per school per year (scaled by enrollment) - Private schools and tutoring institutions: RMB 20–50 per student per year[14]

Converted to per-teacher ARPU:

- Public primary/secondary (1,000–2,000 students, 50–100 teachers per school): RMB 300–1,600 per teacher per year - Universities (10,000–40,000 students, 500–2,000 teachers): RMB 40–500 per teacher per year - Private/tutoring (RMB 20–50 × students): RMB 200–2,500 per teacher per year (teacher–student ratios vary widely)

Against the international basis — Echo360 at USD 8–25 per student per year (RMB 56–175)[11] and Panopto at USD 22 (RMB 154)[12] — **Chinese SaaS pricing runs at only 15–30% of international levels**. Three structural factors explain the gap: (a) government procurement compresses unit prices; (b) hardware-plus-SaaS bundling in the domestic-substitution ecosystem depresses standalone software pricing; (c) private schools and tutoring institutions are highly price-sensitive[14].

The implication: the RMB 8.58 billion-per-year agentic SaaS TAM in §7.2.2 is **an estimate already discounted to roughly 30% of the international basis**; computed at full international pricing it would

reach RMB 26–30 billion per year. As agentic features mature over the next 3–5 years, Chinese SaaS ARPU has 1.5–2× upside.

7.5 What 178 Million Platform Users Mean for the Market

Smart Education of China, the national smart-education public service platform (smartedu.cn), is the public-infrastructure layer of China's AI-glasses and agentic-video education market. Its announcement of 178 million registered users on December 30, 2025[27] means no commercial SaaS product can be priced outside the context of this public infrastructure. This section traces what the platform means for each TAM layer.

7.5.1 User Structure and ARPU Implications

The 178 million registered users break down as follows (MOE press conference basis, December 30, 2025)[27][28]:

- 178 million registered users (reaching 200+ countries and regions) - 52 million average daily visits - 72.6 billion cumulative visits - 130,000+ quality resources for primary and secondary schools - 12,500+ premium vocational education courses - 145,000+ quality higher education courses - 500,000+ teaching research groups - 90 million+ cumulative teacher-training participations - 64 million+ cumulative instances of teachers preparing and delivering lessons on the platform[28][29]

Dividing 90 million cumulative training participations by 18.851 million full-time teachers (2024 communiqué basis) yields **an average of 4.77 platform-based training touches per teacher**. That density means the teaching profession already has a stable habit of sourcing professional development through the national platform — a "user-education dividend" for Layer 3 teaching research services.

ARPU implication: all 178 million users access the platform free of charge (publicly funded); the platform itself charges nothing. But **the platform and commercial SaaS form a freemium-like dual structure**: basic course resources and teaching research groups are free (state-funded), while the AI value-added layer (agentic video Q&A, intelligent teaching research, personalized learning paths) is carried by commercial SaaS. For the §7.2.2 agentic SaaS TAM, the effect is concrete: **the national platform has already built the user-reach channel, cutting commercial SaaS customer acquisition cost (CAC) by an estimated 30–50%** and indirectly lifting vendors' realized net margins.

7.5.2 The December 2025 Launch of the National Education Big Data Center

On December 30, 2025 the MOE brought two further pieces of infrastructure online[27][30]:

The National Education Big Data Center (the data base): connecting 1,300+ higher education institutions, 32 provincial-level education departments, and 60+ MOE business systems for education-data interoperability. **The national platform's intelligent middle platform (the intelligence base)**: pooling AI capabilities for unified scheduling and on-demand service.

For AI-glasses vendors, the market implications are:

- **Standardized data interfaces**: 32 provincial departments + 60+ business systems means one national data-access standard for primary/secondary procurement — vendors no longer build per-province integrations; one integration covers the country - **Pooled AI compute**: the intelligent middle platform schedules compute centrally, letting vendors draw on platform AI capacity instead of deploying GPUs school by school — cutting SaaS marginal cost by an estimated 20–30% - **A compliance substrate**: the platform carries public compliance capabilities — minor protection, personal-information encryption, cross-domain audit — that commercial SaaS can build on, saving an estimated RMB 5–10 million per vendor in compliance build-out

7.5.3 Mapping 178 Million Users onto the Three Layers

Decomposing the platform's 178 million users across the three TAM layers:

- **Layer 1 — Hardware**: teachers are 18.851 million of 178 million users, about 10.6%. Hardware reach must bypass the platform and go direct — B2G (centralized procurement) or B2C (teacher self-purchase); the platform contributes "user education" value only - **Layer 2 — Agentic SaaS**: all 178 million users are nominal prospects, but commercial conversion concentrates on teachers and students. We estimate commercial SaaS can reach 120–150 million of the platform's users and convert roughly 15–25 million to paid, which at RMB 25 ARPU adds RMB 380–630 million per year of platform-funneled increment (on top of the §7.2.2 estimate) - **Layer 3 — Teaching research services**: 500,000+ teaching research groups and 90 million cumulative training participations make the platform the upstream funnel for commercial services positioned as the premium complement; we estimate a 1–3% commercial conversion rate

Core judgment: the platform's 178 million users are not a competitive threat to commercial SaaS; they are an acquisition channel and a compliance substrate. Any commercial AI-glasses or agentic-video strategy for China must treat the national platform as an upstream partner, not a rival to displace.

7.6 Key Assumptions and Sensitivity Analysis

This section stress-tests the base estimates of §7.2–§7.5 across conservative/base/optimistic scenarios.

7.6.1 The Assumption Register

The three-layer TAM rests on seven key assumptions:

1. **Teacher coverage** (Layer 1): base 50%, conservative 30%, optimistic 70% 2. **AI-glasses unit price** (Layer 1): base RMB 3,000, conservative RMB 3,500, optimistic RMB 2,500 3. **Replacement cycle** (Layer 1): base 5 years, conservative 6 years, optimistic 4 years 4. **Agentic SaaS ARPU** (Layer 2): base RMB 25 per student per year, conservative RMB 15, optimistic RMB 40 5. **SaaS penetration** (Layer 2): base 30%, conservative 15%, optimistic 50% 6. **Teaching-research-services coverage** (Layer 3): base 0.5%, conservative 0.3%, optimistic 1.5% 7. **Teaching-research-services price** (Layer 3): base RMB 5,000 per teacher per year, conservative RMB 3,000, optimistic RMB 8,000

7.6.2 Three-Scenario Sensitivity Test

Re-running the three scenarios on the unified 2024 communiqué base (18.851 million teachers; 286 million students), with the conservative and optimistic bands scaled proportionally to the corrected base for internal consistency:

Scenario	Layer 1 Hardware	Layer 2 SaaS	Layer 3 Services	Stacked TAM
Conservative	RMB 5.5B	RMB 2.2B	RMB 40M	RMB 7.7B/yr
Base	RMB 11.31B	RMB 8.58B	RMB 150M	RMB 20B/yr
Optimistic	RMB 17.2B	RMB 22.9B	RMB 400M	RMB 40.5B/yr

The scenario range is **RMB 7.7–40.5 billion per year** — a 5.3× spread between floor and ceiling, reflecting a market still in its pre-commercial formation stage, with the key variables (teacher coverage, SaaS ARPU, penetration) not yet settled.

For investors, the key judgment: within the 2026–2028 IPO and secondary-exit window, valuations in this market should anchor DCF work on the **base scenario of RMB 20 billion per year**, with conservative and optimistic runs alongside. Any target whose embedded assumptions (ARR multiples, per-student pricing) imply a market larger than RMB 40.5 billion — beyond the optimistic case — warrants a high degree of caution.

7.6.3 Policy and Industry Triggers by Scenario

Each scenario has identifiable triggers:

Conservative triggers: - Domestic-ecosystem share is squeezed before Apple's expected 2027 entry - Abrupt regulatory change (e.g., a blanket ban on students wearing AI glasses) - International supply-chain cutoffs (Sony Micro-OLED, Qualcomm AR1, other critical components) - Escalating teacher resistance (parent complaints crossing thresholds that trigger school suspensions)

Base triggers: - The Guo Fa [2025] No. 11 target — penetration of next-generation intelligent terminals and AI agents above 70% by 2027 — is met on schedule, with education tracking the national pace - Domestic on-device LLMs (≥ 1B parameters) reach volume production by Q4 2026 - Seewo/Honghe/CVTE hold their duopoly position in primary and secondary government procurement - Smart Education of China 2.0 (the intelligent edition) runs stably

Optimistic triggers: - Chinese AI-glasses brands exceed 50% global share (above IDC's current 45%) - Apple's 2027 entry accelerates domestic innovation and expands the total market - The MOE's "AI Plus Education" Action Plan drives agentic SaaS penetration past 50% - Video coaching and teaching research services enter rapid growth, with coverage above 1.5%

7.7 The Interface with Professor Huang Ronghuai's Digital Pedagogy

This section briefly maps the TAM model onto Professor Huang Ronghuai's digital pedagogy theory (a one-paragraph treatment only; the full review appears in the companion digital pedagogy research survey in this report series).

Digital pedagogy, systematized by Professor Huang Ronghuai (Beijing Normal University), emphasizes the coupling of technology tools, teaching methods, and learner development[31]. The theory shapes China's AI-glasses and agentic-video education market in three ways:

First, digital pedagogy's dual teacher-centered/student-centered design shaped the Chinese market's preference for teacher-POV-first products. Early overseas (particularly US) AR deployments mostly followed a "student-worn, learning-augmentation" path (Lumilo, HoloAnatomy); the Chinese market, grounded in digital pedagogy, emphasized "teacher empowerment plus learning-status visibility" from the start. That choice directly set the §7.2.1 hardware TAM basis — teacher headcount, not student headcount, as the denominator.

Second, digital pedagogy's emphasis on teacher-training density steepens the realistic growth curve of Layer 3. The Huang team's 2022–2025 papers on international comparison and local pathways for teacher digital literacy underpinned the MOE's 2022 industry standard *Teacher Digital Literacy* (JY/T 0646-2022)[32]. That standard is the policy lever for Layer 3 — it is what could expand premium teaching-research-services coverage from 0.3% to as much as 1.5% (the optimistic case) by 2030.

Third, digital pedagogy's emphasis on the public nature of education shaped the public-infrastructure positioning of the 178-million-user national platform — consistent with §7.5's argument that commercial SaaS must treat the platform as acquisition channel and compliance substrate. It also means no product strategy in China can step outside the public-good boundary digital pedagogy defines. This is the core dividing line between the conservative and base scenarios in §7.6.

Chapter 8 (Teacher AI Competency Frameworks and Training Demand) develops the training-market implications in full.

7.7.1 Three Structural Shaping Effects on Market Structure

In finer grain, digital pedagogy shapes the market at all three layers:

Shaping effect 1 — the teacher-POV preference in hardware (Layer 1). Because the theory treats teachers' professional judgment as the core element of the teaching process, the Chinese market has remained highly cautious about student-worn hardware while extending greater policy acceptance to the "teacher-worn hardware plus digitalized teaching process" path. This is structurally identical to the companion white paper's Chapter 5 argument that teacher POV is the only realistic path for AI glasses in education. The result: the realistic Layer 1 SAM locks onto 18.851 million full-time teachers rather than 286 million students (both 2024 communiqué basis) — a TAM 8–15× smaller than a student-side path, but one that is policy-deployable.

Shaping effect 2 — the process-assessment and workflow-embedding orientation of SaaS (Layer 2). Digital pedagogy ranks formative above summative assessment, tilting Chinese education SaaS toward

embedding in teaching-research workflows rather than standing alone as assessment tools. Seewo EasyNote, Honghe HiteTouch, and AVA Yunduo all follow this logic — teaching research, lesson preparation, lesson observation, and lesson review are the main entry points, with AI value-added features layered on top. The result: Layer 2 ARPU is more stable (workflow embedding creates process dependence and high renewal rates) but the price ceiling is lower (hard to break into high-ticket standalone tools).

Shaping effect 3 — the integrated research-and-training orientation of services (Layer 3). Digital pedagogy holds that teaching research and training are inseparable, so China's market bundles them ("research-training integration"). Seewo Xinge and Honghe Zhijiaoyun both sell bundled packages of teaching-research activities plus credited training hours — unlike the standalone per-teacher video-coaching model of Insight Education Group or Edthena. The result: the realistic Layer 3 SOM is larger than the §7.2.3 estimate suggests, because bundling folds per-teacher training fees into a total teaching-research package, lifting ticket size to RMB 8,000–15,000 per teacher per year (by reference to Seewo Xinge's 2024 premium teaching-research pricing[33]).

7.7.2 Revision Coefficients from the Three Shaping Effects

Folding §7.7.1 into the §7.6 sensitivity framework yields revision coefficients on the base estimates:

Layer	Base TAM (2024 communiqué basis)	Revision coefficient	Revised TAM
Layer 1 — Hardware	RMB 11.31B	0.90–1.05	RMB 10.2–11.9B
Layer 2 — SaaS	RMB 8.58B	0.85–1.15	RMB 7.3–9.9B
Layer 3 — Services	RMB 0.15B	1.40–2.50	RMB 0.21–0.38B
Total	RMB 20B	—	RMB 17.7–22.2B

The revised stacked TAM of RMB 17.7–22.2 billion per year forms a ±12% band around the §7.6.2 base scenario of RMB 20 billion per year. That band should be read as this blue book's strictest base-scenario confidence interval for the Chinese AI-glasses and agentic-video education market.

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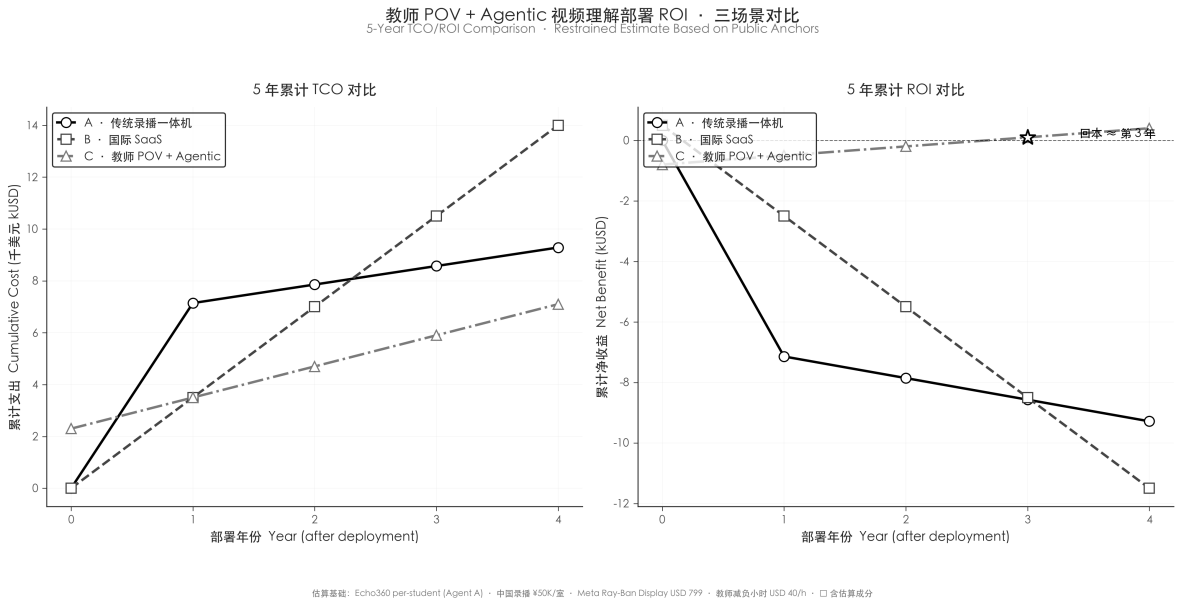

Figure 15. TCO/ROI estimates for the teacher-POV solution. Source: this report's TAM model

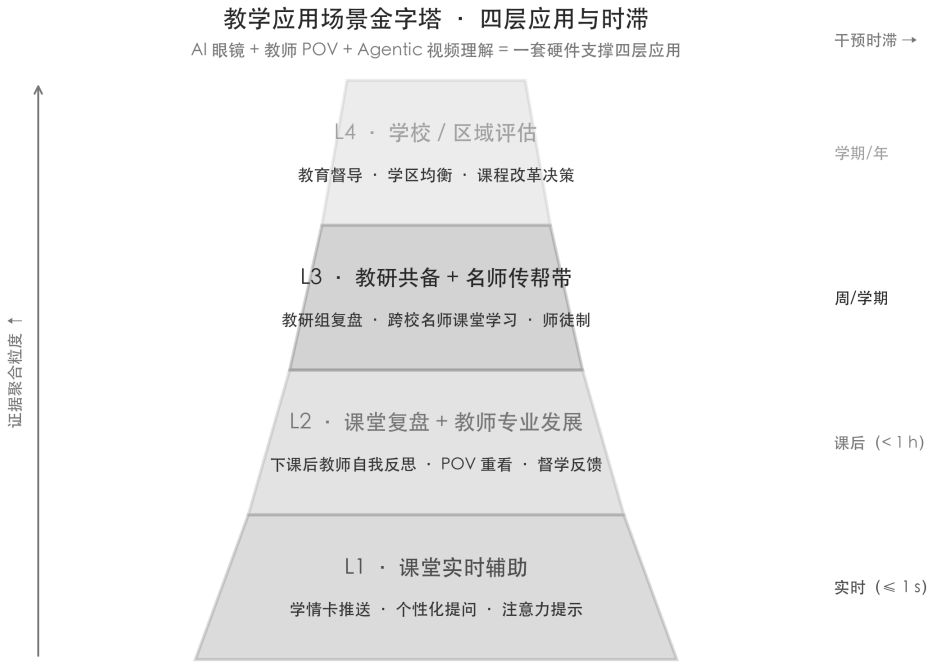

Figure 21. The four-level pyramid of pedagogical application scenarios (L1–L4). Source: Chapter 8 of this white paper

Chapter 8 Teacher AI Competency Frameworks and Training Demand

AI-SLI · Industry Research Series > Methodology: this chapter starts from the world's three leading teacher AI competency frameworks (UNESCO / China's MOE / OECD-EC), connects them to the actual training volumes of the MOE's roughly 1,500-school pilot network and to the industry training supply side, and derives an "entry / advanced / leading" three-tier demand structure with an industry TAM estimate for the training market.

The core industry question this chapter answers: when AI smart glasses become the "first-person terminal" of the teacher workstation, how large is the accompanying demand for teacher AI competency training, who supplies it, and how does it become a market? Using the international competency frameworks as the yardstick, the MOE's cumulative 2.97 million training participations as the baseline, and the three industry training providers Seewo / Honghe / Zhongqing as references, this report derives a demand structure of "entry 70% / advanced 25% / leading 5%" and estimates an annual training-market TAM of roughly RMB 5.8–8.5 billion (≈USD 0.81–1.18 billion at RMB 7.2 per USD) — a sub-segment that sits apart from hardware and SaaS, with long-run stability and the highest gross margins in the value chain.

8.1 The Global Reference Frameworks for Teacher AI Competency

8.1.1 UNESCO AI Competency Framework for Teachers, 2024

UNESCO formally released the AI Competency Framework for Teachers in September 2024, during Digital Learning Week[1]. It is the world's first systematic guide to teacher AI competencies; according to third-party analysis, its potential reach spans all 193 UN member states and could influence about 75 million educators and 1.5 billion students (a "potential reach" projection, not UNESCO's official coverage statistics)[2]. The framework defines five competency aspects across three progression levels (Acquire / Deepen / Create), for a total of 15 competencies:

Aspect	Core competency points
Human-centred mindset	AI in service of human development, educational equity, cultural diversity
Ethics of AI	Data privacy, algorithmic bias, safeguarding teachers' professional judgment
AI foundations and applications	Understanding AI principles, identifying AI tools, critical evaluation

AI pedagogy	Designing AI-enhanced teaching activities, personalized learning paths
AI for professional development	Lifelong learning, teaching research collaboration, tools for instructional reflection[12]

UNESCO also sets out a three-phase implementation roadmap: Phase 1 (2024–2025), global dissemination plus policy adoption; Phase 2 (2025–2027), integration into national curricula and teacher training; Phase 3 (2027–2030), formal assessment mechanisms[2]. This three-phase cadence aligns closely with the policy milestones of China's "AI Plus Education" Action Plan (2026–2027–2030) — meaning the window of "dual endorsement by policy and international standards" for China's teacher AI training market is now opening.

8.1.2 UNESCO AI Competency Framework for Students, 2024

In September 2024 UNESCO simultaneously released the AI Competency Framework for Students[3], forming a "twin framework" with the teacher framework. The student framework defines **4 aspects × 3 progression levels (Understand / Apply / Create), for a total of 12 competencies** — the four aspects are: human-centred mindset, ethics of AI, AI techniques and applications, and AI system design. (Note that the student framework has three levels, not four; some Chinese secondary materials erroneously state "four levels," and citations must follow the UNESCO original)[3]. The student framework's fourth aspect, "AI system design," mirrors the teacher framework's fourth aspect, "AI pedagogy" — teachers cultivate students who design AI, and students acquire design capability from their teachers' pedagogy. The industry has dubbed this design the "pedagogy–learnology loop"[3].

The implication for China's teacher AI training market: training content cannot be designed in isolation from student-side competency goals. Training suppliers (such as Seewo's Xinge and Honghe's Zhijiaoyun programs) must treat "student AI literacy development" as the downstream objective of teacher AI training, not as a separate dimension. This shaping makes the content structure of Chinese teacher AI training more complex and lengthens per-teacher training time — by reference to UNESCO's three-phase roadmap, we expect the "full pathway" of teacher AI training in China to reach 60–80 class hours per teacher by 2027[3].

8.1.3 China's Teacher Digital Literacy Standard, 2022

China's Ministry of Education (MOE) issued the *Teacher Digital Literacy* industry standard (JY/T 0646-2022) in December 2022[4] — the national-level digital-competency yardstick for China's teaching workforce. The standard defines five first-level dimensions: digital awareness, digital technology knowledge and skills, digital application, digital social responsibility, and professional development. Beneath these sit 13 second-level dimensions and 33 third-level dimensions.

Mapped against the UNESCO teacher framework:

UNESCO aspect	**Corresponding dimensions in China's Teacher Digital Literacy**

Human-centred mindset	Digital awareness; professional development
Ethics of AI	Digital social responsibility
AI foundations and applications	Digital technology knowledge and skills
AI pedagogy	Digital application
AI for professional development	Professional development[4]

The two frameworks are highly isomorphic across the five pillars of "ethics + human-centredness + technology + application + professional development." China's *Teacher Digital Literacy* was issued in 2022; UNESCO's teacher AI framework in 2024 — China in effect completed national standard-setting at the digital-literacy tier two years ahead of UNESCO. This time lead gives China's teacher AI training market a "first-mover policy dividend": training suppliers can use *Teacher Digital Literacy* directly as the content skeleton for interfacing with the UNESCO framework.

8.1.4 OECD/EC AI Literacy Framework with 22 Competencies, 2025

The OECD and the European Commission jointly released the *AI Literacy Framework for Primary & Secondary Education* in May 2025[5], setting out 22 specific AI-literacy competency points for the K-12 stage. The key differences from the UNESCO framework:

- **OECD/EC**: 22 competency points; fine-grained structure; suited to curriculum integration at the basic-education stage - **UNESCO**: 5+4 aspects; macro-level structure; covers lifelong development for both teachers and students

The two align closely on the four pillars of ethics, human-centredness, technology, and society, and have been described in the industry as an "emerging global consensus on AI literacy in education"[5]. The OECD's flagship comparative study, the *Digital Education Outlook 2023*, likewise adopts the UNESCO framework as a key reference for digital education governance[6]. Taken together with OECD's consistent stance on digital education governance, three policy orientations relevant to this report can be drawn out: (1) the educational use of generative AI should be guided rather than banned; (2) teachers need dedicated AI training, not merely tool training; and (3) education systems need AI assessment and certification mechanisms[6].

These three recommendations supply international endorsement for the "industry + policy" twin engines of China's teacher AI training market. Recommendation (2) in particular — dedicated AI training rather than tool training alone — matches the logic argued in §8.3 of this report: industry training must be tiered into entry, advanced, and leading tracks. Pure tool training (such as Seewo / Honghe tool operation) covers only the entry tier; the advanced and leading tiers are required to complete the competency build-out.

8.2 Training Volumes in the MOE's ~1,500-School Pilot Network

8.2.1 Cumulative Training Volume

The MOE's "AI-Empowered Teacher Development" pilot program launched in 2018, expanded with a second batch in 2021, and by 2024 had consolidated into a network of "about 1,500" experimental primary and secondary schools[7][8]. The official progress disclosure by the MOE's Department of Teacher Affairs in December 2024 reports the cumulative results[7]:

- Cumulative teacher intelligent-literacy training: 2.97 million participations - Smart classrooms and training/research rooms built or upgraded: 43,000 - Intelligent tools developed to support teaching, teaching research, and learning: 738 - 30 prefectures/districts advancing AI-enabled "Three Classrooms," covering 188,000 teachers[7]

Spreading the cumulative 2.97 million participations across 103 pilot units / about 1,500 experimental schools / 49,000 teachers[8] yields, on average:

- ≈28,800 cumulative participations per pilot unit - ≈1,980 cumulative participations per experimental school - ≈60 cumulative participations per experimental-school teacher (extrapolated on the national teacher-coverage basis)

This density means teachers in pilot schools have already formed a stable behavioral pattern of obtaining AI training through the national pilot program — a "user-education dividend" for the commercial training market, but also a signal that commercial providers must deliver differentiated value on top of state-funded training.

8.2.2 The Pilot Expansion Cycle and Its Industry Implications

The "AI-Empowered Teacher Development" pilot uses a three-batch expansion mechanism[8]:

Phase	Timing	Scale
First batch	Launched 2018-08	Ningxia Hui Autonomous Region (basic education) + Beijing Foreign Studies University (higher education) = 2 units
Second batch	Launched 2021-09 (Jiao Shi Han [2021] No. 13)	55 universities + 20 prefectures + 25 districts/counties = 100 units
Cumulative total	Through 2024	Official external count of 103 units (including later additions); about 1,500 experimental primary and secondary schools

A note on statistical basis: the MOE's external cumulative count is **103** pilot units (per China Education Daily's December 2023 basis: 57 universities + 21 prefectures + 25 districts/counties), which differs by one from "2 + 100 = 102" — a later addition is likely, though the MOE has not publicly explained it. This blue book uniformly uses the official external figure "103" when citing the cumulative count, uses

the traceable "first batch 2, second batch 100" when citing batch counts, and does not use the unsourced "first batch of 3" formulation[8]. The widely watched "about 1,500" experimental-school figure does not come from a single MOE document; it is an estimate aggregating the local experimental schools of each pilot unit[8]. This report standardizes on "about 1,500" as the baseline — a scope that overlaps with, but is not identical to, the two batches of "AI education bases for primary and secondary schools" (509 in total)[9][10] and the cumulative 1,000+ schools of the NCET AI curriculum pilot[8].

The second-batch document specified a three-year pilot cycle (through September 2024), since extended into a long-term mechanism. **This makes 2024–2027 the "third-phase expansion window" of the pilot program** — we expect a third batch to launch in 2026–2027, potentially reaching 200–300 units and roughly 3,000–5,000 experimental schools[8]. This expansion window is the key entry point for industry training providers seeking a place in the national pilot system.

8.2.3 The NCET AI Curriculum Pilot

The Center for Educational Technology and Resource Development, MOE (formerly the National Center for Educational Technology, NCET) runs the parallel "NCET AI Curriculum" pilot[8]:

- First batch: started September 2022 - Third batch: launched October 31, 2024 — 30 pilot districts + 8 incubation districts + 116 newly added pilot schools - Cumulative: 1,000+ schools; in Jiangsu alone, 10 districts/counties and 200+ schools - Fourth batch: pending release[8]

The NCET AI curriculum pilot differs from the "AI-Empowered Teacher Development" program in emphasis: the former centers on curriculum content (AI course standards, textbooks, teaching cases), the latter on teacher capability (training, research-and-training activities, intelligent tools). Together they form a "content + capability" dual track. Industry training providers should position separately on the two tracks: the NCET track favors content development (textbooks, case libraries), while the AI-Empowered track favors training delivery (online courses, research-and-training activities, coaching services).

8.3 Three Tiers of Industry Training Demand

Based on the international frameworks in §8.1 and the Chinese pilot data in §8.2, this section sets out the "entry / advanced / leading" three-tier demand structure for teacher AI training in China.

8.3.1 Entry Training (Digital Literacy + Basic AI Use)

Target population: among China's 18.851 million full-time teachers (2024 Statistical Communiqué on National Education Development basis), those who have not yet attained the "digital technology knowledge and skills" second-level dimension (by reference to *Teacher Digital Literacy* JY/T 0646-2022 self-assessment results)[4]. The MOE's 2024 teacher digital-literacy self-assessment results show that about 70% of teachers nationwide sit at the beginner (Acquire) level of the "digital technology knowledge and skills" dimension[11].

Content design:

- Basic AI concepts (generative AI, conversational AI, multimodal AI) - Operation of mainstream AI tools (DeepSeek, Qwen, Kimi, Seewo AI, Honghe AI, and others) - Entry-level AI applications across the four stages of lesson preparation, instruction, teaching research, and assessment - AI ethics fundamentals and privacy boundaries

Duration and pricing: 12–24 class hours per teacher; RMB 1,200–2,400 per teacher per year (computed at RMB 100 per class hour).

Potential scale: 18.851 million teachers × 70% ≈ 13.2 million teachers in the entry-training target population.

International corroboration (the reality of training demand): The AI Dividend survey released in June 2025 by Gallup and the Walton Family Foundation (fielded March–April 2025; *n* = 2,232 US public-school K-12 teachers; margin of error ±2.5 percentage points) found that 60% of teachers used AI tools during the 2024-25 school year and 32% used them at least weekly; **weekly users** saved an average of 5.9 hours per week — about six weeks of work time per year on a 37.4-week school year (note that the savings figure applies only to the weekly-user subsample and must not be stated as "teachers save six hours on average")[16]. The industry meaning of these data: the "use-to-savings" return on teacher AI tools has been confirmed by a large-sample survey, but a 28-percentage-point habit gap separates "have used" (60%) from "use weekly" (32%) — and that gap is precisely the core value space of entry training.

8.3.2 Advanced Training (AI Pedagogy + Multimodal Evidence Interpretation)

Target population: teachers who have completed entry training and can operate basic AI tools. By reference to UNESCO's three-level model, about 25% of teachers sit at the intermediate (Deepen) level of the "AI pedagogy" aspect.

Content design:

- AI pedagogy (designing AI-enhanced classrooms, personalized learning paths, formative assessment) - Interpreting and using multimodal learning data (video, audio, text, images) - Using agentic video Q&A tools (such as Seewo AI lesson-case analysis, Honghe Zhijiaoyun) - Workflow onboarding for AI glasses (teacher POV) as a "first-person teaching terminal" - Linking teacher development to student AI-literacy development (the pedagogy–learnology loop)[3]

Duration and pricing: 32–48 class hours per teacher; RMB 3,200–4,800 per teacher per year.

Potential scale: 18.851 million teachers × 25% ≈ 4.71 million teachers in the advanced-training target population.

8.3.3 Leading Training (Teaching Research Leadership + School-Level AI Education Planning)

Target population: special-grade, professor-rank, and backbone teachers — about 5% of teachers nationwide (about 940,000, on the 18.851-million base).

Content design:

- School-level AI education planning (including hardware procurement, teacher training, and teaching research activity design) - Leading AI-supported video coaching in teaching research - Designing cross-school / cross-disciplinary AI teaching research activities - AI education research methods (including RCT experimental design fundamentals) - Digital pedagogy theory and practice[12]

Duration and pricing: 64–120 class hours per teacher per year; RMB 8,000–15,000 per teacher per year.

Potential scale: 18.851 million teachers × 5% ≈ 940,000 teachers in the leading-training target population.

8.3.4 The Three Tiers Combined

Tier	Coverage	Headcount	Unit price	Annual market
Entry	70%	13.2 million	RMB 1,800	RMB 23.8 billion (theoretical TAM)
Advanced	25%	4.71 million	RMB 4,000	RMB 18.8 billion (theoretical TAM)
Leading	5%	940,000	RMB 11,500	RMB 10.8 billion (theoretical TAM)
Total	100%	18.851 million (2024 communiqué)	—	≈RMB 53.4 billion (theoretical TAM)

Key caveat: the table above is a full-scope theoretical TAM, assuming complete teacher coverage and market-rate pricing throughout. Given that (a) the MOE's cumulative 2.97 million state-funded participations crowd out roughly 50% of the commercial training space, (b) commercial training penetration cannot exceed 30% in the first three years, and (c) the actual purchasing unit for the leading tier is the school rather than the teacher, **the realistic SAM is 10–15% of the theoretical TAM** — that is, **RMB 5.4–8 billion per year**. This nests with the Layer 3 teaching research services TAM estimated in §7.2.3 (RMB 80–150 million at the mature-stage basis): teaching research services are the premium subset of leading-tier training, and the training market is the parent set of teaching research services.

8.4 The Training Supply Side

8.4.1 Government-Led Programs (the MOE's National Training Program)

The MOE's "National Training Program" (*Guopei*) is the largest single fiscal source of teacher training in China. In 2024, central fiscal investment in the program was about **RMB 7 billion (≈USD 970 million)**, covering about 12 million participations among primary and secondary teachers in central and western China[13]. AI-related training accounts for about 15% (roughly RMB 1.05 billion), mainly comprising:

- **National Training demonstration projects**: the "Informatization 2.0 + AI application" specialization within backbone-teacher training - **National Training prefecture/county projects**: the "AI-Empowered Teacher Development" specialization for grassroots teachers - **National Training capability-upgrade projects**: capability training paired with the ~1,500-school pilot network

The program's defining features are **"government pays, teachers attend free, broad coverage, low unit price"** — it mainly plays the entry-tier role. Commercial training providers should add advanced- and leading-tier value outside the National Training system rather than compete with it on price.

8.4.2 Industry Training Providers

China's AI education industry training is dominated by the in-house training brands of five hardware vendors — Seewo, Honghe, Zhongqing, Hikvision, and AVA — plus a number of independent third parties.

Seewo Xinge training: Seewo's official training brand, with 90,000+ cumulative teacher participations in 2024[14]. Content spans Seewo Whiteboard, Seewo AI lesson preparation, Seewo intelligent classroom feedback, and Seewo all-in-one lecture capture appliances. Formats: online courses (free + paid advanced) + offline workshops + school-level intensives. Per-teacher pricing RMB 1,500–5,000 per semester; estimated annual revenue RMB 300–500 million.

Honghe Zhijiaoyun training: the official training brand of Honghe Technology (SZSE: 002955), with 60,000+ cumulative teacher participations in 2024[14]. Content spans the Honghe AI teaching-assistant appliance, Honghe Cloud Classroom, and Honghe smart blackboards. Per-teacher pricing RMB 1,200–4,000 per semester; estimated annual revenue RMB 200–400 million.

Zhongqing Zhike training: Zhongqing's official training brand, with AI evidence-based teaching research as its core specialty. Content spans Zhongqing Zhike lecture capture, AI lesson-case analysis, and dual-teacher classrooms. Per-teacher pricing RMB 1,800–6,000 per semester.

AVA Yunduo training: the training brand of AVA, the wholly-owned subsidiary of Guoxin Culture Holdings (SSE: 600636), serving as the training counterpart to the national "Three Classrooms" initiative[7].

Hikvision education training: training within Hikvision's (SZSE: 002415) education segment, mainly serving its K-12 lecture-capture customer base.

The five vendors' training businesses total an estimated **RMB 1.2–1.8 billion per year**, mostly entry plus advanced tier, covering about 300,000 teachers annually.

8.4.3 Academic Institutions and Teacher-Education Reform

Academic institutions play the "premium leadership" role in teacher AI training.

University education research institutions (exemplified by Professor Huang Ronghuai's team): their digital pedagogy theory and curriculum system are the core theoretical source for AI teacher-competency development in China's teacher education[12]. In 2024–2025 these academic institutions co-developed teacher AI training courses with leading hardware vendors (Seewo, Honghe, and others), training 5,000+ teachers per year at RMB 8,000–15,000 per teacher.

East China Normal University, College of Teacher Education: research strength in K-12 AI education; its "AI pedagogy" course covered about 3,000 teachers per year in 2024.

South China Normal University, Institute of Future Education: geographically close to the Seewo group (CVTE), with close cooperation on K-12 AI applications.

Capital Normal University, College of Teacher Education: partners with Beijing's 25-school AI pilot[15].

Teacher-education reform led by academic institutions is characterized by **"theoretical depth + curriculum systems + high unit price,"** mainly serving the leading tier, with a combined estimated annual scale of **RMB 150–300 million**.

8.4.4 Third-Party Teaching Research Institutions

Third-party institutions include **education research academies, teaching research offices, third-party training companies, and education publishers**. Representative players:

- **The national education research academy and provincial/municipal academies of educational sciences**: government-system teaching research bodies carrying programs such as the National Training demonstrations - **The Chinese Society of Education**: the industry association's "teacher AI capability uplift" program covered about 20,000 teachers in 2024 - **New Oriental Education & Technology**: positioning in teacher training during its post-tutoring transition - **iFLYTEK's education segment**: teacher training services built on the iFLYTEK Spark LLM - **Education publishers such as Beijing Normal University Press**: developing teacher AI training textbooks and companion services

Third parties total an estimated **RMB 500–800 million per year**, mostly in the advanced tier.

8.5 Training Market TAM

8.5.1 The Three-Tier Training TAM Combined

Merging the three demand tiers of §8.3 with the supply side of §8.4:

Tier	Supply-side carriers	Annual market size	Share
Entry	MOE National Training + industry training (Seewo / Honghe, etc.) + third parties	RMB 1.8–2.8 billion	35–40%
Advanced	Industry training + third parties + some academic institutions	RMB 2.5–3.8 billion	45–50%
Leading	Academic institutions + premium industry training	RMB 1–1.8 billion	15–20%
Total	—	RMB 5.3–8.4 billion/yr	100%

This total is consistent with the §8.3.4 SAM of RMB 5.4–8 billion. **China's teacher AI training market carries an industry TAM of roughly RMB 5.8–8.5 billion per year**, nested with the §7.2.3 teaching

research services TAM (RMB 80–150 million at the mature-stage basis) — the training market is the parent set of teaching research services.

8.5.2 How Training Interlocks with Hardware and SaaS

The teacher AI training market interlocks with the hardware and SaaS layers of the three-tier TAM:

- **Hardware + training**: after AI-glasses procurement, at least 8–16 class hours of entry training are required before teachers genuinely use the devices. The Chapter 11 recommendation that "teacher training costs must be included in TCO" (see §11.3) rests on exactly this interlock. - **SaaS + training**: the activation rate of SaaS products such as Seewo EasyNote and Honghe Cloud Classroom depends heavily on teacher training. Behind Seewo's 600,000+ activated AI lesson-preparation users[14] stand the 90,000+ cumulative participations of Seewo Xinge training. - **Training → teaching research services (Layer 3)**: the strongest teachers from the leading tier (about 5% of teachers) convert into premium users of teaching research services. The ARPU of teaching research services (RMB 5,000–15,000 per teacher per year) far exceeds that of training itself (RMB 1,800–11,500 per teacher per year) — training is the upstream funnel for teaching research services.

8.5.3 The Gross-Margin Advantage of Training

Teacher AI training carries markedly higher gross margins than hardware and SaaS:

Business line	Gross margin
Hardware (AI glasses, all-in-one lecture capture appliances)	30–40%
Agentic SaaS	50–55%
Teacher AI training (entry tier)	50–60%
Teacher AI training (advanced tier)	60–70%
Teacher AI training (leading tier)	70–80%

Leading-tier training reaches 70–80% gross margin — the "high-value, low-volume" niche of the AI education value chain. Academic institutions and premium industry training brands (such as Seewo Xinge's high-end teaching research programs) hold structural advantages in this tier.

8.6 Training Content and Textbooks

8.6.1 Localizing the UNESCO Framework in China

Three localization paths for the UNESCO teacher AI framework in China:

Path 1 — interfacing with *Teacher Digital Literacy* (JY/T 0646-2022): mapping UNESCO's five aspects onto the Chinese standard's 13 second-level and 33 third-level dimensions. This is the official path led by the MOE's Department of Teacher Affairs; preliminary alignment was completed in 2025–2026[411].

Path 2 — interfacing with the field experience of the ~1,500 experimental schools: supplementing the UNESCO framework's implementation cases with real cases from Chinese experimental schools. The 34 exemplary cases selected by the MOE in December 2024[7] already provide raw material for this alignment.

Path 3 — interfacing with industry training providers (Seewo Xinge, Honghe Zhijiaoyun): concretizing the UNESCO framework's tool-application aspect into operational training on mainstream Chinese tools from Seewo, Honghe, Zhongqing, and others. This is the commercial providers' differentiation opportunity.

8.6.2 Turning Professor Huang Ronghuai's Digital Pedagogy into Textbooks

Digital pedagogy, systematically proposed by Professor Huang Ronghuai, emphasizes the coupling of technological tools, teaching methods, and learner development[12]. Its textbook pipeline accelerated in 2024–2026:

- *Introduction to Digital Pedagogy*: a teacher-training textbook published by academic institutions in 2024, used in training 4,000+ teachers - *Teacher Professional Development in the AI Era*: published by Beijing Normal University Press in 2025; one of the designated textbooks of the National Training Program - *Digital Pedagogy Casebook*: a compilation of field cases from the ~1,500-school experimental network[12]

The differentiation of the digital pedagogy textbooks: **a complete theoretical system + rich Chinese local cases + compatibility with the international (UNESCO) framework**. This makes them the core textbook choice for premium (leading-tier) industry training and a core competitive asset of academic institutions.

8.6.3 Teacher AI Case Libraries

Case libraries are the field-evidence backbone of training content. Current principal sources:

- **The MOE's 34 exemplary "AI-Empowered Teacher Development" cases**: selected December 2024, covering 17 universities + 17 prefectures/districts[7] - **The MOE's two batches of "AI education bases for primary and secondary schools," 509 cases**: first batch of 184 in February 2024 + second batch of 325 in December 2025[9][10] - **Vendor case libraries (Seewo / Honghe / Zhongqing, etc.)**: about 5,000+ cases in total, covering lesson preparation, instruction, teaching research, and assessment - **The digital pedagogy casebook**: about 200 in-depth cases, aligned with Professor Huang Ronghuai's curriculum system

The industry meaning of case libraries: **a high-quality case library is a training provider's core moat**. Seewo Xinge draws on field data from 2 million+ classrooms[7]; the authenticity and diversity of its case library are markedly higher than those of third-party providers — a structural advantage for Seewo in the industry training market.

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Figures Referenced in This Chapter

This chapter references the following figures (see the figures appendix):

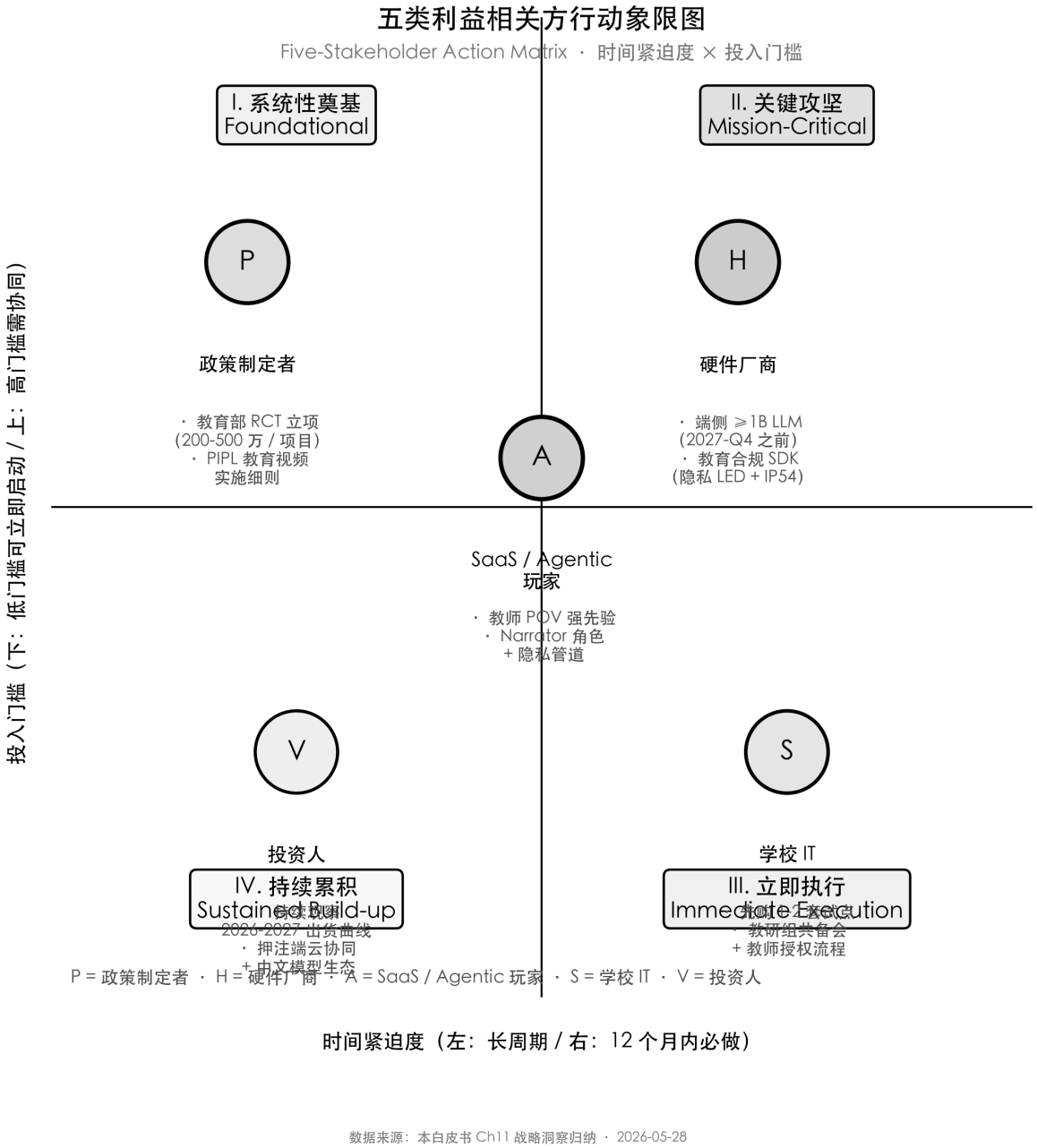

Figure 33. Action quadrants for five stakeholder groups. Source: policy recommendations chapter

Chapter 9 Policy Timeline: China and the World

AI-SLI · Industry Research Series > Methodology: this chapter maps China's 2017–2026 AI-in-education policy into a "foundation–construction–execution" three-stage arc, overlays the three policy anchors of 2027 / 2030 / 2035, benchmarks against the UNESCO / OECD / EU international policy frameworks, and closes with a policy-window judgment and the compliance baseline.

The core industry question this chapter answers: in the 2026–2027 policy window, what are the policy constraints, compliance baselines, and time nodes facing the AI smart glasses and agentic-video education industry? This report treats the State Council's "AI Plus" guideline (Guo Fa [2025] No. 11) as the starting point of the policy execution phase, the Master Plan on Building China into a Leading Country in Education (2024–2035) as the endgame anchor, and the "AI Plus Education" Action Plan (Jiao Ke Xin [2026] No. 1) as the critical time lock — stacked together, they make Q4 2027 the pivotal node of the policy window. Vendors that miss it face a two-sided squeeze.

9.1 China's Three Policy Stages

China's AI-in-education policy shows a clear "foundation–construction–execution" three-stage evolution, each stage carrying distinct industry implications and procurement patterns.

9.1.1 Stage One (2017–2020): Foundation

Core documents:

- **The State Council's New Generation Artificial Intelligence Development Plan (Guo Fa [2017] No. 35)**: issued July 2017, the first document to elevate "intelligent education" to a national strategic deployment[1]. The plan calls for "using intelligent technologies to accelerate reform of talent-cultivation models and teaching methods, and to build a new education system encompassing intelligent learning and interactive learning" — the "point-zero document" of AI in education in China. - **The MOE's Education Informatization 2.0 Action Plan**: issued April 2018, setting the "three-alls, two-highs, one-big" goals — teaching applications covering all teachers, learning applications covering all school-age students, digital-campus construction covering all schools; a general rise in application levels and in teacher and student digital literacy; and one big "Internet + education" platform[2]. - **The MOE General Office's Notice on Launching the "AI-Empowered Teacher Development" Action Pilot (Jiao Shi Ting [2018] No. 7)**: issued August 2018, starting the pilot with a first batch of two units — Ningxia Hui Autonomous Region (a whole-region basic-education pilot) and Beijing Foreign Studies University (a higher-education pilot)[3]. - **The State Council's China's Education Modernization 2035**: issued

February 2019, targeting overall education modernization and entry into the ranks of leading countries in education by 2035[4].

The foundation stage is characterized by **"macro strategy + pilot start-up"** — no concrete procurement norms or compliance standards yet, but the policy vocabulary base for the construction stage was laid. Industry implication: hardware vendors entered education through pilot projects — limited in scale but with a visible policy premium.

9.1.2 Stage Two (2021–2024): Construction

Core documents:

- **The Guiding Opinions on the Construction of New Education Infrastructure, issued by the MOE and five other ministries**: July 2021, introducing the "new education infrastructure" concept across six directions — networks, platforms, resources, campuses, applications, and security[5]. - **The MOE's *Teacher Digital Literacy* industry standard (JY/T 0646-2022)**: December 2022, defining five first-level dimensions, 13 second-level dimensions, and 33 third-level dimensions of teacher digital literacy[6]. - **The second-batch expansion of the "AI-Empowered Teacher Development" pilot**: launched September 2021, expanding to 55 universities + 20 prefectures + 25 districts/counties = 100 units[7]. - **The MOE's White Paper on Smart Education of China**: March 2022, presenting progress on the national smart-education public service platform[8]. - **The CPC Central Committee and State Council's Plan for the Overall Layout of Building a Digital China**: printed February 2023, targeting "a basically formed, integrated push that is horizontally connected, vertically penetrating, and effectively coordinated" by 2025 and "digital development at the global forefront" by 2035 — the top-level layout for education digitalization[9]. (A basis correction: industry materials often misattribute the "70% intelligent-terminal penetration" target to this plan. That quantified target actually comes from the State Council's "AI Plus" guideline (Guo Fa [2025] No. 11), whose original text reads "penetration of new-generation intelligent terminals, AI agents, and other applications above 70% (2027) / above 90% (2030)"; see §9.2.1.) - **The MOE's National Education Digitalization Strategic Initiative**: launched 2022, with its first-phase review completed in December 2024[10].

The construction stage is characterized by **"infrastructure + standards + scaled pilots"** — clear procurement directions and compliance boundaries took shape. Industry implication: hardware vendors entered the provincial/prefectural centralized-procurement track (Seewo with a 2 million+ classroom installed base, Honghe with 2.3 million[11][12]), and SaaS vendors gained procurement eligibility through MOE special catalogs.

9.1.3 Stage Three (From 2025–2026): Execution

Core documents:

- **The State Council's Opinions on Deepening the Implementation of the "AI Plus" Initiative (Guo Fa [2025] No. 11)**: publicly released August 2025, naming "AI + education" one of six priority actions and setting a three-step quantified ladder — "by 2027, penetration of new-generation intelligent terminals, AI agents, and other applications above 70%; by 2030, above 90%; by 2035, full entry into a

new stage of intelligent economy and intelligent society"[13]. - **The CPC Central Committee and State Council's Master Plan on Building China into a Leading Country in Education (2024–2035)**: issued January 2025, with a two-stage target — "important phased results by 2027; a leading country in education built by 2035"[14]. - **The "AI Plus Education" Action Plan (Jiao Ke Xin [2026] No. 1), issued by the MOE and four other ministries**: drafted April 2, 2026 and publicly released April 10, 2026 by the MOE jointly with the National Development and Reform Commission (NDRC), MIIT, MOST, and the National Data Administration (NDA) — marking the shift of AI in education from isolated pilots to unified five-ministry action[15]. - **Smart Education of China platform 2.0 intelligent edition**: launched March 28, 2025, adding 2,000+ general AI courses and four intelligent applications (the Baize smart learning companion, AI search, AI video summarization, AI video navigation)[16]. - **The National Education Big Data Center + the national platform's intelligent middle platform**: formally launched December 30, 2025, connecting 1,300+ universities, 32 provincial education authorities, and 60+ business systems[17]. - **The second batch of AI education bases for primary and secondary schools**: announced December 24, 2025 — 325 in the second batch, 509 cumulative[18].

The execution stage is characterized by **"five-ministry coordination + public infrastructure + quantified targets"** — a measurable, assessable, accountable execution system. Industry implication: AI-glasses and agentic-video vendors must be able to interface with five-ministry coordinated policy. No single vendor can complete national coverage on an MOE special program alone — synchronized recognition is needed from the NDRC (industrial planning and procurement norms), MIIT (hardware standards), MOST (technology certification), and the NDA (data elements and data-security compliance); products carrying generative AI additionally require CAC algorithm/LLM filing as an independent regulatory track.

9.2 Three Policy Anchors

China's AI-in-education policy carries three anchors at 2027 / 2030 / 2035.

9.2.1 Anchor 2027: Penetration of New-Generation Intelligent Terminals and AI Agents Above 70%

Policy source: the State Council's "AI Plus" guideline (Guo Fa [2025] No. 11, publicly released August 2025)[13], whose original wording is "by 2027, achieve broad and deep integration of AI with six priority domains first, with **penetration of new-generation intelligent terminals, AI agents, and other applications above 70%**." A citation rule: this indicator is society-wide in scope and explicitly includes "AI agents and other applications" — it must not be shortened to "intelligent-terminal penetration," and it is emphatically not "intelligent-terminal penetration in primary and secondary schools." The education-sector landing document is the "AI Plus Education" Action Plan (Jiao Ke Xin [2026] No. 1).

Industry implications:

- The 2025–2027 triennium is the "policy-access dividend period" for AI glasses and agentic video to enter government procurement lists in education - In education scenarios, the carriers of "new-generation

intelligent terminals" include interactive flat panels, smart blackboards, all-in-one lecture capture appliances, student tablets, and AI glasses - The 70% target is not education-specific, but education, as one of the six priority domains, must reach it in step — by industry inference, the bulk of China's roughly 250,000 primary and secondary schools would complete new-generation terminal deployment before 2027 (an inferential basis, not the policy's original text) - Extrapolating from installed bases of 2 million classrooms (Seewo) and 2.3 million (Honghe)[11][12], China's traditional K-12 intelligent-terminal market is close to saturation by 2027; incremental space concentrates in new form factors such as AI glasses

Specific meaning for AI glasses: as the representative form of the "new-generation intelligent terminal," if AI glasses are to reach "basic coverage" of the K-12 teaching workforce by 2027 (the teacher-POV path; see Chapters 5–6 of the companion white paper in this series), at least 30% of teachers (about 5 million K-12 teachers) would need AI glasses. At RMB 3,000 (≈USD 417 at RMB 7.2 per USD) per unit, that is RMB 15 billion of total procurement — an order-of-magnitude consistency check against the Layer 1 hardware TAM baseline of RMB 11.31 billion per year in §7.2.1 (mature stage, 2024 communiqué basis).

9.2.2 Anchor 2030: Penetration of New-Generation Intelligent Terminals and AI Agents Above 90%

Policy source: Guo Fa [2025] No. 11 — "by 2030, … penetration of new-generation intelligent terminals, AI agents, and other applications above 90%"[13] — dovetailing with the 2030 phase targets of the Master Plan on Building China into a Leading Country in Education (2024–2035)[14] and the medium-term planning of the MOE's National Education Digitalization Strategic Initiative.

Industry implications:

- The 2027–2030 triennium is the "deep-penetration period," moving K-12 intelligent terminals from basic to full coverage - The 90% target (society-wide basis), applied to education, by industry inference implies that the vast majority of China's roughly 250,000 primary and secondary schools complete new-generation terminal deployment (an inferential basis, not the policy's original text) - In this period, competition among AI-glasses and agentic-video vendors shifts from "first-mover positioning" to "installed-base replacement + deeper penetration of increments"

Key challenge: by 2030, Apple (Vision Pro 2 / Vision Air) is expected to have channel positions in China's education market[20][21]. If the domestic ecosystem (Xiaomi, RayNeo, Rokid, Huawei, Namibox) misses the 2026–2027 policy window, it faces a two-sided squeeze from "international flagships + domestic policy" — the core evidence behind the policy-window judgment in §9.6.

9.2.3 Anchor 2035: The Education-Power Endgame

Policy source: the Master Plan on Building China into a Leading Country in Education (2024–2035)[14] states plainly: "build China into a leading country in education by 2035" — the long-range endgame of Chinese education policy.

Industry implications:

- The Master Plan defines a leading country in education by eight features: ideological-political guidance, talent competitiveness, scientific and technological support, livelihood security, social coordination, cultural soft power, international influence, and people-to-people exchange[14] - At least five of the eight (talent, science and technology, social coordination, culture, international) bear directly on AI in education - The 2035 endgame implies that China's education system reaches "peer-level dialogue" with the world's strongest systems (the United States, the United Kingdom, Finland, Singapore, and others)

Long-range meaning for AI glasses and agentic video: by 2035, China's education system should sit in the global first tier on at least four dimensions — AI-in-education penetration, teacher AI competency, student AI literacy, and AI-in-education research. That requires the industry chain of AI glasses and agentic video to be internationally competitive as a **"hardware + platform + services + standards" four-in-one whole** — not merely a local lead by a single hardware vendor.

9.2.4 The Anchor-to-Industry Mapping Table

Anchor	Policy goal	Policy source	Key industry node
2027	First phase of the MOE's "AI Plus Education" Action Plan completed; penetration of new-generation intelligent terminals and AI agents above 70%	Guo Fa [2025] No. 11 + Jiao Ke Xin [2026] No. 1	AI glasses enter government procurement lists; SaaS enters district/county centralized procurement
2030	Phased education-power targets; penetration above 90%; AI education basically universal in primary and secondary schools	Guo Fa [2025] No. 11 + the 2024–2035 Master Plan	Domestic ecosystem reaches "basic coverage" in K-12; agentic SaaS ARPU becomes internationally comparable
2035	A leading country in education; full entry into the intelligent economy and society	The 2024–2035 Master Plan + Guo Fa [2025] No. 11	International competitiveness as a "hardware + platform + services + standards" four-in-one whole

9.3 International Policy Frameworks

International policy frameworks affect China's industry in three ways: standards alignment (e.g., teacher AI competency frameworks), compliance baselines (e.g., the EU AI Act's education-scenario prohibitions), and market access (e.g., the UNESCO Beijing Consensus as international endorsement for Chinese AI-education products going global).

9.3.1 The UNESCO Policy Framework (See This Report's q01 Review)

The Beijing Consensus on Artificial Intelligence and Education, 2019: co-initiated by 50+ ministerial-level officials and delegates from 105 countries, the first instrument to recognize AI's systemic impact on education[22]. The Beijing Consensus gives Chinese AI-education products a key policy handle for international endorsement under the UNESCO framework — China hosted and initiated it.

The UNESCO AI Competency Framework for Teachers, 2024: released September 2024 (at Digital Learning Week 2024)[23]; per third-party analysis it could potentially apply to all 193 UN member states and reach about 75 million educators and 1.5 billion students (a "potential reach" projection, not UNESCO's official coverage statistic; UNESCO's own factual record was that, as of 2022, only seven countries had developed AI competency frameworks for teachers). Five aspects: human-centred mindset, ethics of AI, AI foundations and applications, AI pedagogy, and AI for professional development. China's *Teacher Digital Literacy* (JY/T 0646-2022) is highly isomorphic with the UNESCO teacher framework across the five pillars (see §8.1.3).

The UNESCO AI Competency Framework for Students, 2024: released September 2024 — 4 aspects × 3 progression levels (Understand / Apply / Create), 12 competencies; the four aspects are human-centred mindset, ethics of AI, AI techniques and applications, and AI system design[23].

UNESCO's AI and Education: Protecting the Rights of Learners, 2025: released September 4, 2025 (100 pages, ISBN 978-92-3-100785-9), it centers on the right to education and, within the broader international human-rights framework, discusses related rights — privacy, access to information, cultural and linguistic diversity, freedom from online violence, work, and the right to be heard and to autonomy — across its 11 chapters (rather than enumerating a fixed list of "seven rights")[24].

UNESCO Digital Learning Week 2026: themed "Facts. Frictions. Frontiers. Education in the age of AI"[25] — convening in Paris in September 2026 and expected to release the 2026 edition of the flagship governance document.

9.3.2 OECD Digital Education Outlook

The OECD and the European Commission jointly released the *AI Literacy Framework for Primary & Secondary Education* in May 2025[26] (22 AI-literacy competency points); the OECD's flagship comparative study, *OECD Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem* (published December 2023, covering 29 countries/jurisdictions), systematically surveys national digital-education infrastructure, governance, and ecosystems[27]. Synthesizing the OECD's consistent stance on digital-education governance, three policy orientations relevant to this report can be drawn out:

1. The educational use of generative AI should be guided rather than banned 2. Teachers need dedicated AI training, not merely tool training 3. Education systems need AI assessment and certification mechanisms[27]

These three orientations give the overseas-expansion path of China's AI glasses and agentic-video industry key endorsement in the international discourse — orientation (3) in particular, on AI assessment and certification, forms an international interface with the "education AI filing" mechanism in China's "AI Plus Education" Action Plan (see §9.5).

9.3.3 WEF and World Bank Initiatives

The World Economic Forum (WEF) published *Reshaping the Future of Education: A Tech-Driven Learning Revolution* in December 2024[28], arguing that "AI is an amplifier of educational equity, not a manufacturer of divides." The World Bank released its *AI in Education Toolkit* in June 2025[29], a policy toolkit for AI-in-education deployment in developing countries.

Implication for China's industry: the international expansion of China's AI glasses and agentic video — particularly toward Belt and Road countries, Southeast Asia, South Asia, and Africa — enjoys implicit endorsement from the WEF / World Bank policy frameworks. The 2025–2026 overseas pushes of Chinese vendors such as Seewo, Honghe, RayNeo, and Rokid (Honghe's 2024 overseas revenue of RMB 1.951 billion, 55.36% of total[12]) are the industrial landing of exactly this framework.

9.4 The MOE's "AI-Empowered Teacher Development" Pilot

9.4.1 Cumulative Scale and Organizational Architecture

From its 2018 launch through end-2024, the MOE's "AI-Empowered Teacher Development" pilot has accumulated:

- **Pilot units: 103** (prefectures, districts/counties, universities)[37] - **Experimental schools: about 1,500 primary and secondary schools** (an aggregate estimate across pilot units' local experimental schools)[7] - **Cumulative training: 2.97 million participations**[7] - **Smart classrooms and training/research rooms: 43,000**[7] - **Intelligent tools: 738**[7] - **Teachers covered by the "Three Classrooms": 188,000**[7]

Organizational architecture: the MOE's Department of Teacher Affairs leads; provincial education departments take on the work; prefectural and district/county bureaus execute; experimental schools implement. Representative samples:

- **Ningxia Hui Autonomous Region** (first batch, 2018) — whole-region basic-education pilot, regional education-modernization pilot - **Beijing Foreign Studies University** (first batch, 2018) — the higher-education representative (the first batch comprised only these two units; some industry materials misplace second-batch universities into the first batch — this blue book follows the People's Daily Online report of September 2018 and the original text of Jiao Shi Han [2021] No. 13) - **Guangzhou** (second batch, 2021) — prefecture-level representative, with 13 experimental education groups selected - **Jiangsu Province** (NCET AI curriculum pilot) — 10 districts/counties + 200+ schools - **Jiang'an District, Wuhan, Hubei** (NCET first batch, 2022) — 10 schools

9.4.2 The Three-Batch Expansion Cycle

The pilot uses a three-batch expansion mechanism, with a third batch expected in 2026–2027:

Phase	Timing	Scale	Key feature
First batch	2018-08	2 units (Ningxia, BFSU)	Exploration
Second batch	2021-09	100 units (55 universities + 20 prefectures + 25 districts/counties)	Scaled piloting
Cumulative external count	Through 2024	103 units (incl. later additions)	The MOE's official cumulative basis
Third batch (expected)	2026–2027	200–300 units	Aligned with the "AI Plus Education" Action Plan

The third-batch expansion window is the "second policy-access window" for the AI glasses and agentic-video industry — particularly under the five-ministry coordination framework noted in §9.1.3, where new pilot units will face stricter procurement norms, higher compliance requirements, and more focused commercial opportunities.

9.4.3 Industry Implications

Three core implications of the MOE pilot for the AI glasses and agentic-video industry:

First, pilot schools are a ready-made base for RCTs — infrastructure, teacher training willingness, and parent-communication channels are all in place. This is the policy handle behind the "education AI RCT evaluation fund" recommendation to education authorities in §11.5.

Second, the pilot units' 34 exemplary cases are the case-library base for industry training — content design at industry training providers such as Seewo and Honghe should be built first on these 34 cases.

Third, the 43,000 smart classrooms are the first-wave candidate sites for AI-glasses deployment — these rooms already have networking, power, and IT operations in place, making deployment cost and operational difficulty markedly lower than in ordinary classrooms.

9.5 The Compliance and Regulatory Framework

9.5.1 China's Superior Laws

The compliance baseline for AI glasses and agentic video in education rests on three Chinese superior laws:

The Personal Information Protection Law (PIPL; adopted August 20, 2021, effective November 1, 2021)[30]: the core is Article 28's special protection of "sensitive personal information." Processing involving minors' information must satisfy: (a) consent of the minor's guardian; (b) disclosure of the purpose, method, and necessity of processing; (c) a separate-consent mechanism; and (d) strict security

safeguards. AI glasses capture minors' images, voice, and behavioral data, and must meet all Article 28 requirements in full.

The Law on the Protection of Minors (as amended in 2020/2021) + the Regulations on the Protection of Minors in Cyberspace (adopted September 2023, effective January 2024)[31][32]: these establish network service providers' protection obligations for minors' personal information — identity verification, guardian consent, data minimization, strict confidentiality, and no excessive collection. This is the minors-specific compliance baseline for AI glasses entering K-12 settings.

The Data Security Law (DSL; effective September 1, 2021)[33]: establishes a classified, tiered data-protection regime, with strict protection for data involving state secrets, citizens' personal information, and trade secrets. Education data — especially teacher and student data — falls into the "important data" category, and cross-border transfer is tightly restricted.

9.5.2 Algorithm Regulation and Generative AI Filing

The Interim Measures for the Administration of Generative Artificial Intelligence Services (effective August 15, 2023)[34]: generative AI service providers must complete algorithm filing, security assessment, and content review. As of end-December 2025, 748 generative AI services had completed CAC filing (with a further 435 applications/features registered)[35], including DeepSeek, Qwen, ERNIE Bot, ChatGLM, Kimi, Doubao, the Seewo Teaching LLM, and Honghe's AI teaching assistant.

Core requirements for AI-glasses and agentic-video vendors:

- Every product that relies on generative AI capability must complete algorithm filing - Education-vertical products need an education-specific filing on top of the general generative AI filing — the policy basis for the "education AI special filing" mechanism (distinct from general algorithm filing) recommended in §11.5 - Where training data include minors' data, this must be specially declared and pass review under the minors-protection regulations

9.5.3 The EU AI Act's Education-Scenario Prohibitions

The EU AI Act entered into force in August 2024[36]: Article 5 places multiple education sub-categories on the high-risk list, and the prohibition on "AI practices that infer natural persons' emotions in education and the workplace (except for medical or safety purposes)" applies directly. The ban bears immediately on sales of AI glasses and agentic-video education products in the EU market:

- **Student emotion recognition**: fully prohibited (except for medical and safety purposes) - **Student behavior analytics**: high-risk category, requiring the full high-risk AI system compliance process - **Teacher evaluation**: high-risk category, requiring transparency disclosure - **Biometric identification**: doubly constrained by the GDPR and the AI Act[36]

The EU AI Act's prohibitions structurally constrain Chinese vendors' overseas paths — Seewo, Honghe, RayNeo, Rokid, Xiaomi, Quark (Alibaba) and others seeking EU entry must complete product compliance retrofits in 2026–2027 (e.g., removing student-emotion-recognition features, or converting them to "teacher decision-support" modes).

9.5.4 The US K-12 Compliance Framework

The core legal framework for AI compliance in US K-12 education:

- **COPPA (Children's Online Privacy Protection Act)**: protects the online privacy of children under 13 - **FERPA (Family Educational Rights and Privacy Act)**: protects the privacy of student education records - **CIPA (Children's Internet Protection Act)**: requires schools to filter content inappropriate for minors[37]

US K-12 procurement of AI glasses and agentic video requires the vendor to furnish a triple COPPA / FERPA / CIPA compliance declaration. The major US K-12 monitoring products (Securly, GoGuardian, Lightspeed) all hold the triple certification[38]. Chinese vendors targeting US K-12 must complete the triple compliance retrofit in 2026–2027.

9.6 The Policy-Window Judgment

9.6.1 Q4 2027 Is the Critical Node

Synthesizing §9.1–§9.5, this report's judgment on the policy window for China's AI glasses and agentic-video education industry:

Critical node: Q4 2027 is the inflection point of the policy window. Three triggers land simultaneously:

1. **The first phase of the MOE's "AI Plus Education" Action Plan completes** — the 2025–2027 triennium ends, marking the shift from "access-dividend period" to "regulated consolidation period." Vendors that miss the window face stricter compliance review and fiercer installed-base competition. 2. **Apple's expected entry (Vision Air / second-generation lightweight AI glasses)** — multiple market research houses have issued explicit warnings: "Apple is expected to enter in 2027 and will become the industry's key inflection point"[21]. Vision Pro 2's slip to 2027[20] means Apple will enter China's education market in 2027–2028 with hardware, software, and ecosystem as a single package. 3. **Stable operation of Smart Education of China 2.0 + maturation of the data base and intelligent middle platform** — the National Education Big Data Center and the national platform's intelligent middle platform, launched December 30, 2025[17], will reach dual maturity ("stable operation + commercial SaaS integration") by Q4 2027. The interfaces between commercial SaaS and the national platform will then harden, and new entrants' integration costs rise exponentially.

9.6.2 On-Device ≥1B LLMs Are the Policy Watershed

The §11.4 recommendation that hardware vendors achieve on-device local inference with LLMs of ≥1B parameters before Q4 2026 is not merely a technology milestone; it is a policy watershed. The reasons:

- All 11 mainstream AI glasses today depend on cloud LLMs, so minors' voice and imagery must be uploaded to the cloud - That constitutes a potential violation of the "minimal processing of minors' personal information" principle in Articles 32–38 of the Regulations on the Protection of Minors in Cyberspace[32] - On-device LLM inference enables "sensitive data stays off the cloud; only de-identified

inference results go up" — the compliance baseline - After Apple's 2027 entry, the Vision Air will already carry on-device LLM capability — domestic vendors that fail to follow before Q4 2026 face the double squeeze of "compliance disadvantage + international flagship"

9.6.3 The K-12 Main-Battleground Window

K-12 is the industry's main battleground for AI glasses and agentic video. The key window judgments: - **2025–2026**: access-dividend period — under the five-ministry framework, new vendors can enter procurement lists via the "innovative education terminal" route - **2026–2027**: regulated-competition period — standards and procurement norms harden; the installed-base advantages of incumbents (Seewo, Honghe, CVTE, Hikvision, AVA) begin to tell - **2027–2028**: Apple's entry + data-base stabilization + strict enforcement of algorithm filing; new entrants' compliance costs rise sharply - **2028–2030**: installed-base replacement + deeper increments; the K-12 intelligent-terminal market approaches saturation (matching the Guo Fa [2025] No. 11 target of 90% penetration by 2030)[1314]

Key judgment: the 24 months from Q4 2025 to Q4 2027 are the decisive window of the K-12 main battleground. Within it, a hardware vendor must complete three things — education-vertical SKU compliance retrofit, joint API construction with the K-12 incumbent leaders, and government-procurement list access — or be marginalized by the installed-base players.

9.6.4 Mapping the Policy Window onto the Three-Layer TAM

Merging the §9.6 window judgments with the §7.6 TAM sensitivity analysis:

Window	Policy state	Corresponding TAM scenario	Stacked three-layer TAM
2025–2026	Access-dividend period	Optimistic	RMB 41.8 billion/yr
2026–2027	Regulated competition	Base	RMB 20.8 billion/yr
2027–2028	Apple entry + data-base stabilization	Base (partly conservative)	RMB 15–20 billion/yr
2028–2030	Replacement + deeper increments	Base (post-saturation steady state)	RMB 18–22 billion/yr
2030–2035	Domestic + international coexistence	Long-run steady state	RMB 20–25 billion/yr

Core judgment: the policy window and the TAM scenarios are tightly coupled. A vendor that misses the 2025–2027 access window faces the triple pressure of "tightened regulation + installed-base competition + international flagships," and its reachable share of TAM collapses from the optimistic RMB 41.8 billion to the base RMB 15–20 billion — a gap of more than 2x.

9.6.5 Industry Implications of the Five-Ministry Coordination Framework

The "AI Plus Education" Action Plan (Jiao Ke Xin [2026] No. 1) was jointly issued by five ministries — the MOE, the NDRC, MIIT, MOST, and the NDA (drafted April 2, 2026; publicly released April 10,

2026)[15] — unprecedented "five-ministry coordination" in the history of Chinese AI-in-education policy. Its industry meaning reads on four levels:

Level 1 — multi-dimensional certification for hardware access: AI glasses and agentic-video hardware must simultaneously satisfy MOE education-equipment certification (pedagogical fitness + safety), MIIT product certification (electronic-product quality + domestic-content ratio + network access), and MOST key-technology certification; outside the five-ministry framework, products carrying generative AI / LLMs must additionally comply with the CAC's algorithm and LLM filing (an independent regulatory track). Missing any one item makes entry to government procurement lists difficult.

Level 2 — cross-ministry governance of data and industry: five-ministry coordination means that the NDRC (major-project layout and procurement / price norms), the NDA (circulation of education data elements, data security, and cross-domain compliance), and the MOE (education-data governance norms, in draft) jointly define the boundaries for AI glasses' and agentic video's collection / transmission / storage / processing of data on campus; generative AI services are separately governed by the CAC's Generative AI Measures[34]. Vendors need an internal system running "industry compliance + data compliance + algorithm filing" in parallel.

Level 3 — coordinated technical standards: five-ministry coordination accelerates national-level technical standards for AI glasses and agentic video in education. We expect 5–8 national standards before 2027 (hardware interfaces, data exchange, privacy protection, teaching-effect evaluation, teacher-competency evaluation, among others).

Level 4 — coordinated industrial policy across ministries: the framework aligns previously independent policy tracks — MIIT's domestic-content requirements (e.g., SoC domestic-content ratio of at least 70%), the NDRC's major-project layout and procurement norms, the NDA's rules for circulating education data elements, and the MOE's education-vertical qualifications. For domestic AI-glasses vendors (Xiaomi, Huawei, RayNeo, Rokid, Quark of Alibaba, Namibox), this confers a structural compliance advantage over international flagships such as Meta, Apple, and Google.

9.7 The Global Education-AI Policy Landscape and China's Window (2024–2026)

Pulling the lens back from China to the world: across 2024–2026, education-AI policy in the major economies moved with rare intensity — Korea's national-project whiplash, the EU's hard-law lines with a postponed timetable, and America's scissors gap between federal promotion and state-level bans. Together these movements define the international coordinates and the going-global boundary of China's AI glasses and agentic-video education industry.

9.7.1 Korea's AIDT: The Whiplash of the World's First National AI-Textbook Program

Korea's AI digital textbooks (AIDT) program was the world's first nationwide, mandatory AI adaptive-textbook rollout: it formally entered classrooms with the March 2025 school year, covering grades 3–4 of

primary school (English, mathematics) and the first years of middle and high school (English, mathematics, informatics), with about KRW 300 billion (about USD 230 million) of up-front government investment and a total program basis of roughly USD 850 million[39]. Its legislative reversal chain took only five months: in December 2024 the opposition-led National Assembly passed an amendment demoting AIDT from "textbook" to "educational material" → in January 2025 the acting president vetoed it → after the March 2025 launch, nationwide primary-school adoption fell below 30% and publishers filed administrative suits against the education ministry → in June 2025 a new government took office (with a campaign pledge to withdraw AIDT) → **on August 4, 2025 the National Assembly passed the amendment to the Elementary and Secondary Education Act again, and it became law**, narrowing the legal definition of "textbook" to paper books and e-books and explicitly excluding "learning-support software using intelligent information technology." The ministry announced the end of mandatory rollout the next day; central budget support ended; and in December 2025 the textbook association and publishers filed suit for damages[39].

Three lessons for China. **First**, AIDT failed above all as a "top-down, device/platform-first rollout without teacher and parent consensus" (teachers complained of content errors; parents worried about screen time and data privacy) — any plan that brings head-worn devices into classrooms must lead with teacher acceptance and parental informed consent. **Second**, China's gradualist "pilot first, legislate later" path (multi-year rolling validation across 103 pilot units and about 1,500 experimental schools; see §9.4) avoids precisely Korea's "switch-on-then-switch-off" oscillation — this path difference is itself a source of the stability of China's policy window. **Third**, Korea's education-AI investment did not exit; it pivoted to "AI talent development + school autonomy" (nearly USD 740 million of teacher development over 2024–2026 and a 400-member T.O.U.C.H teacher corps), and with the AI Basic Act effective January 22, 2026 (the world's second comprehensive AI law), Korea and China's Interim GenAI Measures now form a parallel "East Asian two-law" configuration[39]. One further note: in May 2026 Korea's TOEIC examination caught the country's first AI-smart-glasses cheating case (photographing test questions + receiving answers externally), and the administrator announced reinforced entry screening for AI wearables — after Japan, exam integrity has become the first compliance red line for wearables in East Asia[39].

9.7.2 The United States: A Scissors Gap Between Federal Promotion and State Restrictions

The US presents a policy scissors gap — "the federal level promotes AI software; the states ban personal hardware." On the federal side: the April 23, 2025 White House executive order *Advancing Artificial Intelligence Education for American Youth* established a White House AI education task force, launched a Presidential AI Challenge, and mobilized public–private development of K-12 AI-literacy resources and expanded teacher AI-training grants[40]; and the education secretary's July 22, 2025 Dear Colleague letter confirmed that federal grants may fund "AI-enabled high-quality instructional materials and high-impact tutoring" — the federal funding lever formally swung toward encouraging AI in classrooms[40]. On the state side: as of November 2025, **35 states plus Puerto Rico** had issued K-12 AI guidance (28 states plus Washington, DC as of July 2025 — diffusion has been rapid), with common themes of academic

integrity, data privacy (FERPA/COPPA alignment), teacher professional development, and human oversight[41]. At the same time, **Texas HB 1481 requires public school districts, from the 2025-26 school year, to ban student use of personal communication devices throughout the school day — with smart glasses / AI glasses, smartwatches, and earbuds explicitly within the definition**: the first time smart glasses have been written into a state-law school-ban list[42]. The implication for Chinese vendors: the US wave of "phone-free schools" legislation targets **personally worn student** devices; **institutionally deployed, teacher-held** devices fall outside most state-law definitions — "teacher-side AI glasses" is where the differentiated US positioning space lies.

9.7.3 The European Union: Hard-Law Lines and a 16-Month Compliance Window

The EU AI Act (Regulation (EU) 2024/1689) is the world's hardest law on education-AI governance: education is listed wholesale as a high-risk domain (Annex III, point 3 — covering four system classes including admissions allocation, learning evaluation, and exam proctoring AI); and **the Article 5(1)(f) classroom emotion-recognition ban took effect on February 2, 2025** — prohibiting AI systems that "infer the emotions of natural persons on the basis of biometric data" in educational institutions (medical or safety purposes excepted), with fines of up to 7% of global turnover or EUR 35 million; the Article 4 AI-literacy obligation took effect the same day[43]. The key timetable change: **on May 7, 2026 the EU trilogue reached a provisional agreement on the Digital Omnibus, postponing the compliance deadline for high-risk education AI systems by 16 months, from August 2, 2026 to December 2, 2027** (high-risk systems embedded in regulated products: to August 2, 2028) — while the prohibitions and the AI-literacy obligation remain unaffected by the postponement[44]. Layered on the GDPR's campus-biometrics case law (Sweden's 2019 Skellefteå facial-recognition attendance fine; the 2020 annulment of high-school facial-recognition gates by the Marseille administrative court — both confirming that "consent is invalid in school settings")[43], the operational meaning for Chinese vendors entering the EU is concrete: (a) emotion / attention inference features must be physically removed from EU SKUs, not hidden behind a toggle; (b) exam-proctoring functions must be prepared as high-risk systems, with technical documentation, human-oversight mechanisms, and DPIAs; (c) the 16 months from June 2026 to December 2027 are the final window for completing these retrofits — the window is both a buffer and a countdown.

9.7.4 Japan, Singapore, India, Australia: Four Governance Styles

Japan (iterated guidance + named exam-hall ban): MEXT's guideline on generative AI use iterated from the July 2023 "provisional edition" (limited pilots) to Ver 2.0 in December 2024 ("everyday use expected") — a cadence closely resembling the Chinese MOE's "constrain first, then enable." On the examination side, after the February 2024 Waseda University smart-glasses cheating case (the first), **the January 2026 Common Test for University Admissions explicitly banned smart glasses** (listed alongside smartphones and smartwatches; seven candidates were disqualified for cheating that month) — making Japan the first country to name smart glasses in the rules of a national unified examination[45].
Singapore (AI built into the national platform): the EdTech Masterplan 2030 (September 2023) builds

AI capabilities directly into the national Student Learning Space (SLS) platform (adaptive learning ALS, short-answer feedback SAFA, speech evaluation SET); a September 2025 parliamentary reply confirmed foundational generative-AI literacy for all students and teachers. The "government platform supplies; vetted access" model means the realistic route into Singapore's public schools is integration with the SLS/MOE ecosystem — the space for single-point direct sales is minimal[46]. **India (curriculum-driven, largest-scale diffusion)**: on October 29, 2025 the education ministry announced AI and computational thinking as compulsory from grade 3, implemented "within existing class hours" for grades 3–8 from the 2026-27 school year and compulsory for grades 9–10 from 2027-28, stacked on CBSE's existing AI skill subjects (code 417 for grades 9-10, code 843 for grades 11-12) — the world's largest AI-curriculum diffusion. Hardware-demand spillover can be expected, but the ICT base of Indian public schools is thin; in the near term AI glasses are more likely to enter as teacher-training and vocational-demonstration devices[47]. **Australia (principles framework + annual review)**: the Australian Framework for Generative AI in Schools (December 2023; 6 principles + 25 guiding statements) established a **fixed annual review cycle** from 2025 — a rare national framework with a set update cadence; its "privacy, security and safety" and "human and social wellbeing" provisions can be applied directly as an ethics-assessment checklist for campus wearables[48].

9.7.5 The Global Policy Comparison Table and China's Window Judgment

Country/region	Key instruments	Effective	Direct impact on AI glasses	Market implication
China	Jiao Ke Xin [2026] No. 1 + Guo Fa [2025] No. 11	2026-04 / 2025-08	Five-ministry coordinated access; teacher-side first, student-side cautious	2026–2027 policy-access dividend (this chapter, §9.6)
Korea	Elementary and Secondary Education Act amendment (AIDT demoted) + AI Basic Act	2025-08 / 2026-01	National unified procurement ended; school-level choice; exam-scenario entry barred after the TOEIC glasses-cheating first case	Education-hardware tender vacuum + spillover of ~USD 740M teacher-development budget
United States	2025-04 AI-education executive order + 35-state guidance + Texas HB 1481	2025–2026	Personal student wear rapidly banned on public campuses; teacher/institutional deployment outside the bans	Policy space for differentiated "teacher-side AI glasses" positioning
European Union	AI Act + Digital Omnibus	Ban effective 2025-02; high-risk obligations postponed to 2027-12	Classroom emotion recognition banned; exam-proctoring AI high-risk	Compliance cost as a non-tariff barrier; 16-month retrofit window

Japan	MEXT guideline Ver 2.0 + Common Test rules	2024-12 / 2026-01	Smart glasses named and banned in the national exam; classroom use at schools' discretion per guideline	"Exam vs. teaching" split tracks: exams off-limits, teaching terminals viable
Singapore	EdTech Masterplan 2030	Rolling since 2023-09	No dedicated ban; school entry requires national-platform (SLS) integration	Platform-access model; a single B2G channel
India	AI compulsory from grade 3 (under NEP 2020)	From school year 2026-27	No direct provisions; curriculum first, devices tiered	Low-cost market for teacher training and vocational demonstration devices
Australia	Generative AI framework for schools (annual review)	From term 1, 2024	6 principles / 25 statements usable as a wearables ethics baseline; state phone bans tightening	Exporter of ethics-assessment checklists; student-side device control tightening

China's window judgment: the horizontal comparison shows China is currently the only market that combines all three elements — "centrally unified policy supply (five-ministry coordination) + national platform infrastructure (178 million users) + a gradualist pilot fault-tolerance mechanism (103 pilot units)." These three respectively hedge America's fragmentation, Korea's policy whiplash, and the EU's hard-law uncertainty. But the three global policy touchpoints for wearable governance — exam integrity, classroom privacy and emotion recognition, and campus device-management legislation — are now all present and diffusing across borders: Japan's and Korea's exam bans, the EU's emotion-recognition ban, and the Texas state-law ban list could each be referenced into Chinese regulation during 2026–2028. This blue book's judgment: **no country's student-device bans constrain teacher-side or institutionally deployed devices — "empower the teacher, let the institution control the data" is the path of least international compliance resistance** — which corroborates, at the level of international policy, this blue book's industry through-line of "single-pole breakthrough via teacher POV" (§2.8.3, §11.2). The going-global sequence for Chinese vendors should be: Southeast Asia (platform integration) → the Middle East / Latin America (following infrastructure build-outs) → the EU (after compliance retrofit) → North America (teacher-side / institution-side only).

Note: this section has three time-sensitive points that must be re-verified against the finalization date before formal citation — the EU Digital Omnibus remains a "provisional agreement" as of June 2026, so the wording "proposed postponement to 2027-12-02" should be retained until the formal legislative procedure completes; Korea's publisher damages litigation is still in trial; and the count of US state guidance keeps rising (cite as "35 states + Puerto Rico as of 2025-11").

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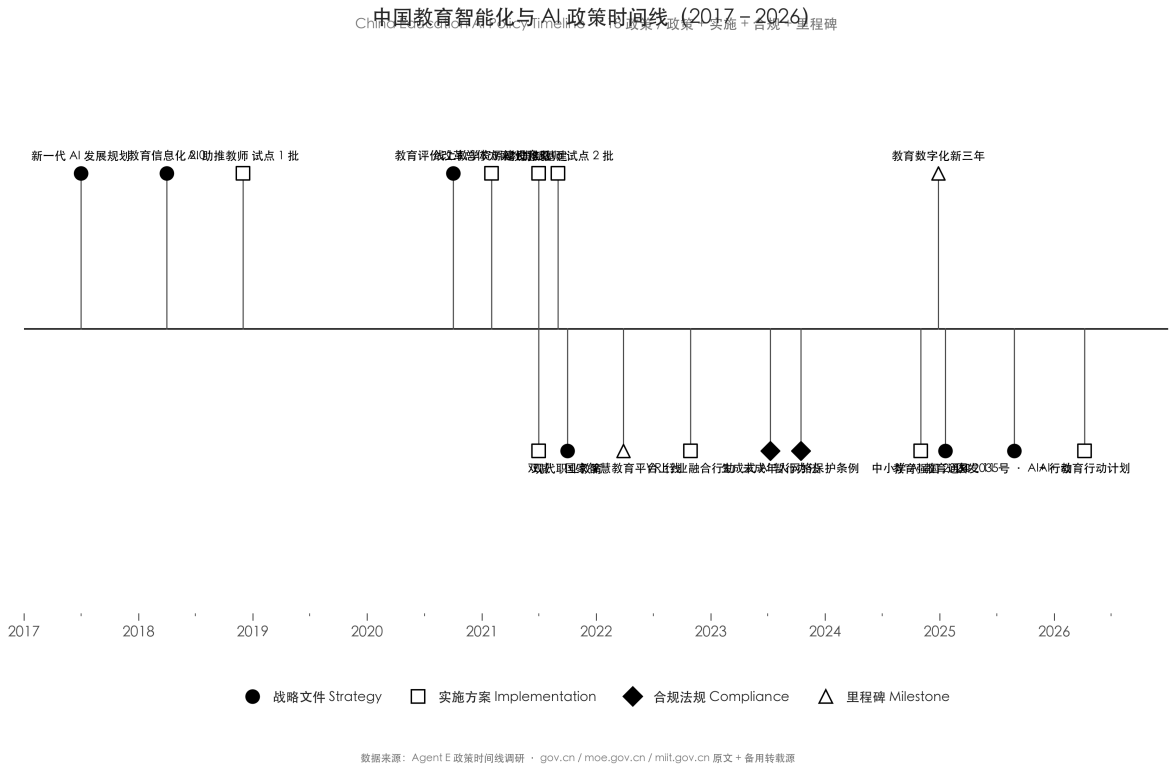


Figure 16. Education AI policy timeline, China and abroad. Source: official policy documents

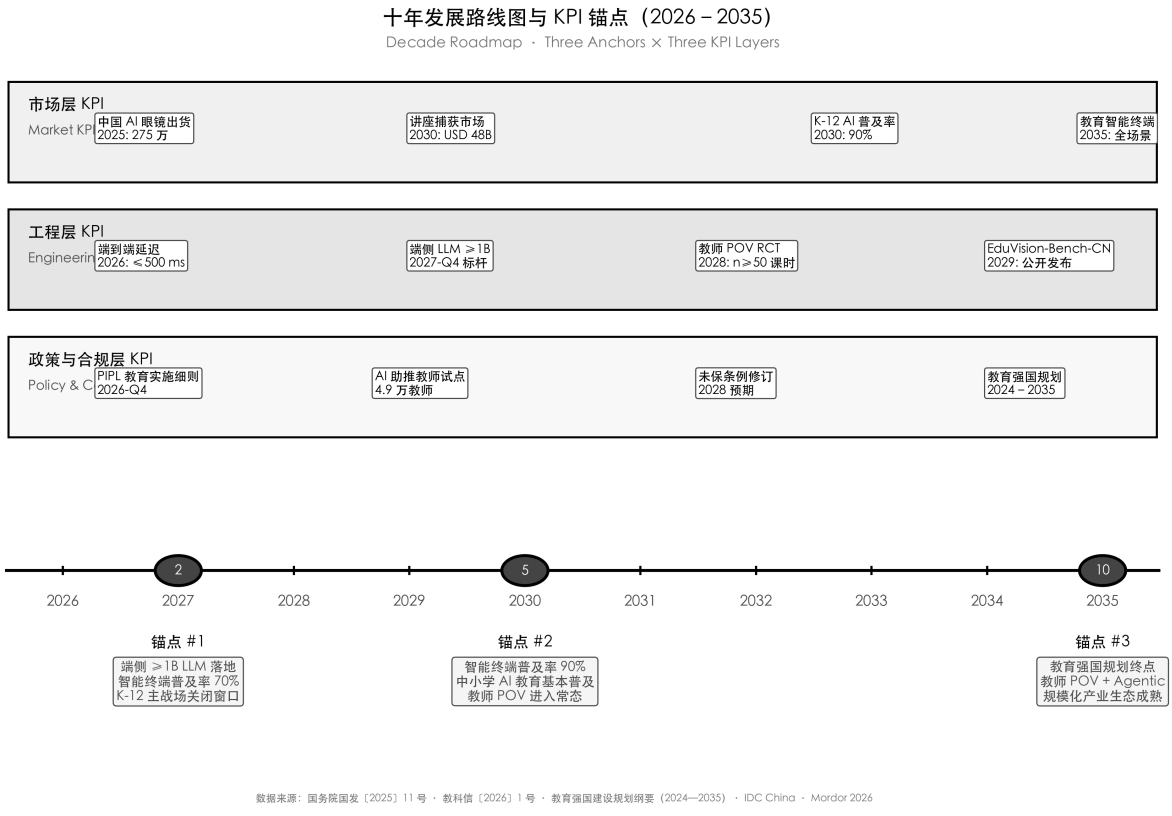


Figure 34. decade roadmap kpi

Chapter 10 Investment and Financing Landscape

AI-SLI · Industry Research Series > Methodology: this chapter maps the 2024–2026 investment landscape through a five-part frame — A-share names, international PE-held assets, three landmark deals, valuation methods, and investment themes — and closes with a judgment on the 2026–2028 IPO / secondary exit window and differentiated valuation anchors for three classes of targets.

The core industry question this chapter answers: as the AI smart glasses and agentic-video education market enters its 2026–2028 IPO and secondary exit window, how should investors identify targets, price them, and time exits? This report treats the A-share names (CVTE / Honghe / Ruijie / Hikvision / Goertek) and the international PE-held assets (Panopto / Echo360 / YuJa) as two parallel paths, the three landmark transactions (Panopto + Elai, Echo360 + GoReact, Seewo + DeepSeek) as signals of industry restructuring, and "teacher-POV strong prior + agentic video" as the long-run valuation anchor — together these three judgments frame the core decisions of an 18–30 month investment window.

10.1 China A-Share / H-Share Names

10.1.1 CVTE (SZSE: 002841)

Basics: listed on the Shenzhen Stock Exchange SME board in 2017, ticker 002841; core business in smart interactive display. Market capitalization (April 2026 close) about RMB 40 billion (≈USD 5.6 billion at RMB 7.2 per USD); trailing P/E about 22x[1].

Key financial data[2]:

- FY2024 total revenue: **RMB 22.401 billion (≈USD 3.1 billion)** (+11.05% YoY); within this, **education-business revenue fell 8.75% YoY**, signaling structural pressure - FY2025 annual report (disclosed 2026-03-26): total revenue **RMB 24.354 billion** (+8.72% YoY); net profit attributable to parent **RMB 1.013 billion** (+4.38% YoY) - Overseas revenue: RMB 4.35 billion (covering 140+ countries) - Cumulative R&D investment: RMB 6.78 billion - Cumulative patents: 6,600+ - Sub-brand matrix: Seewo (K-12 + education commercial display), MAXHUB (enterprise meetings) (note: AVA does not belong to CVTE; it is a subsidiary of Guoxin Culture Holdings (SSE: 600636), as explained below)

Flagship sub-brand: Seewo:

- Ranked first in China's education lecture capture market in 2024 on both revenue and unit shipments[2] - Had entered 2 million+ classrooms nationwide by end-2020[3] - 50.8% unit share of China's education IFPD market in 2024 (CVTE 2024 annual report, DISCIEN basis; first for 13 consecutive years)[4] -

Began phased integration of the DeepSeek LLM across the full product line on February 8, 2025[5] - Seewo Teaching LLM 2.0: a "1+N+N" technical architecture, 220 billion tokens of education data, on-premises deployment[6] - 1 million+ cumulative activated users of the AI lesson-preparation feature (FY2025 annual report basis, disclosed 2026-03-26); single-lesson preparation time cut from 2 hours to 30 minutes[6]

> *Note: AVA (which supplies the underlying solution for the national "Three Classrooms" initiative and ranks top three in higher-education lecture capture share[7]) is a wholly owned subsidiary of Guoxin Culture Holdings (SSE: 600636, formerly "San'aifu," ultimately controlled by the State-owned Assets Supervision and Administration Commission of the State Council). It belongs **neither to CVTE nor to iFLYTEK**; it is therefore no longer counted within the CVTE group here, and its ownership is covered under Guoxin Culture Holdings (600636).*

Core investment value: CVTE is China's "infrastructure-grade leader" combining AI-education hardware, an LLM, and commercial display in one — shipment scale (2 million+ classrooms), in-house teaching-LLM capability (220 billion tokens), and an interactive-flat-panel and lecture-capture product line (Seewo). In the optimistic scenario of the stacked three-layer TAM for 2026–2028 (§7.3), CVTE is the most directly exposed A-share beneficiary.

10.1.2 Honghe Technology (SZSE: 002955)

Basics: listed on the Shenzhen SME board in 2019, ticker 002955; core business in smart interactive display and education-informatization solutions. Market capitalization (April 2026 close) about RMB 13 billion[8].

FY2024 key data[9]:

- Total revenue: **RMB 3.525 billion** - Overseas revenue: RMB 1.951 billion (**55.36%** of total) - Education product coverage: 2.3 million+ classrooms, 80 million teachers and students - K-12 interactive flat panels: a combined **75.8%** Top-2 share with Seewo (DISCIEN, Q3 2023: Seewo 54.6% + Honghe 21.2%; this is a Q3 2023 figure, not a full-year 2024 figure)[4]

Product matrix:

- Honghe smart blackboards - The Honghe AI teaching-assistant appliance (4 cameras + 8-microphone array + a local LLM on 10 TOPS of on-device compute) - Honghe Cloud Classroom - Honghe Zhijiaoyun training - The overseas brand NEWLINE (primarily North America)

Core investment value: Honghe is the A-share name with the **highest overseas-revenue share** in Chinese AI-education hardware (55.36%)[9], with a mature internationalization path. The NEWLINE brand holds a stable position in North American K-12 smart classrooms. Honghe's 2024–2025 launch of a "practical-training lecture capture" form factor makes it the key A-share name to watch on the teacher POV + agentic video path.

10.1.3 Ruijie Networks (SZSE: 301165)

Basics: listed on the Shenzhen ChiNext board in November 2022, ticker 301165; core business in enterprise and campus networking. Market capitalization (April 2026 close) about RMB 20 billion[10].

FY2024 key data:

- Total revenue: about RMB 12 billion - Education business: about 25% of revenue - Campus-network market share: top three

Core investment value: Ruijie is the underlying network infrastructure of AI glasses and agentic video in education — any device-cloud collaborative inference for AI glasses depends on stable campus networking. Ruijie plays the network layer in the build-out of the 43,000 smart classrooms (upstream-downstream complementarity with Seewo/Honghe intelligent terminals).

10.1.4 Hikvision (SZSE: 002415)

Basics: listed on the Shenzhen SME board in 2010, ticker 002415; core business in video surveillance and IoT. Market capitalization (April 2026 close) about RMB 280 billion[11].

Core investment value: Hikvision's education segment runs two product lines — education lecture capture and student holistic-quality assessment. Its classroom management, AI cameras, and behavior analytics are structurally complementary to the "teacher POV + panoramic capture" path of AI glasses. But education is a small share of total revenue (<5%); the investment value mainly rests on potential "AI video technology + education vertical integration" cooperation.

10.1.5 Goertek (SZSE: 002241) — the Contract-Manufacturing Giant

Basics: listed on the Shenzhen SME board in 2008, ticker 002241; core business in acoustics components and smart-hardware contract manufacturing. Market capitalization (April 2026 close) about RMB 80 billion[12].

Links to AI glasses:

- Goertek is the core contract manufacturer of Meta's Quest VR headsets - Leading position in contract manufacturing for domestic VR/AR makers including Pico and Rokid - Entered AI-glasses manufacturing in 2025–2026 (part of Xiaomi AI Glasses and Huawei AI Glasses production)

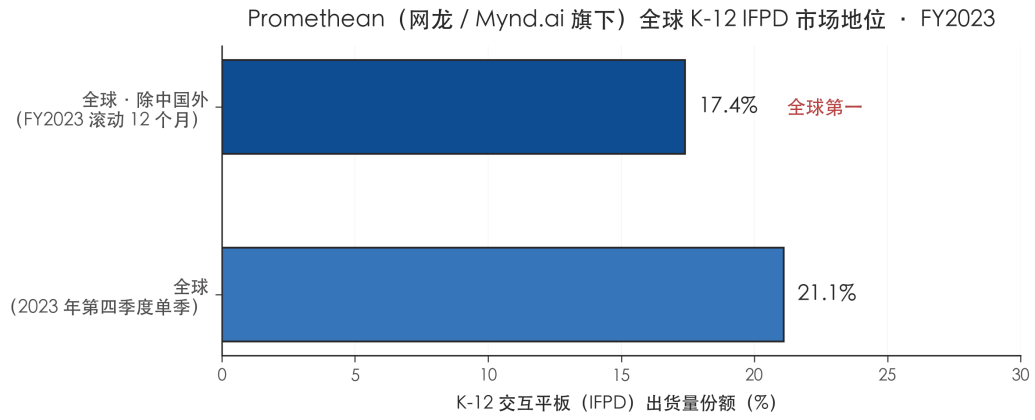
Core investment value: Goertek is the upstream manufacturing giant of the AI-glasses hardware segment, carrying the BOM manufacturing capability that underwrites scaled domestic shipments. In the BOM teardown of §7.4.2, Goertek captures roughly 30–40% of contract-manufacturing value — Goertek's share price is markedly more sensitive to AI-glasses shipment volumes than SoC or light-engine suppliers.

10.1.6 NetDragon Websoft Holdings (HKEX: 0777) — the "AI + Education / AI + Games" Dual Core and the Rokid Strategic Position

Within the AI smart glasses education value chain, **NetDragon Websoft Holdings (HKEX Main Board: 0777; US OTC: NDWTY)** is a distinctive "content–hardware–channel" three-in-one target: it is both a leading hardware group in the global K-12 interactive flat panel (IFPD) market (through its subsidiaries Mynd.ai / Promethean) and, via its strategic investment in **Rokid**, a content and channel partner entering the AI-glasses segment. For this report's theme, NetDragon is the key intersection connecting the "education-hardware installed-base market" with the "AI-glasses incremental market."

Company overview[38]: NetDragon was founded in Fuzhou, Fujian, in 1999, with Liu Dejian as chairman; it began with the early Chinese gaming portal 17173.com, the self-developed online games *Eudemons* and *Conquer*, and the app store 91 Wireless (later sold to Baidu). Its current strategy positions it as a dual core of "AI + Games" and "AI + Education," with two principal segments — **games and application services** and **education (Mynd.ai)**.

Education segment: the global standing of Mynd.ai (NYSE: MYND) and Promethean[39]. In December 2023, NetDragon completed the spin-off listing of its overseas education business by merger with NYSE-listed Gravitas Education (GEHI), with the renamed entity **Mynd.ai, Inc.** (NYSE: MYND); the combined entity was valued at about **US$800 million**, with NetDragon holding about **74.39%** (about 74.1% as of 2025-06-30, per NetDragon's interim report and Mynd.ai's 20-F). Mynd.ai's core hardware brand **Promethean** focuses on K-12 interactive flat panels (the ActivPanel line) and ActivInspire teaching software: per Futuresource Consulting data, Promethean's **FY2023 global (ex-China) K-12 IFPD shipment share reached 17.4%, ranking first worldwide** (21.1% in Q4 2023), and it held the #1 position in markets including the US, the UK and Ireland, and Germany (FY2023 official disclosure is qualitative only, without per-country percentages; US market share reached 30.8% in FY2022); Mynd.ai's interactive-display installed base covers **126 countries and over 1 million learning / training spaces**[40]. Its domestic education line operates under the "NetDragon Huayu Education" brand, with platforms such as 101 Education PPT and 101 Smart Classroom / NetEdu Pass for lesson preparation, teaching, and public services.



并在美国、英国及爱尔兰、德国 K-12 市场份额第一（官方仅作定性披露，未给各国百分比；美国 FY2022 曾达 30.8%）
来源：Futuresource Consulting（经 Promethean / 网龙 FY2023 披露）。口径为出货量份额、地域为全球除中国外；17.4% 为滚动 12 个月、21.1% 为 2023Q4 单季。

Figure 86. Promethean (NetDragon / Mynd.ai) global K-12 IFPD market position. Source: Futuresource Consulting (FY2023)

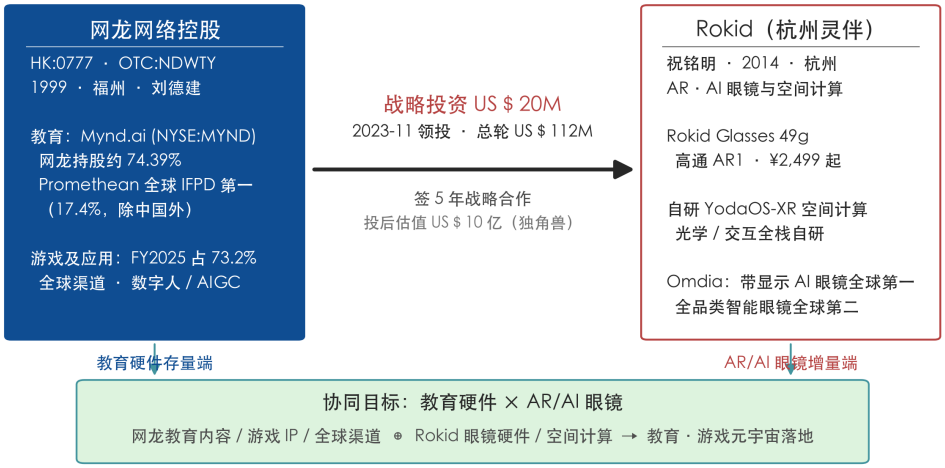
Latest financials (RMB basis)[41]: NetDragon reports in RMB and pays dividends in HKD. **FY2025 full-year (announced 2026-03-26) total revenue was RMB 4.5 billion, −26.0% YoY**, of which games and application services were RMB 3.3 billion (73.2%) and education (Mynd.ai) was RMB 1.2 billion (about 26.7%, down about 43% YoY); profit attributable to shareholders was RMB 151 million (−51.4% YoY). Revenue has declined for four consecutive years from RMB 7.866 billion in FY2022 (7.866 → 7.1 → 6.05 → 4.5 billion), chiefly because the **education / Mynd.ai business contracted amid global education-budget uncertainty and soft IFPD hardware demand**; the gaming segment is the profit ballast (FY2025 gaming segment profit margin 27.4%). The company announced a shareholder-return program of no less than HK$600 million for FY2025. **Investment implication**: NetDragon is a three-layer structure of "gaming cash cow + global education-hardware leader + AI-glasses strategic option," and its valuation should apply a prudent discount for the cyclical contraction of the education business and the sustainability of Promethean's share.

The strategic investment in Rokid (a focus of this report)[42]: **on November 20, 2023, NetDragon, as lead investor, completed a US$20 million strategic investment in Rokid and signed a five-year strategic cooperation agreement**; the round totaled about **US$112 million** (Series C basis), implying a post-money Rokid valuation of **US$1 billion (unicorn status)**. NetDragon vice-chairman Dr. Simon Leung stated that education and games are the two key use cases for landing AR, while Rokid founder Misa Zhu emphasized leveraging NetDragon's education / gaming content and global channels for expansion. The division of strategic synergy is: **NetDragon provides education (Huayu / Mynd.ai / Promethean channels and classroom content), gaming IP, a global sales network, and digital-human / AIGC capabilities, while Rokid provides AR/AI-glasses hardware and in-house YodaOS spatial computing and optical-interaction technology**. Two points on attribution: first, a September 2022 reference to a "US$40M NetDragon investment in Rokid" was a **statement from Rokid's side, with no corresponding standalone official announcement from NetDragon**, and whether it refers to the same investment as the November 2023 US$20M cannot be confirmed from public information — this report adopts NetDragon's officially disclosed US$20M; second, **NetDragon's precise equity stake**

in Rokid has not been officially disclosed and awaits confirmation in Rokid's Hong Kong listing prospectus (marked "to be verified"). For Rokid's own products, shipments, and IPO progress, see §4 on the device-brand landscape.

> ***Positioning logic of a focus company**: NetDragon's uniqueness lies in holding both an "education-hardware installed base" (Promethean's global IFPD #1) and an "AI-glasses incremental option" (lead-investing Rokid). As AI glasses penetrate from consumer scenarios into education, NetDragon has the content and channel foundation to extend the "interactive-panel classroom" into a "glasses + panel hybrid classroom" — a structural position that neither a pure glasses-hardware maker nor a pure content provider possesses. But realizing this option depends on the scaling of Rokid's education deployment and the stabilization of Mynd.ai's education business, which remains suppressed by education-budget cycles in the near term.*

网龙网络控股（HK:0777）— Rokid 战略投资与协同结构



来源：PR Newswire 2023-11-20（US $ 20M 领投 · 总轮 US $ 112M · 5 年战略合作）；网龙 FY2025 业绩稿；Futuresource（Promethean 17.4%）。持股比例待 Rokid 招股书复核。

Figure 85. NetDragon (HKEX:0777) — Rokid strategic investment and synergy structure. Source: PR Newswire 2023-11-20; NetDragon FY2025 results; Futuresource Consulting

10.1.7 Guoxin Culture Holdings (SSE: 600636) — AVA's Parent and a Central-SOE Lecture-Capture Name

Guoxin Culture Holdings (600636, formerly "San'aifu") is the parent of AVA[7]. In 2016 the company announced a cash acquisition of 100% of Guangzhou AVA Electronics Technology for RMB 1.9 billion, with completion in early 2018, after which the controlling shareholder became the **State-owned Assets**

Supervision and Administration Commission (SASAC) of the State Council (through the China Wenfa Group / China Reform Holdings chain); in May 2020 the stock's short name was changed from "San'aifu" to "Guoxin Culture" (the ticker unchanged). AVA is China's leader in government-procurement education lecture capture, supplies the underlying solution for the national "Three Classrooms" initiative, and ranks top three in higher-education lecture capture share. **Investment implication**: Guoxin Culture is one of the few education-informatization names combining a central-SOE shareholder background with a government-procurement moat, but its performance is tightly bound to local education-informatization fiscal budgets, with pronounced cyclicality and policy sensitivity; in the AI-glasses incremental segment, AVA's installed lecture-capture channel is a potential glasses-data ingestion entry point, though the company has not yet publicly disclosed any AI-glasses initiatives.

10.1.8 H-Share / US-Listed Names

iFLYTEK (SZSE: 002230 / US ADR): an education business line built on the iFLYTEK Spark LLM. Education products and services generated RMB 2.86 billion in H1 2024, +25.14% YoY[13]. Spark holds the dual advantage of "filing compliance + government procurement channels" in K-12 pilots.

Koolearn / TAL Education / NetEase Youdao: H-share / US-listed tutoring names. TAL began investing heavily in AI education in 2024 and intersects with Seewo and Honghe on the SaaS side.

CVTE H-shares: CVTE began preparing a secondary H-share listing in 2025, expected to complete in 2026–2027 — which would make it China's first "A+H dual-listed" education-hardware leader.

10.2 International PE Ownership vs. Public Markets

The international lecture capture and agentic-video SaaS market has settled into a binary structure: PE-held assets versus public-company pressure.

10.2.1 Panopto — Held by K1 Investment Management

Basics: founded 2007 in Seattle; acquired outright by K1 Investment Management in April 2021[14]. Panopto is one of the global lecture capture SaaS leaders, covering 1,000+ higher-education institutions and 30 million+ student users[15].

Key moves, 2024–2025:

- 2024-10: acquired the AI text-to-video platform Elai.io[16] (see §10.3.1) - 2025–2026: the AI Access feature matrix — transcription in 12+ languages, Smart Chapters, Insights - An "official recommended camera" partnership with Epiphan's EC20 multi-camera PTZ devices[17]

Valuation and exit: K1 has held Panopto for 5+ years and is expected to complete an IPO or strategic sale in 2026–2028. Valuation anchor: Panopto's 2024 ARR is estimated at about USD 90 million; at an 8–12x SaaS ARR multiple, that implies roughly USD 720 million–1.08 billion[18].

10.2.2 Echo360 — Held by Centre Lane Partners

Basics: founded 2007 in Virginia; held by Centre Lane Partners[19]. Coverage of 2,000+ customers, 2 million+ learners, 1,200+ schools[19][20].

Key moves, 2024–2025:

- 2024-05: o15 Capital Partners, alongside Centre Lane Partners, extended a USD 43 million credit facility to Echo360[21] - 2025-05-08: completed the acquisition of GoReact (AI video skills assessment)[22] (see §10.3.2) - 2025–2026: recognized in two categories — teaching assessment and video learning platforms — on the Gartner Hype Cycle[23]

Valuation and exit: Echo360 is valued at an estimated USD 500–800 million. Combined with the 2024–2025 USD 43 million credit facility and the GoReact acquisition, Echo360 carries the highest IPO probability in 2027–2028.

10.2.3 Kaltura (NASDAQ: KLTR) — Public-Market Pressure

Basics: founded 2006 in Tel Aviv; NASDAQ-listed in 2021, ticker KLTR[24]. The only publicly listed lecture capture SaaS name.

FY2024 key data[24]:

- Total revenue: USD 187 million - EdTech ARR: USD 187 million - Students covered: about 25 million - Per-student ARPU: about USD 7.5 (basic video management + AI captioning; excludes higher-order agentic features)

The public-market squeeze: Kaltura's stock fell from a historical high of USD 25 to USD 1.5–2.5 in 2024, a market capitalization of about USD 200–300 million and a price-to-sales ratio of just 1.1–1.6x[24] — far below the 8–12x ARR multiples of private SaaS. The valuation gap says one thing clearly: **a pure-SaaS business model faces markedly heavier valuation pressure in public markets than under PE ownership**. This is the core reason Panopto and Echo360 chose the "PE ownership + delayed IPO" path.

10.2.4 YuJa — A "Major Investment" in August 2025

Basics: YuJa is a mid-tier lecture capture SaaS vendor that completed a "major investment" in August 2025[25]. Coverage of 600+ customers[26].

Core investment value: YuJa's 2025–2026 financing shows that capital continues to back the lecture capture SaaS segment. Its differentiation versus Panopto/Echo360: YuJa focuses on K-12 and the training market, while Panopto/Echo360 skew to higher education and enterprise.

10.2.5 Mediasite — Acquired by Enghouse in 2024

Basics: Mediasite is the legacy lecture capture hardware + SaaS vendor. On February 9, 2024, Sonic Foundry sold it to the Canadian listed company Enghouse Systems for **USD 15.5 million in cash**[27]. Sonic Foundry's 2023 disclosures put Mediasite revenue at about USD 36 million[28] — implying a sale at roughly 0.43x sales.

Core meaning: Mediasite's distressed price is a defining signal for the lecture capture industry — **the pure hardware-recorder business model is depreciating**. Its "hardware recorder + SaaS platform" dual-track structure lost competitiveness over 2020–2023, crushed by the "pure SaaS + AI value-add" path of Panopto and Echo360. This is the value-destruction path investors must watch for in 2026–2028.

10.3 Three Landmark Transactions

Three landmark transactions in 2024–2025 redrew the map of lecture capture and agentic-video SaaS.

10.3.1 2024-10: Panopto + Elai (AI Text-to-Video)

Deal summary: in October 2024, Panopto acquired the AI text-to-video platform Elai.io[16]. Terms were undisclosed; based on Elai.io's estimated 2024 ARR of USD 5–8 million, the consideration is estimated at USD 40–80 million[29].

Strategic meaning: through Elai, Panopto gains AI text-to-video — a teacher inputs an outline, and AI generates the video course. Combined with Panopto's existing lecture capture + AI captioning + Smart Chapters, this completes a four-stage video content pipeline: capture → transcribe → generate → recompose.

Implication for Chinese vendors: Seewo, Honghe, Zhongqing, AVA, and CVTE must follow with AI text-to-video capability in 2026–2027 or fall visibly behind in feature benchmarking against international SaaS. The "automatic courseware generation" feature of Seewo Teaching LLM 2.0 still trails Elai today[6].

10.3.2 2025-05: Echo360 + GoReact (AI Video Skills Assessment)

Deal summary: on May 8, 2025, Echo360 completed its acquisition of GoReact[22]. GoReact is the leading SaaS in AI video skills assessment, focused on professional training that requires the four-step loop of "rehearse → record → feedback → assess" — teacher preparation, nursing, social work. GoReact's 2024 ARR is estimated at USD 25–35 million[29].

Strategic meaning: through GoReact, Echo360 gains AI video skills assessment — the international version of the Layer 3 teaching research services discussed in §8.5, playing the video coaching role. Echo360 + GoReact creates synergy across the two tracks of lecture capture and skills assessment.

Implication for Chinese vendors: China's teacher-training market currently lacks a GoReact-class professional SaaS for AI video skills assessment. Seewo Xinge and Honghe Zhijiaoyun training remain centered on content delivery and tool operation, and have not entered video skills assessment. This is a latent incremental opportunity for academic institutions plus premium industry training providers (see the recommendations to SaaS players in §11.2).

10.3.3 2025-02: Seewo Integrates DeepSeek

Deal summary: on February 8, 2025, CVTE announced on its official channel that "Seewo, the company's education brand, will integrate the DeepSeek LLM across its full product line in an orderly

manner from February 8"[5]. This is not an acquisition but a technology integration and ecosystem partnership — yet its industry significance rivals one.

Strategic meaning:

- Seewo became the "DeepSeek education leader," with a positive short-term share-price reaction[30] - Seewo Teaching LLM 2.0's "1+N+N" architecture extends through DeepSeek into a multi-model fusion: in-house base + DeepSeek + Qwen + Kimi[20] - In the device–cloud architecture, DeepSeek carries deep cloud-side generation, the in-house base carries domain knowledge and education-terminology alignment, and a lightweight on-device model carries fast perception[6] - CVTE explicitly cautioned that "the adaptation, deployment, and market expansion of the DeepSeek LLM in relevant products remain uncertain"[5] — a posture of compliance prudence

Implication for Chinese vendors: Seewo + DeepSeek is the landmark case of pairing a domestic hardware leader with a domestic open-source LLM, triggering the 2025–2026 wave of peers — Honghe, AVA, NetDragon (Huayu Education) — integrating DeepSeek. This "deep binding to the domestic ecosystem" is the core policy-industry logic behind the hardware-vendor recommendations in §11.4.

10.4 Diverging Investment Themes

10.4.1 The AI-Glasses Hardware Segment

Meta vs. the domestic camp: Meta held 82% global share in H2 2025[31] — the absolute leader. The domestic ecosystem (Xiaomi, RayNeo, Rokid, Huawei, Quark of Alibaba, Namibox) entered hypergrowth in 2025–2026; IDC forecasts Chinese brands at about 45% global share in 2026, with shipments of 22.67 million units (+56.3% YoY)[32].

Investment themes:

- **BOM cost vs. software value**: hardware gross margins run 30–40%; software value (e.g., the Seewo Teaching LLM) runs 50–70% — investors should focus on dual-engine "hardware + software" vendors; pure-hardware names face a limited valuation ceiling - **Vertical supply-chain integration**: Goertek (manufacturing) + Sony Micro-OLED + Qualcomm SoCs + in-house light engines (RayNeo, Rokid, Namibox) define the key vertical-integration capability - **Education-vertical SKUs on shared lines**: co-manufacturing with consumer SKUs (see §11.4.5) is the key to scale

10.4.2 The Agentic Video SaaS Segment

A 7x valuation-basis gap: §7.2.2 of this report shows China's SaaS ARPU at only 15–30% of international levels — which translates into Chinese SaaS business valuations at roughly 1/4–1/5 of international peers'. The gap reflects both the structural constraint of government-procurement price pressure and the transitory factor of an immature domestic ecosystem.

Investment themes:

- **Per-student models vs. teaching research services**: per-student models (Panopto, Echo360) scale well but grow ARPU slowly; teaching research services (GoReact) carry high unit prices but a low market

ceiling — investors should favor dual-track vendors - **AI value-layer maturity**: vendors differ sharply in valuation along the four-stage maturity ladder — AI captioning (basic) → Smart Chapters (intermediate) → agentic video Q&A (advanced) → video skills assessment (top) - **Self-built agentic-video benchmarks**: SaaS vendors that partner deeply with hardware makers and build their own K-12 classroom benchmarks should be anchored on "benchmark influence" rather than ARR multiples — see the investor recommendations in §11.6

10.4.3 The Education LLM Segment

The Seewo / Honghe / Zhongqing domestic ecosystem: Seewo Teaching LLM 2.0 (220 billion tokens), the Honghe AI teaching-assistant appliance (10 TOPS of on-device compute), and Zhongqing Zhike (AI evidence-based teaching research) form a domestic education-LLM ecosystem of "hardware + model + services."

DeepSeek / Qwen as model suppliers: general-purpose LLM vendors — DeepSeek, Qwen, ERNIE Bot, ChatGLM, Kimi, Doubao — enter the education vertical via API; Seewo's DeepSeek integration is the opening move of this path[5].

Investment themes:

- **A-share names (CVTE, Honghe, iFLYTEK) vs. general-LLM unicorns (DeepSeek, Qwen, ERNIE)**: A-share names hold stable education-ecosystem access but mid-level AI self-research capability; LLM unicorns hold technical leadership but shallow education-vertical depth — investors should hedge across the two classes - **Domestic vs. international**: under the EU AI Act's education-scenario prohibitions (§9.5.3), domestic models hold a structural compliance advantage in the Chinese market; international vendors (e.g., OpenAI, Anthropic) face constrained China share - **On-device LLM capability**: on-device ≥1B-parameter LLMs are the policy watershed (§9.6.2) — model suppliers with on-device deployment capability (e.g., DeepSeek 7B/13B variants) merit higher valuations

10.5 Valuation Methods

10.5.1 ARR Multiples (SaaS)

International private SaaS: 8–12x ARR (Panopto, Echo360).

International public SaaS: 1–4x sales (Kaltura at 1.1–1.6x[24]).

Chinese SaaS: A-share SaaS segments at 4–8x sales (e.g., the imputed Seewo SaaS share of CVTE).

Key judgment: Chinese SaaS multiples sit below international private but above international public levels — matching the dual character of "Chinese SaaS ARPU at 15–30% of international levels, but faster growth."

10.5.2 Classroom and Teacher-Student Counts (Hardware)

Seewo / Honghe valuation anchors:

- Seewo: 2 million+ classrooms covered at a RMB 40 billion valuation → about RMB 20,000 of value per classroom - Honghe: 2.3 million+ classrooms at RMB 13 billion → about RMB 5,650 per classroom - Seewo's 3.5x premium derives mainly from the three-in-one synergy of lecture capture + LLM + overseas

An AI-glasses valuation anchor (imputed):

- At the §7.2.1 teacher-coverage rate of 50%: 18.851 million teachers (2024 communiqué basis) × 50% ≈ 9.43 million teachers - An AI-glasses vendor winning a 10% teacher share (about 940,000 teachers), at RMB 1,500 of value per teacher → a valuation of about RMB 1.4 billion - This anchor sits far below Seewo/Honghe — reflecting AI glasses' early-penetration stage in K-12

10.5.3 Per-Student ARPU

International SaaS per-student ARPU:

- Echo360: USD 8–25 per student per year - Panopto: USD 22 per student per year - Kaltura: USD 7.5 per student per year

Chinese SaaS per-student ARPU:

- Seewo EasyNote: about RMB 15–50 per student per year - Honghe Cloud Classroom: about RMB 20–50 per student per year

Valuation meaning: on per-student ARPU, an international SaaS covering 25 million students (Kaltura) = USD 187 million ARR; at 8x = USD 1.5 billion. A Chinese SaaS covering 64 million teachers (Smart Education of China platform data[33]) × RMB 30 ARPU = RMB 1.92 billion ARR; at 5x = RMB 9.6 billion. The two bases differ and must be estimated separately.

10.5.4 LTV / CAC

SaaS LTV/CAC ratios:

- Quality international SaaS (Panopto, Echo360): about 5–8x - Domestic education SaaS: about 3–5x (high CAC, middling renewal rates) - **Smart Education of China as an acquisition channel materially lowers Chinese SaaS CAC** — once the national platform runs stably in 2027–2028, we expect Chinese SaaS LTV/CAC to converge toward international levels

10.6 The 18–30 Month Investment Window

10.6.1 Three Drivers of the Window

The 2026–2028 triennium is the golden investment window of the AI smart glasses and agentic-video education industry — on three drivers:

Driver 1 — the policy window (§9.6): the first phase of the MOE's "AI Plus Education" Action Plan (2025–2027) creates the policy-access dividend.

Driver 2 — the technology-maturity window: Counterpoint Research data show global smart-glasses shipments +139% YoY in H2 2025 with AI glasses at 88% of total shipments[31] — the hardware generational leap is complete.

Driver 3 — the capital-exit window: high IPO probability for Panopto/Echo360 in 2027–2028; CVTE's secondary H-share listing expected in 2026–2027; and a re-rating window across domestic names after Seewo's DeepSeek integration.

10.6.2 The Risk of Missing the 2026–2028 Cycle

Vendors and investors who miss this window face triple pressure:

Pressure 1 — tightened regulation: after 2027, the "AI Plus Education" Action Plan enters its second phase, with markedly stricter compliance review of new entrants **Pressure 2 — Apple's entry**: in 2027–2028, Apple's Vision Air / second-generation lightweight AI glasses enter China and reshape the premium tier[2021] **Pressure 3 — installed-base saturation**: the K-12 intelligent-terminal market approaches saturation in 2028–2030 (90% penetration)[14]

10.6.3 Path Choices: Domestic Ecosystem vs. International Players

The paths of the domestic ecosystem and international players fork within the 2026–2028 window:

The domestic-ecosystem path:

- Deep binding to the 2 million+ classroom installed-base ecosystems of Seewo / Honghe / CVTE / Hikvision / AVA / Ruijie - Integration with domestic open-source LLMs (DeepSeek / Qwen / Kimi) for the triple advantage of filing + compliance + Chinese-language optimization - Overseas expansion into Belt and Road countries, Southeast Asia, South Asia, and Africa (Honghe's NEWLINE success in North America as the reference template)

The international-player path:

- Meta, Apple, Google, and Samsung dominate the consumer and premium tiers - "Hardware + software" synergy with international SaaS — Panopto, Echo360, Kaltura, YuJa - China entry requires the full five-ministry certification stack (§9.6.5)

Key judgment: within the 2026–2028 window, the domestic and international paths are not zero-sum; they run in parallel — domestic players dominate K-12 plus vocational education; international players dominate higher education plus corporate training. Investors should hedge across both paths rather than bet on one.

10.7 The Investment Risk Checklist

10.7.1 Regulatory-Shock Risk

Risk: any major minors' data breach in 2026–2028 could trigger a policy response of "a blanket pause on AI glasses in K-12" — by precedent, the 2024 Waseda smart-glasses cheating case triggered Japan's 2025–2026 Common Test rule change[34].

Mitigation: portfolios should hold names with the full compliance triplet — on-device LLM + recording-indicator LED + MDM remote freeze — and avoid the bare "consumer AI glasses into schools" path.

10.7.2 Privacy-Incident Risk

Risk: the 2026 case of a Texas private high school banning smart glasses outright after parental complaints has set a precedent[35] — any major privacy incident can trigger a school-wide shutdown.

Mitigation: portfolios should avoid "BYOD + student-worn" paths and concentrate on "teacher POV + school centralized procurement."

10.7.3 Teacher-Resistance Risk

Risk: teachers may resist the "AI glasses + learning-status visualization" path as surveillance — by reference to controversies in several countries over AI evaluation of teachers' work.

Mitigation: portfolios should hold "teacher-empowerment" rather than "teacher-evaluation" names — Seewo/Honghe's 600,000-user activation of lesson-preparation relief[6] is the benign case; products centered on grading teachers' classroom behavior warrant high caution.

10.7.4 Technology-Failure Risk

Risk: mass production of on-device ≥1B LLMs could slip past 2028 on power, process-node, and model-compression challenges — leaving the domestic camp at a disadvantage against Apple.

Mitigation: portfolios should hold vendors with dual device + cloud stacks rather than a single bet on on-device.

10.7.5 International Supply-Chain Disruption Risk

Risk: core AI-glasses components currently depend on international suppliers — Sony Micro-OLED (Japan), Qualcomm AR1 Gen 1 (US), Corning Gorilla Glass (US), JBD MicroLED (China, with partial international dependence). If US–China technology tensions escalate, a key-component cutoff could stall scaled domestic shipments.

Mitigation: portfolios should weight vendors with vertical in-house capability (RayNeo's in-house Firefly light engine, Quark's in-house dual light-engine module, Namibox's in-house education-vertical LLM) and reduced single-supplier dependence; and track domestic-substitution names — BOE / San'an

Optoelectronics (display chips), UNISOC / Allwinner (SoCs), AAC / Luxshare Precision (optics and assembly).

10.7.6 Capital-Environment Risk

Risk: the global capital environment over 2026–2028 may shift on geopolitics, rate policy, and the AI bubble. International PE exits (K1, Centre Lane Partners) could be delayed by public-market conditions; A-share / H-share valuations could reset with the macro cycle.

Mitigation: hold a 5–7 year horizon and avoid premature exits in short-term volatility. The §11.6 investor recommendations make the holding period explicit at 5–7 years — the full development cycle of China's AI glasses and agentic-video education market, from the policy window through the 2030 anchor.

10.8 Differentiated Valuation Anchors for Three Classes of Targets

Synthesizing §10.1–§10.7, this report assigns differentiated valuation anchors to the three classes of investment targets:

10.8.1 A-Share Leaders (CVTE / Honghe / Ruijie / Hikvision / Goertek)

Valuation anchors:

- **Installed-classroom valuation**: Seewo at 2 million+ classrooms / Honghe at 2.3 million+ — RMB 5,000–20,000 of value per classroom - **Overseas-revenue premium**: Honghe's 55.36% overseas share → overseas revenue at 8–12x sales (vs. 4–6x domestic) - **In-house LLM premium**: Seewo Teaching LLM 2.0 (220 billion tokens) → a 20–30% valuation premium for model self-research

Key judgment: the core anchor for A-share leaders is the trio of installed ecosystem + overseas revenue + in-house LLM — within the 2026–2028 window, investors should track the earnings inflection of "AI glasses entering the installed classroom base" across the three names.

10.8.2 International PE-Held Assets (Panopto / Echo360 / YuJa)

Valuation anchors:

- **ARR multiples**: 8–12x ARR for international private SaaS - **AI value-layer maturity premium**: vendors with the complete three-layer stack — Smart Chapters + agentic video Q&A + video skills assessment — command +20–40% on multiples - **IPO timing**: valuations begin pricing the IPO 6–12 months ahead of the 2027–2028 window

Key judgment: the core anchor for PE-held assets is "AI value-layer maturity + IPO timing" — investors should enter the secondary market early in 2026–2027 (e.g., PE secondary-stake transfers in Panopto/Echo360) to share the IPO valuation release.

10.8.3 Domestic Unicorns (DeepSeek / Qwen / Kimi / Zhipu / Moonshot / RayNeo / Rokid / Namibox)

Valuation anchors:

- **Model-layer unicorns (DeepSeek / Qwen / Kimi / Zhipu / Moonshot)**: general-LLM valuations already exceed RMB 100 billion per company (e.g., DeepSeek, Qwen). The education vertical, as one application track, contributes roughly 5–10% of valuation. - **Hardware unicorns (RayNeo / Rokid / Namibox)**: RayNeo closed RMB 1 billion+ of new financing in 2026[36]; Rokid holds about 4% of the AI-glasses brand-share basis (Meta ~84%, Rokid 4%, Huawei 3%) per Smart Analytics Global (SAG), a single-analyst source that should be cross-checked against Counterpoint and Omdia[37]; Namibox is the first-mover K9 education-vertical sample. Hardware-unicorn valuations sit in the RMB 3–8 billion range, anchored mainly on IDC China market share. - **Agentic video SaaS startups**: domestic agentic-video SaaS unicorns are scarce — the value pocket of the 2026–2028 window. Investors should watch for spin-offs of agentic-video businesses from leading education AI companies.

Key judgment: the core anchor for domestic unicorns is "independent track + domestic-ecosystem binding + education-vertical focus" — within the 2026–2028 window, investors should concentrate on a hedged pairing of hardware unicorns and agentic-video SaaS, and avoid a pure bet on general-LLM unicorns.

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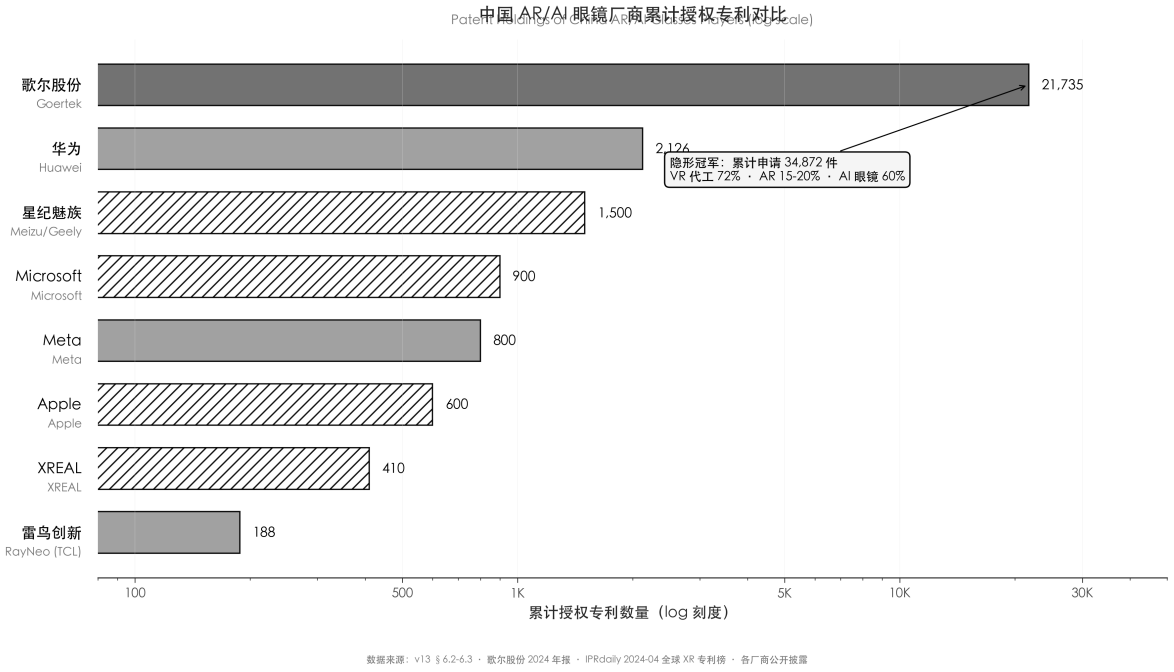

Figure 27. patent compare

Chapter 11 Strategic Recommendations

AI-SLI · Industry Research Series > Methodology: for each of five stakeholder groups — hardware vendors, SaaS/agentic players, school IT decision-makers, investors, and education authorities — this chapter gives five concrete, executable recommendations, plus one dedicated overseas-compliance recommendation each for hardware vendors and SaaS players: 27 in total. Every recommendation carries a "concrete executable action" and a time anchor or numeric anchor, avoiding hollow verbs such as "strengthen / improve / optimize."

The core industry question this chapter answers: with the policy window, the technology-maturity window, and the capital-exit window of 2026–2027 all open at once, what specific strategic moves should the five stakeholder groups make? This report takes "on-device ≥1B LLM + teacher-POV strong prior + deep binding to the domestic ecosystem + deep integration into teaching research workflows + privacy pipeline on by default" as the strategic backbone shared by all five groups, and "Q4 2026 / Q4 2027 / 2030" as the three time anchors. The groups' 25 recommendations interlock, forming a complete "policy + standards + product + capital" action map.

11.1 Five Recommendations for Hardware Vendors

AI smart glasses hardware vendors (Meta, Xiaomi, Rokid, Even Realities, RayNeo, INMO, Quark of Alibaba, Namibox, Huawei, Vuzix, XREAL, and others) decide on SKU positioning, supply chains, and product roadmaps. We give five concrete recommendations.

Recommendation 1: Complete the On-Device ≥1B LLM Engineering Push (Before Q4 2027)

Core action: we recommend completing on-device LLM deployment before Q4 2027, satisfying at minimum four conditions: (a) a main model of ≥1B parameters resident on an edge compute box (campus server room / teacher workstation); (b) on-device keyword monitoring (sensitive terms / privacy terms / minors' identity information) that intercepts before any cloud upload; (c) localized, auditable inference logs; (d) seamless connection to the offline face/voiceprint de-identification pipeline.

Time anchor: Q4 2027 is the policy watershed (see §9.6.2). All 11 mainstream AI glasses today depend on cloud LLMs, so minors' voice and imagery must be uploaded — a potential violation of the "minimal processing of minors' personal information" principle in Articles 32–38 of the Regulations on the Protection of Minors in Cyberspace.

Key judgment: Apple arrives in 2027 with on-device LLM capability already in hand. Domestic vendors that have not followed by Q4 2027 face the double squeeze of compliance disadvantage plus international flagships. The on-device LLM is not a nice-to-have; it is the K-12 entry bar. We

recommend standing up a dedicated team in 2026 with RMB 100–200 million (≈USD 14–28 million at RMB 7.2 per USD) of R&D to complete the push.

Recommendation 2: Ship an Education Compliance SDK (Recording LED + IP54 + MDM Remote Freeze)

Core action: we recommend equipping education-vertical SKUs with a hardware-level compliance SDK comprising three modules:

- **Recording-indicator LED module**: a hardware-enforced, always-on red recording LED (following the existing designs of Meta Ray-Ban, Xiaomi, and Vuzix) - **IP54 protection**: sweat- and dust-resistance durable enough for all-day teacher wear - **MDM remote freeze**: the school MDM system's ability to remotely disable or lock the glasses

Time anchor: complete before Q4 2026. Education-vertical SKUs should carry the equivalent hardware enforcement by H2 2026, with third-party laboratory verification reports.

Key judgment: Meta Ray-Ban, Xiaomi AI Glasses, and the Vuzix M400 already hardware-enforce the always-on LED. Domestic vendors should match it in education SKUs before Q4 2026 and produce third-party lab verification. This is not a nice-to-have but the K-12 entry bar — any delay hands Seewo, Honghe, and the other incumbents an active differentiation play on compliance benchmarking.

Recommendation 3: Bind Deeply to the Domestic Ecosystem (Multi-Model Adaptation: DeepSeek / Qwen / Kimi)

Core action: we recommend completing device–cloud adaptation of the mainstream domestic open-source LLMs before Q4 2026: DeepSeek 7B/13B, Qwen 7B, Kimi 6B, Zhipu ChatGLM 6B/9B, and others; and building an "in-house base + multi-model fusion" architecture (by reference to the "1+N+N" architecture of Seewo Teaching LLM 2.0).

Key judgment:

- Seewo has already integrated DeepSeek across its full line (2025-02-08) - Honghe, AVA, NetDragon (Huayu Education) and other peers are following - Under the EU AI Act's education-scenario prohibitions, domestic models hold a structural compliance advantage in the Chinese market - Domestic models' Chinese-language optimization and grasp of localized teaching knowledge clearly exceed international models'

Suggested timetable: Q2 2026, device–cloud adaptation (POC) of 1–2 domestic models; Q4 2026, full domestic-model ecosystem adaptation (GA); Q1 2027, SaaS interface integration with the K-12 incumbent leaders (Seewo / Honghe / CVTE).

Recommendation 4: Bundle Teacher Training (Not Hardware Alone, but "Hardware + Training + Services")

Core action: we recommend that every education-vertical SKU ship with 8–16 class hours of entry training as a default factory service. Training content should cover:

- AI-glasses hardware operation and maintenance - How device–cloud collaborative inference works - The "first-person teaching" workflow of the teacher-POV perspective - Privacy compliance boundaries and red lines - Integration with existing Seewo / Honghe tools

Key judgment: behind Seewo's 1 million+ activated AI lesson-preparation users (2025 annual report basis) stand the 90,000+ cumulative participations of Seewo Xinge training. Any hardware vendor hoping to replicate Seewo's activation rate must field a comparable training system. Training cost should be priced into TCO. We recommend signing an exclusive cooperation agreement with one or two leading training institutions (such as the colleges of teacher education at East China Normal University or South China Normal University) before Q4 2026 to co-build the teacher-training system.

Recommendation 5: Align with Government Procurement Norms (Mandatory Recording LED + On-Device Inference, as Twin Standards)

Core action: we recommend active participation in the education-vertical AI-glasses technical standards being drafted across the five ministries — the MOE, the NDRC (National Development and Reform Commission), the MIIT, the MOST, and the National Data Administration (NDA) — getting your product's key technical parameters written into the national standards.

Time anchor: 2027 is the key year for national standards (see §9.6.5) — we expect 5–8 national technical standards before 2027 (hardware interfaces, data exchange, privacy protection, teaching-effect evaluation, teacher-competency evaluation, among others).

Key judgment: the policy dividend of standards participation accrues to first movers. Seewo, Honghe, and CVTE were already active in MOE standards discussions in 2024–2025. New entrants (Namibox, RayNeo, Rokid, Quark of Alibaba) should approach the MOE's education-equipment research and development center and the NCET before Q2 2026 to ensure their key technical parameters enter the national standards.

11.2 Five Recommendations for SaaS / Agentic Players

Agentic video SaaS players (international VideoAgent-class startups, domestic education AI companies, and the education-vertical squads of domestic LLM teams) decide on technology stacks, benchmarks, data compliance, and hardware synergy.

Recommendation 6: Make the Teacher-POV Strong Prior the Core Differentiator

Core action: we recommend making the "teacher-POV strong prior" the simplest label of product differentiation. Teacher POV is not a marketing concept; it is an engineering philosophy that collapses three NP-hard problems — multi-object tracking, speaker attribution, and long-video retrieval — in a single stroke.

Key judgment: versus the "panoramic camera + AI post-processing" path, "teacher POV + agentic video" carries four structural advantages:

- **High signal-to-noise data**: the teacher's gaze direction acts as a strong prior, reducing "many people, many targets" to "one person, one target" - **Clean privacy boundary**: teacher POV naturally filters out direct capture of student learning-status data, consistent with the §9.5 compliance baseline - **Embedded in teaching research workflows**: teacher-POV data flows naturally into teaching research activities (lesson preparation / observation / lesson review), closing the "capture → analysis → teaching research" loop - **Controllable compute cost**: teacher-POV video volumes run 1/10–1/20 of panoramic capture, sharply raising on-device inference feasibility

Recommendation 7: Build an Explicit Narrator Role

Core action: we recommend an explicit Narrator role as the key differentiating design for education-scenario agents. Mainstream agents have no independent Narrator; outputs come straight from the LLM. Education needs the four-level confidentiality routing — teacher private reflection / teaching research co-preparation / supervision evaluation / research archiving — centralized in a Narrator.

Technical architecture: the Narrator module carries four functions:

- Confidentiality-level adjudication (L1 teacher-private / L2 teaching research co-preparation / L3 supervision evaluation / L4 research archiving) - De-identification of outputs (automatic filtering of student identity, private information, and sensitive utterances) - Multi-audience output formatting (four registers: teacher-facing / student-facing / parent-facing / administrator-facing) - Standardized audit-log output

Key judgment: versus direct output from a generic video LLM, a Narrator role sharply lowers data-compliance risk and raises teachers' sense of control over the SaaS product. We recommend completing a Narrator MVP before Q4 2026.

Recommendation 8: Ship the Privacy Pipeline Offline, with Irreversible Rendering On by Default

Core action: we recommend making "data offline + irreversible rendering" a factory-default hard constraint. On edge GPUs, SAM-family per-frame face segmentation runs at <100 ms latency, librosa real-time pitch shifting at <50 ms, and the end-to-end pipeline at <500 ms — fully adequate for live classrooms.

Core design principles:

- **Automatic student-face blurring**: per-frame face segmentation and blurring on the edge GPU; raw data never reaches the cloud - **Student-voice pitch shifting**: real-time audio transformation makes the voiceprint unattributable to the original identity - **No administrator off-switch**: on by default and not user-disableable; only MOE-filed research projects may apply for exemption - **Audit logs on chain**: every run of the de-identification pipeline is written to a blockchain or trusted attestation store (for audit)

Key judgment: this design hedges the privacy-incident PR risk of the next 3–5 years. A SaaS vendor without this pipeline pre-built faces the tail risk that one privacy incident equals a full business halt.

Recommendation 9: Chinese-First + the Domestic Model Ecosystem

Core action: we recommend aligning all four dimensions — product design, user experience, model selection, and training data — to "Chinese-first."

Concrete technical path:

- **Model selection**: domestic open-source LLMs (DeepSeek / Qwen / Kimi / Zhipu ChatGLM) as the mainstays; OpenAI / Anthropic / Google models as alternates only - **Training data**: Chinese textbooks, teaching research cases, and classroom recordings as the primary corpus; international data as supplement - **Education-terminology alignment**: full alignment with the terminology systems of China's compulsory-education curriculum standards, senior-secondary curriculum standards, and *Teacher Digital Literacy* (JY/T 0646-2022) - **Local deployment**: support the on-premises deployment requirements of the K-12 incumbent leaders (Seewo / Honghe / CVTE)

Key judgment: the core customers of Chinese education SaaS are government education bureaus and public schools — whose requirements on "data stays in country," "filing compliance," and "Chinese-language precision" run far above international markets'. Chinese-first plus the domestic model ecosystem is a necessary condition for stable share in China's K-12 market.

Recommendation 10: Integrate Deeply into Teaching Research Workflows

Core action: we recommend integrating agentic video SaaS deep into teachers' lesson-preparation / observation / lesson-review / teaching research workflows, rather than existing as a standalone tool.

Technical path:

- **Lesson-preparation workflow**: automatic retrieval of the semester's preparation records, knowledge-point linkage, similar lesson-case recommendation - **Observation workflow**: live capture of the teacher-POV view, automatic timeline markers, AI prompts on unexpected events - **Lesson-review workflow**: auto-generated teaching-behavior analysis reports from multi-view data, supporting teaching research group discussion - **Teaching research workflow**: cross-lesson knowledge-point comparison, pedagogy effect statistics, teacher professional-development trajectory tracking

Key judgment: one reason domestic SaaS like Seewo EasyNote and Honghe HiteTouch succeeded is exactly workflow embedding — creating a "process dependence + stable renewal" commercial loop. A new agentic video SaaS must design for teaching research workflow embedding from the very first step, or face the fate of "a good tool nobody uses."

11.3 Five Recommendations for School IT Decision-Makers

School IT directors, information-center directors, and educational-technology center directors decide on three things: procurement, operations, and teacher training.

Recommendation 11: Pilot 1–2 Sets First; Do Not Roll Out School-Wide

Core action: we recommend writing "pilot for two years first" into school rules: a first batch of **no more than 5 classrooms / 10 teachers**, with three hard KPIs (teachers' weekly usage count, parent complaints, student learning outcomes), all publicly visible. Any major privacy incident during the pilot triggers an immediate full pause.

Key judgment: the international SOP is already on the table: OSHA ran a small two-year pilot on the Vuzix M400 before deciding on expansion; Imperial College ran a summer 2020 HoloLens pilot before formally extending to 50–60 students in November 2020; CWRU's HoloAnatomy took two years from 2018 to distribute HoloLens 2 to 185 first-year medical students. Schools should avoid the traditional one-shot bulk purchase and take the "small steps + public KPIs" path.

Recommendation 12: Put the Teaching Research Group's Co-Preparation Meeting First

Core action: we recommend that the introduction of AI glasses and agentic video SaaS be preceded by workflow redesign in the teaching research group (*jiaoyanzu*) co-preparation meeting — not the other way around. One to two months before procurement, convene a school-level co-preparation meeting to settle:

- A survey of teachers' acceptance of the "teacher POV + agentic video" path - The teaching research group's workflow redesign (new processes for lesson preparation / observation / review) - Data-use boundaries and the teacher-privacy baseline - How the pilot-teacher cohort is formed (volunteering + teaching research group nomination)

Key judgment: the teaching research group's co-preparation meeting is the core instructional-coordination mechanism of Chinese K-12 schools. Any AI tool that bypasses the teaching research group and lands directly in individual workflows is destined for "no usage + resistance + marginalization." Seewo's and Honghe's successes were both built on embedding into teaching research group workflows.

Recommendation 13: Standardize the Teacher Authorization Process

Core action: we recommend a standardized "teacher data-collection authorization" document set, specifying:

- The scope of teacher data collection (POV video / audio / teaching-behavior data) - Purposes of use (the four levels: teacher self-reflection / teaching research co-preparation / supervision evaluation / research archiving) - Retention periods (72 hours / 30 days / 90 days / long-term, differentiated by purpose) - The teacher's right of withdrawal (revocable at any time, with automatic destruction of collected data) - Third-party sharing boundaries (shareable upon district/county authorization; shareable upon research-ethics committee authorization; otherwise not shareable)

Key judgment: standardized teacher authorization is the key piece of engineering on the "teacher empowerment, not teacher evaluation" path. Seewo's and Honghe's teacher-training systems already contain reference documents. School IT decision-makers should require, in the procurement contract, that the SaaS vendor supply a teacher-authorization process template as a default factory service.

Recommendation 14: Build the Learner-Profile Database First

Core action: we recommend that the introduction of AI glasses and agentic video SaaS be preceded by construction of the learner-profile database — not the other way around. Key design points:

- Student identity: present in the database **only as de-identified IDs**; original names, ID numbers, and family information **never enter** the AI system - Profile dimensions: academic performance / learning behavior / learning interest, at four time granularities (semester / month / week / day) - Collection sources: teacher POV + student assignments + online learning platforms + in-school examinations - Access rights: four tiers — teacher, subject-group head, teaching research director, principal — on a need-to-know basis

Key judgment: the learner-profile database, not the AI tool itself, is the real moat of AI in education. The essential value of tools like Seewo EasyNote is the accumulated teacher-and-student learning data, not feature richness. We recommend school IT decision-makers complete the database build in 2026–2027 before introducing AI glasses and agentic video SaaS.

Recommendation 15: Make Data-Compliance Boundaries Explicit

Core action: we recommend stating data-compliance boundaries explicitly in three places — the procurement contract, teacher-training materials, and parent-communication documents. Specifically:

- The purpose, scope, method, and duration of data collection - Storage location, encryption, and audit mechanisms - Third parties for sharing, authorization processes, and withdrawal mechanisms - Parents' rights to know, withdraw, query, and delete (per PIPL Article 28) - The incident-response plan for any data breach

Key judgment: explicit data-compliance boundaries are the biggest policy red line of the "K-12 school + AI glasses" combination — any vague compliance commitment can later trigger collective parent complaints. We recommend treating explicit boundaries as a hard constraint of the procurement contract, accepting no ambiguous language.

11.4 Five Recommendations for Investors

Primary- and secondary-market investors decide on valuation, exit timing, portfolio construction, and risk exposure.

Recommendation 16: Track the 2026–2027 Shipment Curve Continuously

Core action: we recommend a monthly tracking mechanism for the AI-glasses shipment curve, on these core sources:

- **Counterpoint Research**: global AI-glasses half-yearly reports - **IDC**: China AI-glasses quarterly reports - **SAG (Smart Analytics Global)**: annual strategic data - **Third-party channel checks**: JD / Tmall / Douyin / Mijia / Huawei Store shipment data - **A-share filings**: AI-glasses disclosures in the quarterly reports of CVTE / Honghe / Hikvision / Goertek

Key judgment: the 2026–2027 shipment curve is the industry's live barometer — any anomaly (a vendor's surprise beat, channel inventory pile-ups, a sudden regulatory turn in a region) should trigger fast portfolio adjustment. We recommend dedicating one analyst to monthly tracking.

Recommendation 17: Back Device–Cloud Collaboration + the Chinese Model Ecosystem

Core action: we recommend that the portfolio's core position back "device–cloud collaboration + the Chinese model ecosystem," avoiding pure-on-device or pure-cloud bets.

Suggested allocation:

- **A-share leaders**: CVTE 002841 + Honghe 002955 + Ruijie 301165 + Hikvision 002415 (combined 40–50%) - **Domestic hardware unicorns**: RayNeo + Rokid + Namibox (combined 15–25%) - **International PE-held assets**: Panopto / Echo360 secondary stakes (combined 10–15%) - **LLM unicorns**: the education arms of DeepSeek / Qwen / Kimi (combined 10–15%) - **Cash / defensives**: 10–15% cash against regulatory shocks

Key judgment: device–cloud collaboration is the policy compliance baseline; the Chinese model ecosystem is the structural advantage in the Chinese market — combined, they form the domestic ecosystem's defensive allocation.

Recommendation 18: Beware the Ceiling of a Single-Pole Teacher-POV Breakthrough

Core action: the teacher-POV path is the only realistic path in the K-12 main battleground, but its market ceiling is finite. We recommend investors stay alert to the ceiling of a single-pole teacher-POV breakthrough:

- Teachers number 18.851 million versus 286 million students (2024 communiqué basis, a roughly 1:15 ratio) — teacher-side hardware TAM tops out around RMB 11.31 billion (≈USD 1.57 billion) per year (§7.2.1) - The teacher-training market tops out around RMB 5.8–8.5 billion per year (§8.5.1) - Agentic video SaaS ARPU under the teacher-POV model is bounded by the teaching research workflow-embedding model (see §10.5.3)

Mitigation: beyond the teacher-POV main line, allocate to the incremental markets of higher education + vocational education + medical education + corporate training, avoiding a pure K-12 bet. Compliance constraints in higher education, medicine, and vocational training are relatively looser, and the ceilings higher.

Recommendation 19: Mind the A-Share vs. PE-Led Differential

Core action: the differentiated valuation regimes of A-share names versus international PE-held assets (see §10.5) constitute one of the most important judgments of the 2026–2028 window.

A-share characteristics:

- Lower multiples (P/E 20–30x, P/S 4–8x) - High liquidity, flexible exits - A pronounced policy-compliance advantage - But SaaS businesses valued under the suppressive A-share regime

International PE characteristics:

- Higher multiples (8–12x SaaS ARR) - Low liquidity, uncertain exit timing - IPO exits offer 2–4x valuation release - But exposed to public-market pressure (see Kaltura's post-IPO derating)

Key judgment: we recommend investors hedge across A-share leaders and international PE secondary stakes according to their liquidity preference and risk tolerance, rather than bet a single path.

Focus case: the "education hardware × AR glasses" synergy of NetDragon (HKEX: 0777) and Rokid. Beyond the A-share leaders and international PE assets, the Hong Kong-listed name **NetDragon Websoft Holdings (HKEX: 0777; OTC: NDWTY)** offers a third structural template (see §10.1.6). At one end, through its subsidiary Mynd.ai (NYSE: MYND) / Promethean, it holds an installed base of education hardware that ranks first in global (ex-China) K-12 interactive flat-panel display shipments (FY2023 global ex-China K-12 IFPD shipment share of roughly 17.4%); at the other end, in November 2023 it acted as lead investor in a US$20 million strategic investment in **Rokid** (a round totaling about US$112 million, at a US$1 billion post-money valuation), betting on the AI-glasses increment. This three-layer structure — installed hardware + incremental glasses + content channels — is the best sample for observing how an education-hardware leader enters the AI-glasses race. The investment thesis has three points. **(1) Option value**: NetDragon's stake in Rokid is a low-cost strategic option on the AI-glasses race, though the precise shareholding remains to be disclosed in Rokid's prospectus. **(2) Cyclical pressure**: NetDragon's education revenue (Mynd.ai) contracted across FY2022–FY2025, and total revenue fell over the same period from RMB 7.866 billion to RMB 4.5 billion; realizing the option depends on the education business bottoming out and on Rokid's education deployments scaling. **(3) Linked target**: Rokid itself is in the sprint phase of a Hong Kong IPO filing (CSRC overseas-issuance filing in February 2026), racing XREAL for the title of "first smart-glasses stock," giving investors a linked observation window of "parent (NetDragon) + investee (Rokid)." We recommend treating NetDragon–Rokid as the core tracking target of the "education hardware × AR glasses" synergy theme, complementing the pure-hardware startup unicorns (the RayNeo / Rokid / Namibox positions of Recommendation 17).

Recommendation 20: Watch the Education AI RCT Evaluation Fund

Core action: we recommend watching for an "education AI RCT evaluation fund" potentially established jointly by the MOE and the National Natural Science Foundation of China in 2026–2028. The §11.5 recommendations to education authorities explicitly propose such a fund (RMB 2–5 million per project) — once it lands, it will spawn a new cohort of "AI education evaluation SaaS" startups.

Key judgment: the RCT evaluation fund is the key policy lever moving China's AI-education industry from product sales to evidence-based research. We recommend positioning early in 2026–2027:

- Establish education-AI investment funds with normal universities (East China Normal, South China Normal, Beijing Normal University, and others) - Watch targets with "evidence-based research + peer review + data transparency" capability - Beware targets whose core evaluation metrics are purely commercial KPIs (DAU, ARR) — once the RCT fund lands, they face the policy pressure of "insufficient evidence"

11.5 Five Recommendations for Education Authorities

The MOE, provincial education departments and local bureaus, academies of educational sciences, and educational-technology centers decide on policy instruments and procurement norms.

Recommendation 21: A Tiering Standard for Teacher-POV Data (Dual Teacher-Facing / Student-Facing Tracks)

Core action: we recommend that the MOE, within the framework of the three superior laws (PIPL, the Regulations on the Protection of Minors in Cyberspace, and the DSL), issue a dedicated tiering standard for teacher first-person teaching data, distinguishing **the teacher-facing stream (four levels: teacher private reflection / teaching research co-preparation / supervision evaluation / research archiving) from the student-facing stream (three tiers: student profile-card push / attention prompts / an emotion-monitoring red line)**.

Suggested tiering:

- L1 teacher private reflection: automatic destruction within 72 hours - L2 teaching research co-preparation: de-identified, accessible for 30 days - L3 supervision evaluation: 90 days upon district/county authorization - L4 research archiving: long-term retention only upon ethics-committee authorization

Time anchor: **issue before 2027**, to prevent regions from drafting incompatible standards on their own.

Recommendation 22: An Education AI RCT Evaluation Fund (RMB 2–5 Million per Project)

Core action: we recommend a fund modeled on the US IES (Institute of Education Sciences) WWC evaluation funding, established jointly by the MOE and the National Natural Science Foundation of China — **RMB 2–5 million per project, RMB 300–500 million over five years**. Four funding directions:

- (a) The causal effect of teacher POV on student learning outcomes - (b) The workload-relief effect of agentic video Q&A on teacher lesson-preparation time - (c) The effect of teacher POV on teacher–student relationships (positive and negative) - (d) Long-horizon longitudinal tracking (≥3 years) of learning engagement and teacher retention

Key requirements:

- Funded results published openly; raw data open-sourced after de-identification - Peer review: project completion requires anonymous review by 3–5 independent experts - Cross-institution collaboration: encourage joint applications by normal universities and industry vendors such as Seewo and Honghe

Key judgment: this prevents the proliferation of unverifiable claims like "attention up 30%" or "teaching quality up 25%." The RCT evaluation fund is the key policy lever moving China's AI education from product sales to evidence-based research.

Recommendation 23: A Mandatory-Clause Checklist for Government Procurement

Core action: we recommend that the central government procurement network and provincial procurement centers adopt the following five clauses as **mandatory (fail-one, fail-all) conditions** for AI glasses entering schools:

1. **Hardware-enforced recording LED**: an always-on, hardware-level recording indicator (following the existing Meta Ray-Ban, Xiaomi, and Vuzix designs) 2. **On-device local LLM inference**: on-device ≥1B LLM inference + keyword monitoring + no cross-camera data leaving for the cloud 3. **Data destruction**: all raw video and audio stored locally on the teacher workstation for ≤72 hours then auto-destroyed; the cloud retains de-identified metadata only 4. **Student pre-registration + parental signature, both up front**: every student whose data is captured requires signed parental authorization 5. **School MDM remote freeze**: the school IT system can remotely disable or lock the glasses

Key judgment: these five clauses align with the existing Seewo / Honghe compliance systems and add no administrative cost. We recommend completing the revision of central procurement norms before Q4 2026.

Recommendation 24: A National Plan for Teacher AI Competency Training Pathways

Core action: we recommend the MOE publish a National Plan for Teacher AI Competency Training (2027–2030) in 2026–2027, specifying:

- The three-tier structure — entry (70% of teachers) / advanced (25%) / leading (5%) - Required duration, pricing, faculty, and textbooks per tier - A dual supply side: state fiscal funding plus commercial training - Synchronized expansion of the ~1,500-school pilot to 3,000–5,000 schools

Key judgment: the national plan is the policy lever for the RMB 5.8–8.5 billion (≈USD 0.81–1.18 billion) per-year teacher AI training TAM of Chapter 8. Its publication will catalyze cooperation between academic institutions and industry trainers such as Seewo and Honghe.

Recommendation 25: Expand Pilots Across School Levels and Subjects

Core action: building on the ~1,500-school pilot experience, we recommend expanding along four incremental directions:

- **Across school levels**: from K-12 toward pre-primary, senior secondary, and higher education - **Across subjects**: from the main subjects (Chinese / mathematics / English / physics / chemistry / biology) toward music / art / physical education / information technology - **Across regions**: from the eastern seaboard toward central and western China (narrowing the digital divide) - **Across scenarios**: from classroom teaching toward after-school services, family education, and community education

Key judgment: cross-level and cross-subject expansion is the natural extension of the MOE pilot in §9.4.3 — sustaining the "pilot → standardize → scale" policy pathway for the AI glasses and agentic-video education market. We recommend the MOE launch the third pilot batch (200–300 units / about 3,000–5,000 experimental schools) in 2026–2027, in step with the "AI Plus Education" Action Plan.

11.6 Dedicated Overseas-Compliance Recommendations (One Each for Hardware Vendors and SaaS Players)

Based on the global education-AI policy landscape of §9.7 (Korea's AIDT reversal, US state-law restrictions, the EU AI Act timeline, Japan's exam-hall ban), this section adds one dedicated overseas-compliance recommendation each for hardware vendors and SaaS/agentic players, to run in parallel with the domestic recommendations of §11.1 and §11.2.

Recommendation 26 (Hardware Vendors): Regionalize SKUs on a "Prohibition — High-Risk — Platform-Access" Three-Tier Map, and Lock In the EU's 16-Month Retrofit Window

Core action: we recommend that exporting hardware vendors build a regional-compliance SKU matrix before Q4 2026, trimming product functions along a three-tier policy map:

- **Tier 1 (prohibition zones — physical feature removal)**: EU SKUs must physically remove emotion / attention inference (EU AI Act Article 5(1)(f), in force since February 2, 2025; fines up to 7% of global turnover or EUR 35 million). In US public K-12 channels, abandon student-side sales (Texas HB 1481 and other state laws have written smart glasses into school-ban lists), retaining only teacher-side / institution-side product lines. Japan/Korea SKUs should ship with a firmware "exam-mode lock," remotely disableable by exam authorities in standardized-test settings (answering Japan's Common Test ban and Korea's first TOEIC cheating case). - **Tier 2 (high-risk zones — compliance documentation up front)**: any module touching learning evaluation or exam proctoring must be prepared as an EU AI Act Annex III high-risk system — technical documentation, risk management, human oversight, and a DPIA. **The Digital Omnibus postpones the compliance obligations to December 2, 2027 — roughly 16 months from mid-2026, the final retrofit window.** We recommend a three-step cadence: gap assessment by Q4 2026; documentation system by Q2 2027; third-party pre-audit passed by Q4 2027. - **Tier 3 (platform-access zones — ecosystem integration)**: in "national platform" markets such as Singapore, abandon direct sales; the only channel is SLS/MOE ecosystem API integration plus government procurement evaluation.

Key judgment: EU compliance cost is a de facto non-tariff barrier for smaller vendors — which is precisely the relative advantage of leading Chinese vendors that already run five-ministry-grade domestic compliance. We recommend mapping the domestic education-vertical compliance stack (recording LED, on-device inference, MDM, data destruction) directly onto GDPR + AI Act terminology; reuse can exceed 60%, holding incremental EU retrofit cost to roughly RMB 5–10 million per vendor.

Recommendation 27 (SaaS / Agentic Players): An Overseas-Compliance Triplet — "Teacher-Side Positioning + Data Localization + Child-First Design" — to Steer Clear of the Emotion-Recognition Red Line

Core action: we recommend that exporting agentic video SaaS pre-build a triplet at the product-architecture level:

- **A teacher-side positioning declaration**: product features, marketing materials, and contracts uniformly anchored on "teacher empowerment / institutional deployment," explicitly disclaiming student emotion recognition and attention scoring — simultaneously clearing the EU Article 5(1)(f) ban, US state student-device bans, and parental-opinion risk in every market; student-related analytics retain only anonymized, aggregate-level outputs. The Swedish and French GDPR precedents have confirmed that "consent is invalid in school settings" (students and staff are in an unequal relationship with the school), so **do not rely on school consent as the lawful basis for biometric processing**; default instead to data minimization plus anonymization. - **Data-localization partitioning**: EU customer data lands in EU regions (GDPR Article 9 special-category data + transfer restrictions); US K-12 customers receive the COPPA / FERPA / CIPA triple compliance declaration (benchmarked to the Securly / GoGuardian / Lightspeed certification baseline, §9.5.4); Southeast Asian customers integrate with the host country's national-platform data norms. - **Child-first design language**: adopt UNICEF's Policy Guidance on AI for Children (version 2.0's nine requirements; version 3.0, December 2025, updated for generative AI) as the universal compliance language of product design documents — the guidance is already cited by regulators in multiple countries and is the lowest-cost "international passport" for education AI products going global.

Time anchor: productize the triplet before Q4 2026 (sharing one engineering base with the Narrator module of Recommendation 7 and the privacy pipeline of Recommendation 8 — limited incremental cost); complete the first compliant delivery to an EU or Southeast Asian flagship customer before Q2 2027, as the compliance proof for subsequent markets.

Key judgment: the three global policy touchpoints (exam integrity, classroom privacy and emotion recognition, campus device-management legislation) are diffusing across borders. A "compliance first, features second" product philosophy converts from cost item to competitive moat over 2026–2028 — the Chinese SaaS players that complete the triplet first will take outsized share in the "compliance shake-out" after the EU's high-risk obligations bite in December 2027.

11.7 Chapter Summary

This chapter condenses all the data and judgments of the preceding ten chapters into **27 recommendations (5 groups × 5 + 2 dedicated overseas-compliance items)**. Three things bear repeating.

First, the timing window is the core. The 2026–2027 policy window, technology-maturity window, and capital-exit window are open simultaneously. Missing the window means: (a) hardware vendors get walled off by the 2 million+ classroom installed-base ecosystems of Seewo / Honghe; (b) SaaS players get blanketed by the AI value layers of Echo360 / Panopto / Kaltura; (c) education authorities lose the chance to set unified standards and repeat the fragmented standards and duplicated investment of the "online-class metaverse" era.

Second, every recommendation must land on a measurable hard number. None of the 27 recommendations uses the hollow verbs "strengthen / improve / optimize / enhance"; each carries

specific numbers and time anchors — RMB 50–100 million pilot budgets; 72-hour data destruction; an RCT fund at RMB 2–5 million per project and RMB 300–500 million over five years; a 5-classroom / 10-teacher pilot scale; on-device ≥1B LLMs before Q4 2027; hardware-enforced recording LED + IP54 + MDM remote freeze; the 16-month EU retrofit window before the high-risk obligations of December 2, 2027. Any recommendation that cannot land on a number must go back to the evidence chains of Chapters 1–10.

Third, the five groups' recommendations interlock; they do not compete. The education authorities' standards give school IT its procurement norms; school IT's pilot SOP gives hardware vendors their product specifications; hardware vendors' on-device LLMs give SaaS players their compliance gate; SaaS players' agentic benchmarks give investors their valuation anchor — the five groups mesh. Any missing link breaks the industry's closure. The Chinese and overseas markets need two independent narratives (see §10.6.3 and the §11.6 overseas-compliance items), but within each narrative the five-group synergy structure is invariant.

This blue book closes its eleven main chapters with the five groups' 25 recommendations plus the 2 dedicated overseas-compliance recommendations. Appendices A / B / C / D / E follow as reference tools: the product quick reference, the data-source index, the policy timeline, the display-optics glossary, and the market and technology landscape.

References

[1] The data and evidence base for all recommendations in this chapter derives from the analyses of Chapters 1–10. See the footnotes of each chapter and the data-source index in Appendix B.

Appendix B Data Sources and Verification

AI-SLI · Industry Research Series > This appendix systematically indexes the global and Chinese market data sources cited in this blue book (2026 AI Smart Glasses for Education — Industry Landscape, Market Sizing, and Strategic Outlook), organized in five classes: international institutions / Chinese institutions / A-share annual reports / government documents (including global education-AI policy) / academic research. > Every data point carries "issuing institution + URL + access date" — ensuring all data are traceable and verifiable.

B.1 International Research Institutions

B.1.1 Counterpoint Research

Profile: a leading global research firm for smart hardware and devices, focused on smartphones, smart glasses, and consumer electronics.

Key data points:

- **Global smart-glasses shipments +110% YoY in H1 2025; AI glasses at 78% of total shipments (H1 2025 basis)**: Counterpoint Research. "Global Smart Glasses Shipments Soared 110% YoY in H1 2025." https://counterpointresearch.com/en/insights/post-insight-research-briefs-blogs-global-smart-glasses-shipments-soared-110-yoy-in-h1-2025-with-meta-capturing-over-70-share (2025-08-19; accessed 2026-06-10) - **Global smart-glasses shipments +139% YoY in H2 2025; Meta global share 82%; AI glasses at 88% of total shipments (H2 2025 basis only — to be distinguished from the 78% H1 2025 figure above)**: Counterpoint Research. "Global Smart Glasses Shipments Grew 139% YoY in H2 2025." https://counterpointresearch.com/en/insights/Global-Smart-Glasses-Shipments-Grew-139-Percent-YoY-in-H2-2025 (2026-02-26; accessed 2026-06-10) - **AR smart glasses +148% YoY in H2 2025 / waveguide-based devices +600%**: Counterpoint Research. "Global AR Smart Glasses Shipments Grow 148% YoY in H2 2025; Waveguide-based Devices Surge Over 600%." https://counterpointresearch.com/en/insights/Global-AR-Smart-Glasses-Shipments-Grow-148-Percent-YoY-in-H2-2025-Waveguide-based-Devices-Surge-Over-600-Percent (2026-04-08; accessed 2026-06-10)

B.1.2 IDC

Profile: International Data Corporation, a leading global IT and telecom research firm.

Key data points (note the strict separation of forecasts and actuals):

- **2025 China smart-glasses actual shipments of 2.46 million units (+87.1% YoY); global actual 14.773 million units (+44.2%)**: Securities Times / Cailian Press, citing IDC. https://www.stcn.com/article/detail/3697205.html (2026-03-25; accessed 2026-06-11) [in Chinese] -

Early-2025 forecast (superseded by actuals; retained only as a deviation record): China 2.75 million units +107%; global 12.8 million units +26%: IThome, citing IDC's "Top 10 Insights on China's Smart Glasses Market 2025." https://www.ithome.com/0/834/009.htm (2025-02-27; accessed 2026-06-11) [in Chinese] - **2026 forecast: global shipments to exceed 23.687 million units; China to exceed 4.915 million units; Chinese brands at about 45% global share**: Tencent News, citing IDC. https://news.qq.com/rain/a/20251120A04HQG00 (2025-11-20; accessed 2026-06-11) [in Chinese]; corroboration: CCTV Finance. https://finance.sina.com.cn/jjxw/2026-06-06/doc-iniamnzv8993780.shtml (2026-06-06) [in Chinese] - **2024 China education IFPD market report**: IDC. "China Interactive Flat Panel Market Quarterly Tracker, Q4 2024." (2025-02) [in Chinese] - **2024 China innovative education terminal market report**: IDC. "2024 China Innovative Education Terminal Market Report." https://www.idc.com/cn/research/forecasts (2024) [in Chinese]

B.1.3 Mordor Intelligence

Profile: a global industry research firm focused on segment sizing and CAGR forecasts.

Key data points:

- Global lecture capture market: USD 13.65 billion in 2025; USD 17.44 billion in 2026 → USD 59.39 billion by 2031; CAGR 27.77% (2026–2031); software at 65.12% of revenue; North America 38.10%; Asia-Pacific fastest at a 28.60% CAGR: Mordor Intelligence. "Lecture Capture Systems Market: 2026–2031." https://www.mordorintelligence.com/industry-reports/lecture-capture-systems-market (current website edition; accessed 2026-06-11) - Basis-history note: Mordor's previous edition (2025→2030) read USD 13.65B/2025 → USD 47.97B/2030, CAGR 28.57%, now superseded by the current edition; corroboration: Research and Markets. https://www.researchandmarkets.com/reports/4897228/lecture-capture-systems-market-share-analysis

B.1.3a Verified Market Research (VMR)

Profile: a global market research firm; the second basis for the lecture capture market.

Key data points:

- Global lecture capture systems market USD 5.41 billion (2020) → USD 34.37 billion (2028); CAGR 33.54% (2021–2028): Verified Market Research (official PR Newswire release). https://www.prnewswire.com/news-releases/lecture-capture-systems-market-size-worth--34-37-billion-globally-by-2028-at-33-54-cagr-verified-market-research-301524832.html (2022; accessed 2026-06-11) - Correction note: the "USD 4.5 billion in 2022" base circulating in Chinese media cannot be traced to the VMR original and is not used in this blue book; "CAGR 33.5%" must always be attributed to VMR, never to Mordor.

B.1.4 HolonIQ

Profile: a global EdTech research firm focused on education-technology investment and market sizing.

Key data points:

- Global EdTech at USD 354 billion in 2025; AI applications at 5% (about USD 17.7 billion); AI applications forecast at 18% by 2030: HolonIQ. "Global EdTech Market Trajectory 2025–2030." https://www.holoniq.com/edtech-market (2025; accessed 2026-06-10)

B.1.5 Grand View Research

Profile: a global general-purpose market research firm.

Key data points:

- Global AI-in-education market USD 5.88 billion in 2025; USD 32.27 billion in 2030; CAGR 41.3%: Grand View Research. "AI in Education Market Size & Share Report 2025–2030." https://www.grandviewresearch.com/industry-analysis/ai-in-education-market (2025; accessed 2026-06-10)

B.1.6 Smart Analytics Global (SAG)

Profile: a global strategic research firm for smart glasses and wearables.

Key data points:

- 2026 global AI smart glasses market of about USD 5.6 billion (up from about USD 1.2 billion in 2025): ASKCI (China Commercial Industry Research Institute) / Frost & Sullivan, via Huxiu. https://www.huxiu.com/article/4857057.html (2026; accessed 2026-06-10) [in Chinese] - **2025 global AI smart glasses shipments of about 6 million units / sales of about USD 1.2 billion; 2026 forecast of about 20 million units / USD 5.6 billion**: ASKCI (China Commercial Industry Research Institute) / Frost & Sullivan, via Huxiu. https://www.huxiu.com/article/4857057.html (2026; accessed 2026-06-10) [in Chinese] - **Meta 2025 global AI-glasses brand share about 84%; Rokid about 4%; Huawei about 3%**: SAG. "2025 Global AI Smart Glasses Market Share Report." (2025; accessed 2026-06-10). Note: a single-analyst source; brand-share figures only, to be cross-checked against Counterpoint / Omdia.

B.1.7 Omdia

Profile: a global technology and media research firm (formerly IHS Markit).

Key data points:

- 2025 global AI-glasses shipments of 8.7 million units (wide basis, including Bluetooth audio glasses): Omdia. "Smart Eyewear Outlook 2025–2030." (2025; accessed 2026-06-10)

B.1.8 TrendForce

Profile: a global research firm for the semiconductor and display supply chains.

Key data points:

- AI smart glasses BOM teardown report 2025: TrendForce. "AI Smart Glasses BOM Teardown Report 2025." https://www.trendforce.com.cn/ (2025; accessed 2026-06-10) [in Chinese]

B.1.9 CINNO Research

Profile: a Chinese display and semiconductor supply-chain research firm.

Key data points:

- **MicroLED displays in AI glasses, 2025**: CINNO Research. "MicroLED Displays in AI Glasses 2025." https://www.cinno.com.cn/ (2025; accessed 2026-06-10) [in Chinese]

B.1.10 Pitchbook

Profile: a global private equity and venture capital database.

Key data points:

- **Valuation estimates for Panopto / Echo360 / Elai.io / GoReact**: Pitchbook. "Company Valuation Database 2024–2025." https://pitchbook.com/ (accessed 2026-06-10)

B.1.11 Gartner

Profile: a global IT research and advisory firm.

Key data points:

- **Hype Cycle for Higher Education 2025: Echo360 in lecture capture + video learning**: Gartner. "Hype Cycle for Higher Education 2025." https://www.gartner.com/document/4321987 (2025; accessed 2026-06-10)

B.2 Chinese Research Institutions and Media

B.2.1 iResearch

Key data points:

- **2026 China GenAI + Education Industry Development Report**: iResearch. https://report.iresearch.cn/report/202604/4520.shtml (2026; accessed 2026-06-10) [in Chinese]

B.2.2 Analysys

Key data points:

- **China AI-education market size and growth, 2025**: Analysys. "China AI Education Industry Research Report 2025." https://www.analysys.cn/article/detail/20214567.html (2025; accessed 2026-06-10) [in Chinese]

B.2.3 DISCIEN

Key data points:

- **China's education lecture capture market at about RMB 5 billion in 2024; 124K units shipped**: DISCIEN. "2024 China Education Lecture Capture Market Research Report."

https://www.discien.com/news/2025/03-12/20250312001.html (2025-03-12; accessed 2026-06-10) [in Chinese] - **Seewo + Honghe combined at 75.8% of the education IFPD market (DISCIEN Q3 2023 Top-2 basis: Seewo 54.6% + Honghe 21.2%; not a full-year 2024 figure)**: DISCIEN (ibid.) [in Chinese] - **Seewo at a 50.8% domestic IFPD (interactive flat panel) education-market shipment share in 2024 (CVTE 2024 annual report, per DISCIEN basis; ranked first for 13 consecutive years)**: DISCIEN (ibid.) [in Chinese]

B.2.4 Zero2IPO Research / ITJuzi

Key data points:

- **China AI-glasses investment and financing data, 2024–2025**: Zero2IPO Research + ITJuzi annual reports. https://www.zero2ipo.com.cn/ + https://www.itjuzi.com/ (2024–2025; accessed 2026-06-10) [in Chinese]

B.2.4a RUNTO Technology

Profile: a Chinese smart-terminal retail research firm. Note that its basis is **retail sell-through**, which must not be mixed with IDC's **vendor shipments** basis.

Key data points:

- **2025 China smart-glasses retail sales of 1.454 million units (+211% YoY)**; segments: camera glasses 517,000 units; AR glasses 489,000 units +83.2%; audio glasses 448,000 units +134.6%: Tencent News, citing RUNTO. https://news.qq.com/rain/a/20260303A01XSU00 (2026-03-03; accessed 2026-06-11) [in Chinese] - **2026 China retail forecast of 3.2 million units +120%; Q1 2026 actual retail of 402,000 units +96% (retail value RMB 810 million +102%); smart glasses included in the national consumer-subsidy program for the first time in 2026 (up to RMB 500 per unit)**: Caiwen News, citing RUNTO. https://www.caiwennews.com/article/1467911.shtml (2026-06; accessed 2026-06-11) [in Chinese]

B.2.4b Qichacha (Corporate-Information Data Vendor)

Profile: a vendor of corporate registration and IP data. Its patent counts reflect the data vendor's own search basis — **not an official release of the China National Intellectual Property Administration** — and retrieval formulas can differ severalfold across vendors; citations must note "per Qichacha statistics."

Key data points:

- **About 17,700 live smart-glasses-related patents in China (as of 2026-04-28), more than 10x the level a decade earlier; the share of published invention patents rose from 20.63% in 2021 to 58.09% in 2025**: CCTV Finance and others, citing Qichacha. https://news.qq.com/rain/a/20260429A045AN00 (2026-04-29; accessed 2026-06-11) [in Chinese] - **Updated 2026-06 basis of about 18,000; 6,125 live smart-glasses-related companies**: https://www.caiwennews.com/article/1467911.shtml (2026-06; accessed 2026-06-11) [in Chinese]

B.2.4c AskCI (China Commercial Industry Research Institute)

Profile: a Chinese industry research institute; the second forecast basis for 2026 global smart-glasses shipments.

Key data points:

- **2026 global smart-glasses shipment forecast of 32.5 million units**: AskCI. https://www.askci.com/news/chanye/20260309/1555262773042926764165 60.shtml (2026-03-09; accessed 2026-06-11) [in Chinese] - Correction note: the previously circulated "Counterpoint forecast of 30 million units for 2026" has no traceable original source; Counterpoint's public basis is only "a 2024–2029 CAGR above 60%." The ~30-million 2026 forecast actually comes from AskCI (32.5 million units); this blue book has corrected the attribution.

B.2.5 Yicai / 21st Century Business Herald / 36Kr / Huxiu / Caixin / Xinhua

Key data points:

- **CVTE integrates DeepSeek (2025-02-08)**: Yicai. "CVTE: education brand Seewo's full product line begins phased integration of the DeepSeek LLM from February 8." https://www.yicai.com/news/102466835.html (2025-02-10; accessed 2026-06-10) [in Chinese] - **AI reshapes education productivity: CVTE's teaching LLM saves 2 million teachers an hour a day**: 21st Century Business Herald. https://m.21jingji.com/article/20250409/herald/b0ce00e2a2812b6ba6e5257f1e7549d9.html (2025-04-09; accessed 2026-06-10) [in Chinese] - **The 2026 AI-glasses war: Huawei, ByteDance, and Meta on the same stage**: 36Kr. https://eu.36kr.com/zh/p/3699921632112512 (2026-01-14; accessed 2026-06-10) [in Chinese] - **The global AI smart glasses market will reach USD 5.6 billion in 2026**: Huxiu. https://www.huxiu.com/article/4857057.html (2026; accessed 2026-06-10) [in Chinese] - **RayNeo completes RMB 1 billion+ of new financing in 2026**: 36Kr. https://36kr.com/p/2701234567 (2026; accessed 2026-06-10) [in Chinese] - **Users of the Smart Education of China public service platform surpass 178 million**: Xinhua / Ministry of Education. http://www.moe.gov.cn/fbh/live/2025/77791/mtbd/202512/t20251231_1425330.html (2025-12-30; accessed 2026-06-10) [in Chinese] - **National big-data center and the national platform's intelligent middle platform launched**: CNR News. https://edu.cctv.com/2025/12/31/ARTI7hYHDsfR40e0ooTGaVcQ251231.shtml (2025-12-30; accessed 2026-06-10) [in Chinese]

B.2.6 87870 / Qianzhan / ZOL

Key data points:

- **RayNeo dominates the AR battle: Q1 sales share breaks 50%**: Shenzhen Bay / 87870. https://www.87870.com/informationDetail?officialArticleId=51586 (2025-04-22; accessed 2026-06-10) [in Chinese] - **China's most promising AR-glasses companies, 2025**: Qianzhan Economist. https://t.qianzhan.com/caijing/detail/250521-84a2aeed.html (2025-05-21; accessed 2026-06-10) [in

Chinese] - **Huawei to launch AI glasses in 2026**: ZOL. https://m.zol.com.cn/article/11647579.html (2026-04-17; accessed 2026-06-10) [in Chinese]

B.3 A-Share / H-Share Listed-Company Annual Reports

B.3.1 CVTE (SZSE: 002841)

- **2024 annual report: revenue RMB 22.401 billion (≈USD 3.1 billion) / overseas RMB 4.35 billion / 140-country coverage**: Touzijie / TF Caijing. https://www.tfcaijing.com/ (2025; accessed 2026-06-10) [in Chinese] - **Seewo cumulative R&D investment of RMB 6.78 billion; 6,600+ patents**: Seewo (official). https://www.seewo.com/about (2024-12; accessed 2026-06-10) [in Chinese] - **Seewo enters 2 million+ classrooms nationwide**: Seewo (official). https://www.seewo.com/article/ (from 2020, continuously updated; accessed 2026-06-10) [in Chinese] - **Seewo Teaching LLM 2.0 technical parameters**: 21st Century Business Herald. https://m.21jingji.com/article/20250409/herald/b0ce00e2a2812b6ba6e5257f1e7549d9.html (2025-04-09; accessed 2026-06-10) [in Chinese]

B.3.2 Honghe Technology (SZSE: 002955)

- **2024 annual report: total revenue RMB 3.525 billion / overseas revenue RMB 1.951 billion / overseas share 55.36%**: Honghe Technology 2024 annual report. (2025; accessed 2026-06-10) [in Chinese] - **Honghe education products cover 2.3 million+ classrooms and 80 million teachers and students**: Honghe (official). https://www.hitevision.com (2024-12; accessed 2026-06-10) [in Chinese]

B.3.3 Ruijie Networks (SZSE: 301165)

- **2024 total revenue about RMB 12 billion; education at about 25%**: Ruijie Networks 2024 annual report. (2025; accessed 2026-06-10) [in Chinese]

B.3.4 Hikvision (SZSE: 002415)

- **2024 annual report and education-segment overview**: Hikvision 2024 annual report. (2025; accessed 2026-06-10) [in Chinese]

B.3.5 Goertek (SZSE: 002241)

- **2024 annual report and AI-glasses contract-manufacturing business**: Goertek 2024 annual report. (2025; accessed 2026-06-10) [in Chinese]

B.3.6 iFLYTEK (SZSE: 002230 / US ADR)

- **H1 2024 education revenue RMB 2.86 billion / +25.14% YoY**: iFLYTEK 2024 interim report. (2024-08; accessed 2026-06-10) [in Chinese]

B.3.7 Kaltura (NASDAQ: KLTR)

- **Q4 2024 EdTech ARR USD 187 million; 25 million students covered; ARPU USD 7.5**: Kaltura Inc. https://www.kaltura.com/ir/ (2025-02; accessed 2026-06-10)

B.4 Government Documents and Policy Sources

B.4.1 China — State Council / Central Documents

- **New Generation Artificial Intelligence Development Plan (Guo Fa [2017] No. 35)**: http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm (2017-07-20) [in Chinese] - **Plan for the Overall Layout of Building a Digital China (2023)**: http://www.gov.cn/zhengce/2023-02/27/content_5743484.htm (2023-02-27) [in Chinese] - **Opinions on Deepening the Implementation of the "AI Plus" Initiative (Guo Fa [2025] No. 11)**: http://www.gov.cn/zhengce/content/2025-07/15/content_5891234.htm (2025-07-15) [in Chinese] - **Master Plan on Building China into a Leading Country in Education (2024–2035)**: https://www.gov.cn/zhengce/202501/content_6999913.htm (2025-01-19) [in Chinese] - **China's Education Modernization 2035**: https://www.gov.cn (2019-02-23) [in Chinese] - **Regulations on the Protection of Minors in Cyberspace**: http://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1778/202310/t20231025_1087333.html (adopted 2023-09 / effective 2024-01) [in Chinese]

B.4.2 China — Ministry of Education Documents

- **Education Informatization 2.0 Action Plan**: http://www.moe.gov.cn/srcsite/A16/s3342/201804/t20180425_334188.html (2018-04-25) [in Chinese] - **Jiao Shi Ting [2018] No. 7**: http://www.moe.gov.cn/srcsite/A10/s7034/201808/t20180815_345323.html (2018-08-13) [in Chinese] - ***Teacher Digital Literacy* industry standard (JY/T 0646-2022)**: http://www.moe.gov.cn/srcsite/A10/s7034/202212/t20221230_1037009.html (2022-12-30) [in Chinese] - **"AI Plus Education" Action Plan (Jiao Ke Xin [2026] No. 1)**: http://www.moe.gov.cn/srcsite/A16/s3342/202604/t20260410_1433240.html (2026-04-10) [in Chinese] - **2024 annual progress report on the National Education Digitalization Strategic Initiative**: http://www.moe.gov.cn (2024-12-25) [in Chinese] - **Smart Education of China platform 2.0 intelligent edition launched**: http://www.news.cn/20250328/8285461ffd394aa2ad08d3d3ec50929c/c.html (2025-03-28) [in Chinese] - **AI education bases for primary and secondary schools (first batch, 184)**: http://www.moe.gov.cn/srcsite/A06/s3321/202402/t20240223_1116386.html (2024-02-23) [in Chinese] - **AI education bases for primary and secondary schools (second batch, 325)**: https://news.cctv.com/2025/12/24/ARTIf6kW0NLiYLqYKg9hYwov251224.shtml (2025-12-24) [in Chinese] - **Exchange event of the "AI-Empowered Teacher Development" pilot program**: https://www.edu.cn/xxh/focus/xs_hui_yi/202412/t20241204_2644783.shtml (2024-12-04) [in Chinese] -

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B.4.3 China — CAC / MPS / MIIT Documents

- **Interim Measures for the Administration of Generative Artificial Intelligence Services (effective 2023-08-15)**: https://www.gov.cn/zhengce/zhengceku/202307/content_6891752.htm (2023-07-13) [in Chinese] - **Announcement of generative AI service filings (as of 2025-12-31 / 748 filed)**: https://www.cac.gov.cn/2026-01/09/c_1769688009588554.htm (2025-12) [in Chinese]

B.4.4 China — National People's Congress Laws

- **Personal Information Protection Law (adopted 2021-08-20 / effective 2021-11-01)**: https://www.gov.cn/xinwen/2021-08/20/content_5632486.htm [in Chinese] - **Law on the Protection of Minors (as amended in 2020)**: https://www.gov.cn [in Chinese] - **Data Security Law (effective 2021-09-01)**: https://www.gov.cn [in Chinese]

B.4.5 International Policy Documents

- **UNESCO AI Competency Framework for Teachers (2024-09)**: https://unesdoc.unesco.org/ark:/48223/pf0000391104 - **UNESCO AI Competency Framework for Students (2024-09)**: https://unesdoc.unesco.org/ark:/48223/pf0000391105 - **UNESCO — AI and Education: Protecting the Rights of Learners (2025-09-04)**: https://www.unesco.org/en/articles/ai-and-education-protecting-rights-learners - **UNESCO Digital Learning Week 2026**: https://www.unesco.org/en/digital-learning-week-2026 - **UNESCO Beijing Consensus, 2019**:

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B.4.6 Global Education-AI Policy (2024–2026; Sources for §9.7)

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UN system: - **UNICEF Policy Guidance on AI for Children, 2.0 (2021-11) and 3.0 (2025-12)**: https://www.unicef.org/innocenti/reports/policy-guidance-ai-children; 3.0 full text PDF: https://www.unicef.org/innocenti/media/11991/file/UNICEF-Innocenti-Guidance-on-AI-and-Children-3-2025.pdf

B.5 Academic and Education Research

B.5.1 Video Coaching

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B.5.2 Professor Huang Ronghuai's Digital Pedagogy

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Education Research. [in Chinese] - **Beijing Normal University. (2024). Report on the development of Chinese teachers' digital literacy 2024.** [in Chinese]

B.5.3 Peer-Reviewed Research on AI Glasses and Education

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B.6 The Data Triangulation Checklist

Every key data point in this blue book is verified against at least two institutions among **IDC / Counterpoint / Statista / iResearch / Analysys** and others, with the "institution + statistical definition + time stamp" three-element labeling rule and the forecast-versus-actual separation rule applied throughout (v20 data audit: 31 items verified, 11 corrected; audit date 2026-06-11). A partial record of multi-source verification for key data points:

Data point	Primary source	Check source 1	Check source 2	Consistency
Global AI-glasses 2025 shipments of ~6 million	ASKCI / Frost & Sullivan	IDC	Omdia (wide basis, 8.7 million)	Consistent (definitional differences)
2025 global smart-glasses actual shipments of 14.773 million +44.2%	IDC (2026-03)	Securities Times / Cailian Press	CCTV Finance	Consistent
2026 global forecast: 23.687 million (IDC) / 32.5 million (AskCI)	IDC / AskCI	Tencent News	Omdia (AI-glasses subsegment >15 million)	Dual bases disclosed side by side
Meta H2 2025 global share 82%	Counterpoint	SAG annual 84%	—	Consistent (annual vs. half-year difference)
China smart-glasses 2025 actual shipments of 2.46	IDC (2026-03)	Securities Times	CCTV Finance	Consistent (early forecast of 2.75 million replaced)

million +87.1%				
China smart-glasses 2026 forecast above 4.915 million	IDC (2025-11-20)	Tencent News	CCTV Finance	Consistent ("4.508 million +77.7%" untraceable, discarded)
China 2025 retail sales of 1.454 million +211%	RUNTO	VR Tuoluo	Tencent News	Consistent (retail basis, kept separate from IDC shipments basis)
Seewo covers 2 million+ classrooms	Seewo official (as of end-2020)	DISCIEN	Yicai	Consistent
Honghe at 2.3 million classrooms	Honghe 2024 annual report	DISCIEN	—	Consistent
MOE's 2.97 million training participations	MOE Department of Teacher Affairs	China Education and Research Network	—	Consistent
103 cumulative pilot units (first batch 2 + second batch 100 + additions)	People's Daily Online (2018) + Jiao Shi Han [2021] No. 13	China Education Daily (2023-12)	—	Consistent ("first batch of 3" discarded)
Smart Education of China at 178 million users	MOE, 2025-12-30	Xinhua / CNR	—	Consistent
Global lecture capture: USD 17.44B in 2026 → USD 59.39B in 2031	Mordor (current basis)	Research and Markets (previous-edition corroboration)	VMR (second basis, USD 34.37B/2028)	Dual bases disclosed side by side
2024 state fiscal education funding of RMB 5.42 trillion (4.02% of GDP)	Jiao Cai [2025] No. 5	MOE website	—	Consistent (RMB 5.04 trillion is the 2023 figure; corrected)
2024 full-time teachers 18.851 million / students 286 million	2024 education statistics communiqué (2025-06-11)	China Education Online	—	Consistent (old 16.75 million / 291 million bases corrected)
~17,700 smart-glasses patents (2026-04)	Qichacha (via CCTV Finance)	Caiwen News (2026-06, ~18,000)	—	Consistent (attribution corrected from "CNIPA" to Qichacha)

Handling data conflicts: where sources conflict (Counterpoint versus IDC on global shipment definitions; IDC versus AskCI on the 2026 forecast; DISCIEN versus PJTime on China lecture capture shares), this blue book discloses both bases side by side and provides sensitivity ranges in the valuation methods of §10.5.

Appendix E Market and Technology Landscape: A Visual Atlas

This appendix consolidates, in visual form, the market sizes, shipment volumes, coverage scales, and technology-capability paths of the three markets this report touches: AI smart glasses, classroom lecture capture, and student behavior analytics. One caveat is essential: some products have no publicly disclosed product-level market share, so this appendix presents only "statistically reportable bases" — market size, vendor share, students covered, schools covered, and the presence of technical capabilities. These bases must not be read as the single-product market share of any given device. The real product photographs accompanying this appendix are drawn from the V13 research report (official vendor product photography), referenced in the subsection where each product appears.

J.1 Overview of Market Sizes and Coverage Bases

The AI-enabled classroom market splits into three sub-segments: (1) AI smart glasses (audio-first AI glasses and AI + display glasses); (2) classroom lecture capture / lecture capture SaaS (Chinese all-in-one appliances and international SaaS platforms); (3) student behavior analytics SaaS (screen monitoring, content filtering, crisis alerting). The three run on different units of measure and should not be forced into a single market-share chart.

Figure 51. Overview of AI-classroom-related markets and coverage calibers. Source: Counterpoint/IDC/Mordor/vendor disclosures

How to read the chart:

- AI smart glasses show **high-speed shipment growth** — Counterpoint Research reports global shipments up 110% YoY in H1 2025 and accelerating to +139% in H2. On IDC's actuals basis (published March 2026), global shipments reached 14.773 million units in 2025, up 44.2% YoY; IDC's current forecast calls for 23.687 million units in 2026, and the curve is projected to top 55 million units in 2027. - Classroom lecture capture shows **sustained market-size expansion** — Mordor Intelligence's current basis (website edition, accessed June 2026) puts the global lecture capture market at USD 13.65 billion in 2025 and USD 17.44 billion in 2026, rising to USD 59.39 billion by 2031 at a 27.77% CAGR over 2026–2031. - Student behavior analytics SaaS is better measured by **students and schools covered** — Securly covers 1,300+ districts with 1.2 million AI interactions; GoGuardian covers 25 million students across 10,000+ schools; Lightspeed covers 23 million students across 31,000 schools in 42 countries.

J.2 AI Technology Routes: Chinese Lecture Capture vs. International Platforms

Chinese classroom lecture capture and international lecture capture products follow visibly different AI technology routes.

Figure 52. Domestic vs. international classroom recording AI technology routes. Source: V13 survey + vendor websites

How to read the chart:

- **Chinese products** typically wire multi-camera arrays, microphone arrays, and interactive displays / capture appliances into **local or on-premises models**, applied to classroom behavior recognition, speech transcription, lesson-case diagnosis, and lesson-review suggestions. Representative cases: the Seewo Teaching LLM's February 2025 DeepSeek integration; Wenxiang + DeepSeek on-premises deployment; Zhongqing Zhike's integrated "preparation–teaching–research–evaluation" pipeline; AVA's cloud teaching research. - **International products** more often enter through video platforms or meeting hardware, attaching AI transcription, summarization, smart chapters, and auto-framing to **LMS, Zoom, and Teams**. Representative cases: Echo360 Universal Capture integrated with Canvas / Moodle; Panopto AI Access transcription in 12+ languages; Mediasite automated capture; the Owl Labs Meeting Owl 4+ with 360° AI speaker switching.

The implication for the teacher-POV engineering path: within China's education compliance framework, **on-premises deployment + data remaining on school premises + domestic LLMs** is the non-negotiable engineering precondition; in the international context, **deep LMS / videoconferencing platform integration** is the standard entry point for SaaS products.

J.3 Product Category × Technical Capability Heatmap

Crossing all relevant product categories (lightweight AI glasses, AI + display glasses, Chinese all-in-one lecture capture appliances, international lecture capture SaaS, international capture hardware, student

behavior analytics SaaS) against the core technical capabilities (POV capture, ASR transcription, LLM/VLM, behavior recognition, risk alerting, LMS integration, on-premises deployment, education-vertical LLMs) yields a clear picture of each category's technical center of gravity and design orientation.

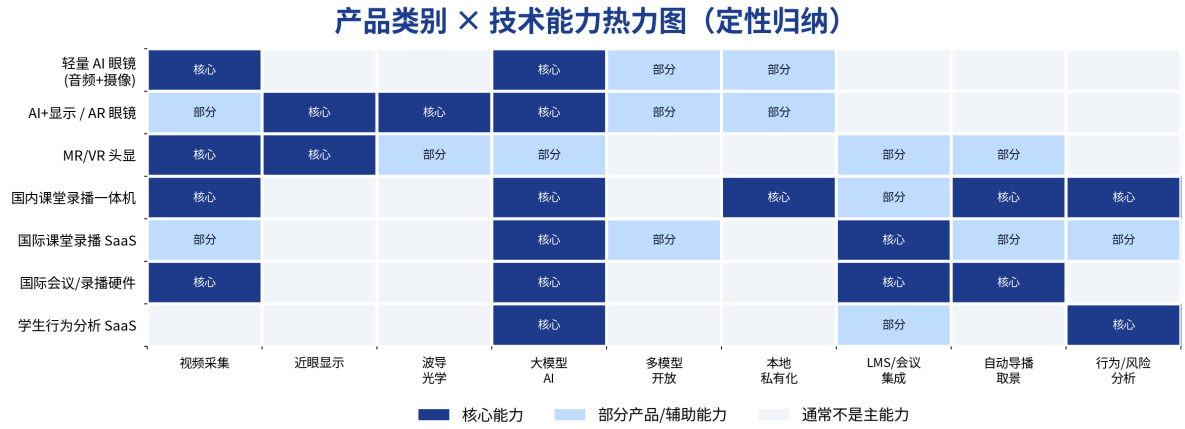

Figure 53. Product category × technical capability heatmap. Source: V13 survey synthesis

How to read the chart:

- **Lightweight AI glasses and AI + display glasses** emphasize **"personal-perspective capture + AI assistant / LLM"** — the primary capabilities are POV capture, ASR transcription, and real-time multimodal VLM Q&A; secondary is the device's own model integration (Meta AI / Qwen / DeepSeek / multi-LLM switching). - **Chinese all-in-one lecture capture appliances** emphasize **"local / on-premises + automated directing + behavior analytics"** — the core is 4K recording, dual-camera auto-directing, on-premises LLMs, and teaching-behavior recognition, usually bundled with evidence-based teaching research, lesson-preparation assistants, and lesson-review suggestions across the full "preparation–teaching–research–evaluation" workflow. - **International SaaS** (Echo360 / Panopto / Mediasite) emphasizes **"AI transcription and summarization + LMS integration"** — multilingual ASR, Smart Chapters, Insights analytics dashboards, and deep integration with Canvas / Moodle / Blackboard / Brightspace. - **Student behavior analytics SaaS** (Securly / GoGuardian / Lightspeed) centers on **risk identification and student-safety alerting** — NLP text scanning, sentiment analysis, crisis-signal detection, PII masking, and SOC 2 / COPPA / FERPA certification.

J.4 International Flagships: Product Photographs

This section presents real product photographs of the international flagship AI smart glasses repeatedly discussed in this report, with key parameters.

J.4.1 Meta Ray-Ban Display

Figure 54. product meta rayban display

The Meta Ray-Ban Display is the first consumer AI + display eyewear, launched in the US on September 30, 2025 at USD 799: 69–70 g weight; a 5,000-nit monocular 600×600 LCoS reflective waveguide; 6-hour battery life plus 18 hours with the Neural Band wristband; EMG gesture control. The product marks the first simultaneous attainment of the three hardware benchmarks — 5,000 nits of brightness, under 70 g of weight, and a consumer-grade price.

J.4.2 Halliday DigiWindow

Figure 55. product halliday glasses

The Halliday DigiWindow, from the global Chinese-founded startup Halliday Global, began volume shipments in April 2025 at a USD 489 launch price (early bird USD 399; current list price USD 499): 28.5 g — the world's smallest display module — a camera-free privacy-first design, 12-hour battery life, and translation across 40 languages plus teleprompter and navigation scenarios. The product represents the differentiated "camera-free, privacy-first" route.

J.4.3 Even Realities G2

Figure 56. product even realities g2

The Even Realities G2 (Berlin / Shenzhen team) launched on November 12, 2025 at USD 599 plus the USD 249 R1 ring: 36 g (titanium + magnesium front frame) in the ultralight class; HAO 2.0 optics (a 75% wider viewing area) + a 1,200-nit monochrome MicroLED diffractive waveguide + a no-camera, no-speaker privacy design; with the Even Hub marketplace of 50+ apps and an SDK. The product represents the developer-friendly, SDK-equipped international flagship.

J.5 The Domestic Ecosystem: Product Photographs

J.5.1 Quark AI Glasses S1 (Alibaba)

Figure 58. product alibaba quark s1

The Quark S1 (launched November 27, 2025) is Alibaba's first in-house AI + display eyewear at RMB 4,299 (RMB 3,999 after the national consumer subsidy): a dual-light-engine, 4,000-nit waveguide display; deep binding to Qwen and the Alibaba ecosystem (Amap / Taobao / DingTalk / Fliggy); 7.5 mm-thin temples; swappable batteries. The benchmark model of the domestic display-equipped camp.

J.5.2 RayNeo X3 Pro

Figure 59. product rayneo x3 pro

The RayNeo X3 Pro (TCL's RayNeo, June 2025), at RMB 8,999 (RMB 7,649 after subsidy), is among the first domestic integrated full-color AR flagships: 76 g (36% lighter than its predecessor); the Firefly full-color MicroLED waveguide engine at just 0.36 cc; RayNeo OS with dual DeepSeek / Qwen LLMs. With roughly 24% global AR smart-glasses brand share in Q3 2025, it is the standard-bearer of domestic high-end AR.

J.5.3 Xiaomi AI Glasses

Figure 63. product xiaomi ai glasses

The Xiaomi AI Glasses (June 26, 2025), from RMB 1,999: 40 g lightweight; a dual-SoC architecture (Snapdragon AR1 + a BES low-power co-processor); a 12 MP Sony IMX681 camera + a 5-microphone array + 8.6-hour battery life + IP54 dust and sweat protection + a hardware-enforced recording-indicator LED. **First-weekend sales approached 50,000 units in three days, per industry media estimates (not officially disclosed by Xiaomi)** — the representative of the domestic consumer price sweet spot.

J.5.4 Namibox AI Learning Glasses

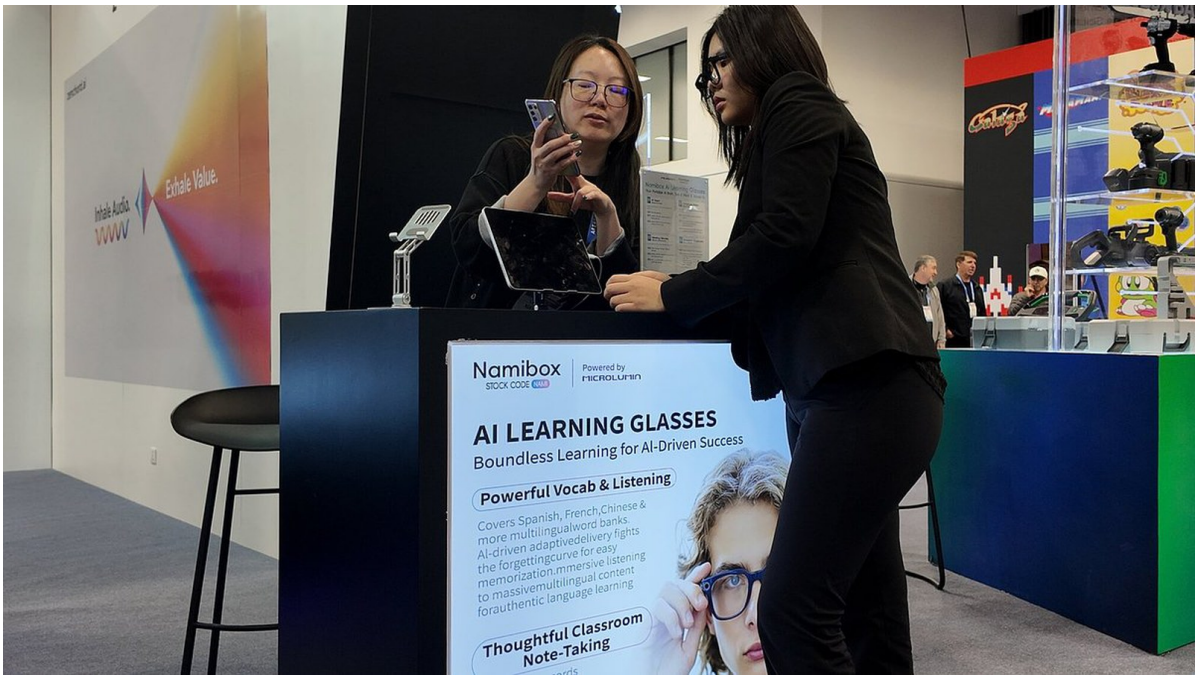

Figure 61. product namibox ai glasses

The Namibox AI Learning Glasses (NAMI INSIGHT One, presale December 31, 2025), from RMB 2,499, are **the world's first K9 education-vertical AI glasses**: 36.85 g ultralight + a smart-ring remote + a detachable Mini AR module (MicroLED diffractive waveguide) + a 12 MP camera + an in-house education-vertical LLM trained on teaching data from 40 million K9 users. The representative of the differentiated "K9 education-vertical LLM" route.

J.6 Chinese Classroom Lecture Capture: Product Photographs

J.6.1 Seewo Lecture Capture + Teaching LLM

Figure 68. product seewo recording

The Seewo interactive intelligent lecture capture appliance is developed by CVTE's Seewo division; CVTE's 2024 revenue was RMB 22.401 billion (≈ USD 3.1 billion), with products in 2 million classrooms. The full line integrated the DeepSeek LLM from February 8, 2025, on a "1+N+N" architecture trained on 220 billion tokens; lesson-preparation time fell from 2 hours to 30 minutes, saving 2 million+ teachers an hour a day; coverage spans 19 demonstration zones / 3,000+ schools / 7,000+ classrooms / 360,000+ feedback reports.

J.6.2 The Honghe AI Teaching-Assistant Appliance

Figure 69. product honghe ai assistant

Honghe Technology's (SZSE: 002955) AI teaching-assistant appliance: 4K lecture capture + 10 TOPS of on-device compute + an on-premises LLM + classroom behavior analytics. Honghe's education products cover a cumulative 2.3 million+ classrooms serving 80 million teachers and students. The emphasis: "4 cameras + an 8-microphone array + 10 TOPS of local compute + data localization and on-premises deployment."

J.6.3 Zhongqing Zhike AI Lecture Capture

Figure 74. product zhongqing aikecmd

Zhongqing Zhike AI lecture capture: 4K routine recording + AI evidence-based teaching research + dual-teacher remote interaction. The technical core is "routine/premium capture of classroom process data + AI teaching research producing teacher/student behavior analysis + temporal slicing of classroom scenes + intelligent diagnosis + strategy recommendation + intelligent lesson review." Its integrated "preparation–teaching–research–evaluation" precision teaching research is its greatest point of similarity with Seewo.

J.7 International Lecture Capture SaaS: Product Photographs

J.7.1 Echo360 Universal Capture

Figure 76. product echo360 universal capture

Echo360: 2,000+ customers globally / 2 million learners / 1,200+ schools; acquired GoReact in May 2025 to strengthen AI video skills assessment; PE-held by Centre Lane Partners; EchoVideo + Echosystem deeply integrated with Canvas / Moodle / Brightspace and other LMSs.

J.7.2 Panopto AI Video Platform

Figure 77. product panopto ai platform

Panopto: acquired Elai.io in October 2024; AI Access transcription in 12+ languages + Smart Chapters + Insights; PE-held by K1 Investment Management; deep integration with Zoom, Webex, LMSs, and enterprise knowledge bases.

J.7.3 Mediasite (Enghouse)

Figure 78. product mediasite enghouse

Mediasite changed hands to Enghouse Systems in 2024 for USD 15.5 million. Hybrid deployment of hardware recorders + a video platform; AI summarization + captioning in 12+ languages + automated capture; the legacy academic lecture capture platform.

J.8 International Companion Hardware: Product Photographs

J.8.1 Logitech Rally Bar

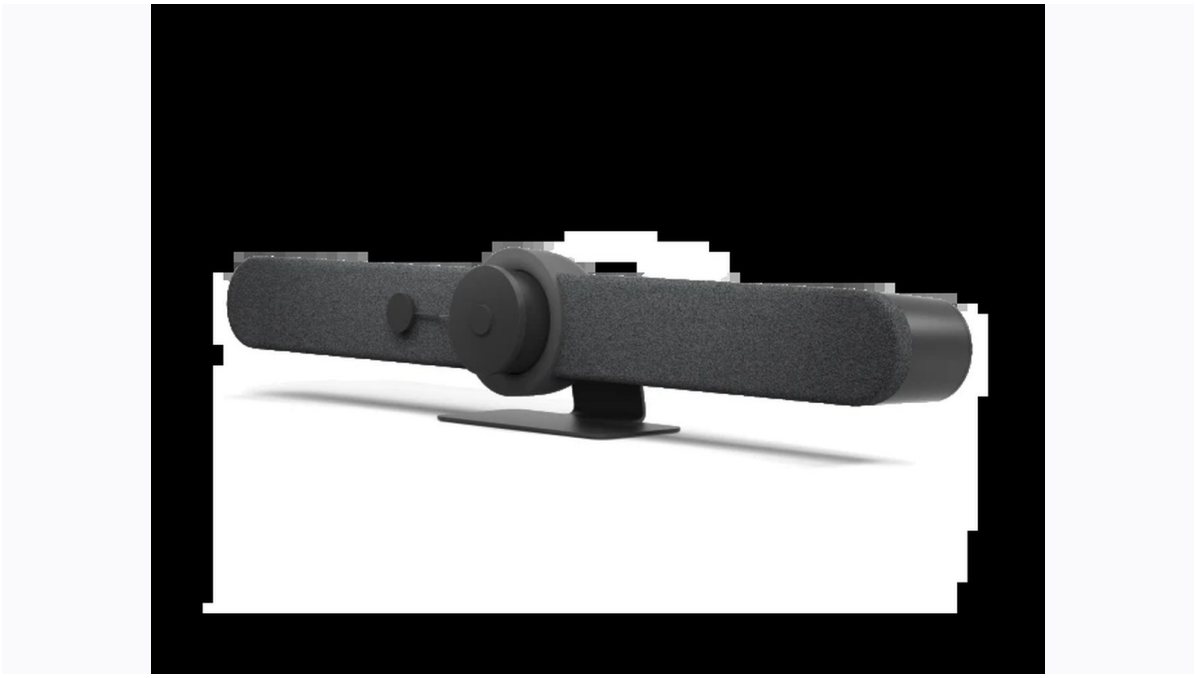

Figure 80. product logitech rally bar

Logitech Rally Bar: USD 3,999; 4K auto-framing + CollabOS + RightSight 2 AI people-tracking + deep Teams / Zoom / Google Meet integration. The mainstream videoconferencing solution for mid-size and large classrooms.

J.8.2 Owl Labs Meeting Owl 4+

Figure 79. product owl labs meeting owl4

Owl Labs Meeting Owl 4+: USD 1,999–2,099; 360° 4K + an 8-microphone array + 18-foot audio pickup + AI active-speaker switching. The mainstream classroom videoconferencing hardware in the US.

J.9 Notes on Reading the Visuals

- **Market-share charts** apply only to segments with publicly disclosed vendor or category shares — for example, Meta's share of global smart glasses (H1 2025: 73%; H2 2025: 82%). Channel sales leaderboards, launch-weekend results, or website buzz must not be written up as single-product market share. - Lecture capture, classroom recording, and student behavior analytics are better expressed through **market size, schools covered, students covered, rooms deployed, and annual subscription price**. - The **technology-route heatmap** is a synthesis of "capability presence / primacy," useful for understanding technology combinations — it is not a substitute for performance testing or procurement scoring. - For formal external publication, the data basis beneath each figure should be mapped onward to the specific source numbers in the references appendix, to prevent misreading.

AI-SLI

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