

POINT OF VIEW · INDUSTRIAL AI · NOVEMBER 2026

OWN THE INTELLIGENCE, NOT THE SUIT

Why the winning exoskeleton startup is a software company that ships hardware last



Paul Lalovich, PhD
AGILE DYNAMICS · AXION TECHNOLOGY FOUNDATION · NOVEMBER 2026 · 8 MIN READ

Exoskeleton value is migrating from the device to the data it generates — so the startup that wins this decade will enter as a service business, scale as a vendor-neutral AI platform, and build hardware only once its own fleet data tells it exactly what to build.

$2.0–2.35bn
GLOBAL MARKET BY 2030–31

20–29%
FORECAST ANNUAL GROWTH

~85%
INDUSTRIAL & COMMERCIAL SHARE (ABI)

Walk through a modern fulfilment centre and you may now see workers wearing powered suits that take a meaningful share of the load off every lift. It is tempting to read this as a hardware story: motors, batteries, carbon frames, and a race to the lowest price per unit. That reading is understandable, and for a new entrant it is almost certainly wrong. The device is the visible part of the market. The durable value sits in what the device knows about the work, the worker, and the outcome.

The market itself is small but accelerating. Research houses place 2025 revenue somewhere between roughly USD 0.56bn and 0.85bn, with forecasts converging on USD 2.0–2.35bn by the turn of the decade. The segment definitions differ from one provider to the next, but the direction does not: industrial and commercial deployments dominate, powered sys-

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tems out-earn passive ones, and Asia-Pacific is the largest and fastest-growing region. Analysts now single out exoskeleton-as-a-service subscriptions and cloud outcome analytics as growth drivers in their own right.

THE BOX IS BECOMING A COMMODITY

Look closely at the companies that are winning and the pattern is consistent. Verve Motion does not really sell a suit; it sells an annual subscription that bundles the SafeLift device, its VerveInsight analytics portal and ongoing support, and its partner HexArmor leads with injury-reduction and return-on-investment claims rather than specifications. German Bionic prefers renting to selling and describes its control software as trained on motion data gathered from thousands of users. In both cases, the fleet data is the moat.



POWERED Full-body powered systems deliver the most assistance, but the device alone does not tell a buyer whether injuries are falling.

On the consumer side, Hypershell has shown how quickly a Shanghai-built device can reach tens of thousands of users across dozens of countries — and how much capital and manufacturing speed that requires. The 2026 IFA Innovation Awards list featured several exoskeletons, most from Chinese brands that need partners to reach markets outside China. For a startup without a factory, that is an invitation to distribute, not to compete.

FIGURE 1

The Agile Dynamics entry model: Exo-as-a-Service → Exo OS → Exo Hardware



Phases overlap deliberately: software development begins while the service business is still scaling, and hardware design starts only once fleet data has identified a gap.

ENTER AS A SERVICE, NOT A BOX

The lowest-risk entry is to become a value-added reseller and deployment partner for the leading devices. Manufacturers already support this: Verve runs a formal partner programme that lets third parties sell, deploy and support its suits. A sensible portfolio pairs one powered lift-assist system with one or two low-cost passive devices for industrial buyers, plus a consumer range distributed through online channels and experience centres.

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PASSIVE Lower-cost passive devices let a service partner equip whole teams quickly and start building comparable data across shifts.

What the customer buys, however, is a service. It begins with an ergonomic risk assessment, moves to a paid pilot of 10–25 units over 8–12 weeks with pre-agreed injury and productivity KPIs, and converts into a 12–36 month subscription covering devices, fitting, training, maintenance and a quarterly ROI report. Leasing partners can carry the hardware; workers' compensation insurers can co-fund it once claims data starts to move. And every deployment, from day one, captures data under a consent model built for GDPR, the UAE's PDPL and Hong Kong's PDPO.

> **"The service business is not the destination. It is the data-collection engine for the business that matters."**

EXO OS: THE VENDOR-NEUTRAL INTELLIGENCE LAYER

The service business is not the destination. It is the data-collection engine for the business that matters. Every large customer eventually runs a mixed fleet, and every vendor dashboard sees only its own devices. That gap is the opening for a single, vendor-neutral AI layer — working name Exo OS — that manages allocation, charging, utilisation, maintenance and fit profiles across brands.

Above fleet management sits the real intelligence: computer-vision and IMU-based risk scoring in the NIOSH and REBA tradition, injury prediction and personalised coaching. Crucially, this layer also works for workers who wear no suit at all, which turns a niche device market into the far larger market for workplace ergonomics. At the top, outcome reporting attributes injury, absence and productivity changes, and produces the ESG, safety and insurer evidence packs that buyers actually need to justify renewal.

Adaptive assistance — tuning how a device supports an individual worker — is the long-term prize, but it depends on vendor access. Most manufacturers publish no public SDK today, so this capability is best pursued as co-development with the same suppliers the startup already resells. Pricing follows SaaS logic: a per-worker monthly fee plus a per-site module for vision ergonomics.

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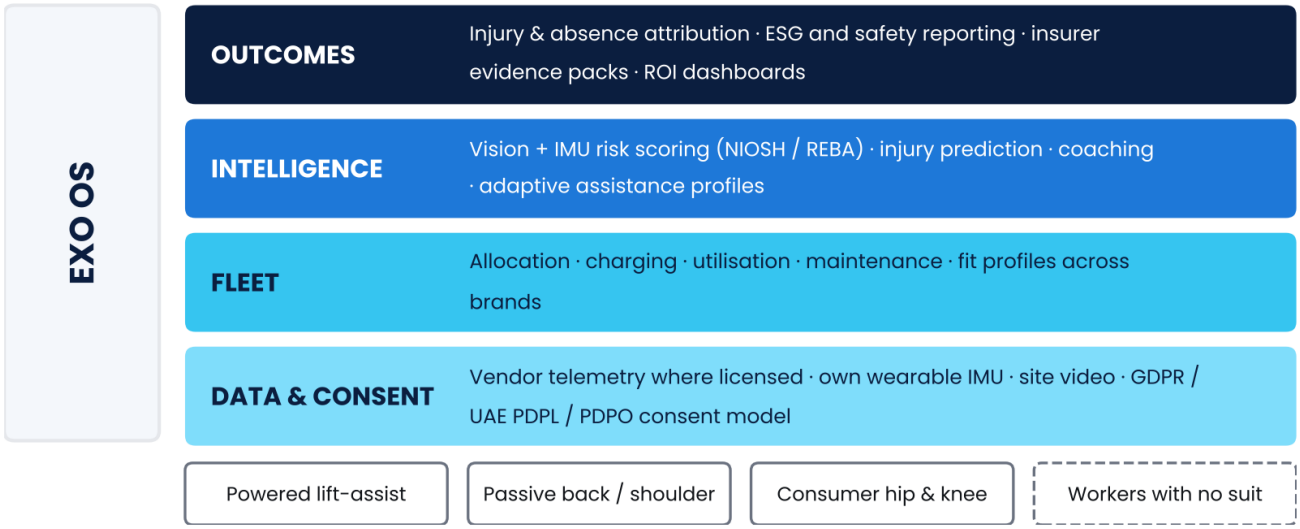
FIGURE 2

Exo OS reference architecture — one intelligence layer across every device and worker



The dashed tile is the strategic unlock: ergonomics intelligence that serves unequipped workers widens the addressable market well beyond device owners.

HARDWARE LAST, AND NARROW

Only after month 30 does it make sense to design hardware, and then only for two or three niches that the large brands neglect and that the fleet data has already exposed. Candidates include shoulder and arm assist for heat-stressed outdoor work in the Gulf, patient-handling support in care homes, airport baggage handling, and soft exosuit modules for older adults. The first devices should be co-designed with a Shenzhen ODM, running the startup's own control software and models. Occupational and wellness products should remain clearly separate from medical claims, which bring EU MDR and FDA obligations and belong in a later, clinically partnered phase.

GCC

Logistics hubs, airports, construction and extreme-heat outdoor work.

WESTERN BALKANS & CEE

Manufacturing and logistics corridors underserved by brand distribution.

HONG KONG & SE ASIA

Ports, baggage handling and fast-ageing elderly-care sectors.

A HIGH-LEVEL FORECAST

Figure 3 sets the opportunity against an illustrative five-year plan. The service business carries the early years: roughly 500 devices under subscription by month 18 and more than 2,000 by month 36, at a blended USD 4,000–4,500 per device per year across powered and passive units. Software revenue starts small but carries much higher margins, so its weight in the business grows faster than its share of revenue. On these assumptions, Exo OS passes 30% of gross profit by year three and approaches 60% by year five, when the company would be generating close to USD 30m in revenue.

That shift in mix is the whole investment case. A reseller is valued on its margins; a vendor-neutral platform with proprietary outcome data is valued on its recurring revenue and its moat. The funding path follows the same logic: seed capital for pilots and the service business, a Series A for the software, and strategic

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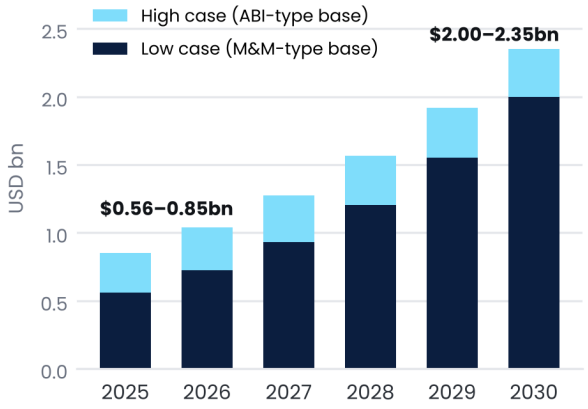
capital from logistics groups, insurers or industrial funds for hardware.

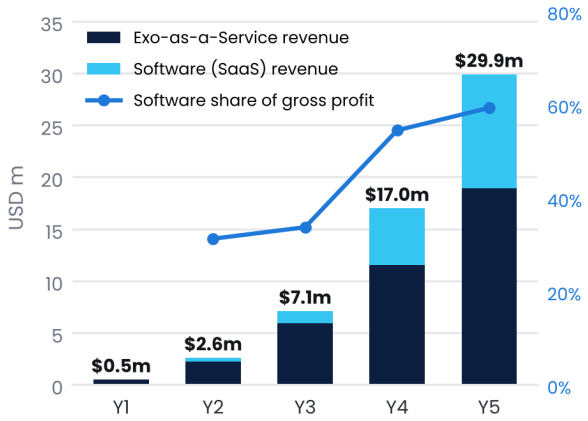
FIGURE 3

Market outlook and illustrative startup trajectory

Global exoskeleton market, USD bn (range of published forecasts)



Illustrative startup revenue and software share of gross profit



Left: interpolated between low (MarketsandMarkets base, ~USD 0.56bn) and high (ABI Research base, ~USD 0.85bn) 2025 estimates to 2030 forecasts of ~USD 2.0–2.35bn. Right: Agile Dynamics illustrative model — assumes ~USD 4,200 blended revenue per device-year, ~30% service gross margin and ~75% software gross margin. Not a forecast of any specific company.

GOVERNANCE BEFORE TECHNOLOGY

An AI layer that watches how people move at work raises questions that hardware never did. Workers must understand and consent to what is collected; employers must not turn safety analytics into surveillance; insurers will want evidence they can audit. This is where most technology-led ventures stumble, and where our ANDRA™ method — AI-Native Dual-Running Architecture — is designed to help, running new AI-driven processes alongside existing safety and HR systems until the evidence justifies the switch.



ADOPTION Comfort and freedom of movement decide whether workers keep wearing a device — and whether the data keeps flowing.

It is also why we see this as a natural theme for the AXION Technology Foundation, whose Trusted AI and Privacy and Security pillars address exactly these questions of consent, provenance and accountability for regulated and safety-critical deployments. Worker acceptance — comfort, heat, stigma — matters just as much, and is best handled through proper fitting, a choice of devices and voluntary programmes.

The exoskeleton market will keep producing better, cheaper suits. The opportunity for a

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new entrant is not to out-build Hypershell or Verve, but to become the intelligence that every suit, and every worker, eventually reports to.

TAKEAWAY

In exoskeletons, whoever owns the outcome data owns the customer. Start as a multi-brand service partner, turn every deployment into training data for a vendor-neutral AI layer, and let that data — not ambition — decide when and what hardware to build.

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AXION Technology Foundation

The infrastructure and the method for AI-native institutions

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This paper presents Agile Dynamics' strategic point of view. References to Verve Motion, HexArmor, German Bionic, Hypershell and other companies draw on public company and third-party sources and do not imply any partnership, endorsement or commercial relationship. Market figures vary widely between research providers (MarketsandMarkets, ABI Research, Mordor Intelligence, Grand View Research); the startup trajectory in Figure 3 is illustrative only and should be validated with vendors before building a financial model.

ABOUT THE AUTHOR



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Paul leads Agile Dynamics, a global management consulting firm headquartered in Singapore with offices in the UAE and the Americas, and is Founding Director of the Hong Kong-based AXION Technology Foundation. He is the author of the ANDRA™ (AI-Native Dual-Running Architecture) methodology and the book *From Cubicle to Tribe* (2024), and co-founder of SwiftMotion, an AI-native treasury intelligence platform. Based in Dubai, he advises institutions across the GCC, Asia and Europe on AI-native operating models and digital transformation.

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