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The Global Emerging Robotics Market 2027–2037

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Abstracts

Emerging robotics comprises the classes of machine that break the founding assumptions of classical industrial robotics — operating outside cages, in unstructured environments, alongside people, or beyond the reach of a reliable communications link — and that consequently depend on perception, learning and onboard decision-making rather than on a pre-programmed path in a controlled cell. Emerging robotics is the fastest-growing segment of the global automation economy and the most widely misunderstood. The market spans seven verticals: warehouse and logistics, defence, humanoids, manufacturing and automation, construction and infrastructure, space, and robotics foundation models. Three structural facts define the decade ahead, and each cuts against the prevailing narrative.

The first is that no general-purpose robot exists. Every commercially deployed system in the world today is task-scripted, teleoperated, or supervised. The most-cited humanoid deployments on earth — at BYD, GXO, Amazon, BMW and Mercedes — amount, in total, to a few hundred machines. The growth is real; general autonomy is not. And the systems operating closest to genuine mission-level autonomy are found not in humanoids but in defence, where GPS-denied and communications-denied conditions have forced the problem to be solved rather than deferred.

The second is that value does not sit where capital is flowing. Actuation — actuators together with dexterous hands, which are themselves actuator assemblies — constitutes the overwhelming majority of a humanoid robot's bill of materials. Semiconductors are a small and shrinking fraction of it, and even the silicon aboard the machine is majority motor-control rather than AI compute. Chinese suppliers hold a decisive structural cost advantage in precisely the mechanical categories that dominate the machine, arising from end-to-end domestic supply chains and near-total control of rare-earth magnets. A Western strategy predicated on owning the intelligence layer is a strategy predicated on owning the smallest part of the robot.

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The third is that the binding constraint is physical, not algorithmic. Power, memory and bandwidth — not model quality — determine what a robot can do away from a wall socket and a network connection. A full manipulation stack demands more memory than onboard accelerators can supply, and every watt spent on inference is a watt not spent on motion. The operational compute and memory layer that follows from this is the fastest-growing category in the components market, it has no incumbent, and it appears on no published market map.

The components layer is where the machine's cost actually lives, and it is the least funded part of the industry. That asymmetry is the central investment finding of this report.

The Global Emerging Robotics Market 2027–2037 is a comprehensive analysis of the seven verticals reshaping physical automation, the three-layer stack beneath them, and the capital being deployed against both. Published by Future Markets, Inc., the report combines a full quantitative forecast to 2037 with an unusually direct assessment of what these machines can and cannot presently do. The report introduces the Autonomy Dependency Scale (A0–A4), a classification applied consistently to every company profiled, distinguishing designed capability from observed operating class. It records, for the first time in a market study of this kind, that nothing in commercial deployment operates at A4, that the most autonomous systems on the market are in defence rather than humanoids, and that the gap between vendor claims and field performance is widest precisely where capital is most concentrated.

A detailed bill-of-materials analysis resolves the value-capture dispute that has dominated the sector's commentary. The report demonstrates that actuation accounts for 73% of a humanoid's cost, that semiconductors fall from 8% to 5%, and that cost share, margin and defensibility are three different things — with a 40–60% Chinese cost advantage in the categories that matter most. The forecast covers 2027–2037 across seven verticals, seven component categories, five business models and five regions, in base, conservative and optimistic scenarios, with a full sensitivity analysis identifying the consumer humanoid price threshold as the single largest variable in the market.

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