

Yesterday's Growth Engines Won't Power the Future of Industrial Technology

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On the surface, the future looks bright for producers of industrial technology, a \$5.8 trillion industry that supplies everything from factories to power plants. Global compound annual growth is projected at 6% through 2030.

Underneath, however, things are shifting. The value pools driving the industry's growth are rapidly changing. The China market is cooling for many foreign equipment suppliers, likely for good. So is demand for machinery and equipment in the automotive sector and in some once-booming segments of the market for the low-carbon energy transition.

In their place, defense, data centers, and infrastructure are emerging as new growth drivers. By 2030, these sectors are projected to account for \$1.1 trillion in additional demand, or around 37% of the industry's growth.

To gauge the opportunities in different end markets, we analyzed more than 3,000 earnings calls by 280 industrial-tech companies, as well as hundreds of market intelligence reports. We also estimated production volumes and demand shifts in five key sectors spanning 158 product segments. (See "Our Methodology.")

— Our Methodology

To estimate the size of the global market for the industrial-tech industry, we grouped products into five sectors (shown in the exhibit below):

- **Machinery and Components.** With \$2 trillion in global revenue and a projected CAGR of 3.3% through 2030, these products include stationary machinery, general-purpose equipment, other instruments and subsystems, base components, mechanical components, process components, and electric base components.
- **Industrial Automation.** With \$1.3 trillion in global revenue and a projected CAGR of 12.5% through 2030, these products include software for plant operations, digital-enabling technology, intelligent field modules, identification systems, actuators, field controls, smart elements, and industrial information technology infrastructure and connectivity.
- **Building Technologies.** With \$900 billion in global revenue and a projected CAGR of 4.6% through 2030, these products include building systems and building components.
- **Off-Highway Mobile Machinery.** With \$600 billion in global revenue and a projected CAGR of 3.9 % through 2030, these products include machinery for the agriculture, construction, mining, rail, and forestry sectors.
- **Green-Tech, Propulsion, and Power-Generating Equipment.** With \$1.1 trillion in global revenue and a projected CAGR of 4.5% through 2030, these products include green-tech equipment, fluid and process power equipment, and engines and mechanical power.

These sectors cover 158 product segments. We aggregated the market size for each segment by drawing on hundreds of reports from leading providers of market intelligence. We then mapped the market for target verticals. We leveraged capital expenditure data for specific countries from Oxford Economics to estimate the size and growth trajectories of all 158 segments across verticals and geographies. According to this analysis, we project continued growth across all industrial-tech segments through 2030. (See the exhibit below.)

The implications of our research are clear: in many instances, the winners of the past will not be winners in the future. To succeed, manufacturers should consider transforming their business models and adapting their product and service offerings. For many companies, that will mean letting go of old assumptions and considering new alliances. It may also mean acting boldly on

what might be a painful change agenda to foster the resilience and flexibility needed to thrive in uncertainty and capture emerging opportunities in a new industrial era.

A Shifting Industrial-Tech Value Pool

We divide industrial technology into five key sectors: machinery and components; industrial automation; building technologies; off-highway mobile machinery; and green tech, propulsion, and power-generating equipment. In this article, we focus specifically on the end-market opportunities for industrial-tech suppliers within these sectors—as opposed to the growth trajectories of the sectors themselves. Although global investment in renewable energy, for example, will continue to expand, there will be more limited opportunities for US and European suppliers of machinery and industrial automation.

Industries such as construction, high-tech electronics, and processed foods have been sources of steady growth for industrial-tech suppliers. But until recently, several growth drivers really stood out: the industrialization of China, the automotive sector, and the green transition. For suppliers, the old success formula changed little: develop strong relationships with OEMs, ensure mechanical excellence, and keep generating incremental innovation. European machinery companies were among the biggest winners, accounting for about one-third of global output as of 2018. But that landscape has changed dramatically.

The China Challenge. China alone accounted for one-quarter of all global industrial-tech sales from 2015 through 2020. Although China’s domestic industrial-tech market remains attractive for foreign suppliers that are already well established there, export opportunities for European and American manufacturers are diminishing. China is now self-sufficient in much of the machinery and equipment it needs. China’s market is also more challenging for new entrants to penetrate because of local sourcing rules and the presence of domestic manufacturers that benefit from supportive industrial policies, cost advantages, and a knack for rapid execution.

In fact, China is now the world’s dominant producer of photovoltaic cells, batteries, networking equipment, and other goods. It also has significant overcapacity. Chinese manufacturers are competing head-on with Western machinery and equipment manufacturers in their home markets. And they’re expected to grow stronger. In many cases, Chinese producers have caught up with or even surpassed their Western counterparts in technological know-how.

To better compete in China, European suppliers are giving greater autonomy to their local operations so they can more flexibly navigate the market. To defend their global market share from low-priced Chinese competition, some midsize European companies are securing support

from deep-pocket investors, such as private equity firms. IFM, for instance, in May 2025 partnered with KKR to jointly navigate the country's business landscape in this new era. Others are partnering with Asian competitors or exiting markets altogether when it appears that they will no longer be able to compete in the long run. Viessmann, for instance, combined its heat pump business with Carrier's after realizing that scale will be a key success factor going forward.

The Decelerating Automotive Market. The automotive market is weakening. The transition from internal combustion engines to electric vehicles translates into less demand for machinery because EVs require fewer mechanical parts. While the automotive market accounted for 9% of industry demand from 2010 through 2015, that share is projected to drop to only 4% through 2030.

Shifting competitive dynamics in the auto sector are also affecting industrial-tech suppliers. Asian OEMs have been growing by more than 10% annually since 2023, which has given Asian suppliers an edge. European OEMs, by contrast, have lost more than 13 percentage points in market share since 2017. Their margins dropped from 7.4% in 2017 to 5.1% in 2023. What's more, Chinese and US companies dominate the automotive sector's big growth areas—such as EV powertrains, batteries, and advanced driver assistance systems—leaving little room for European suppliers. Firms in the US, where EVs as a percentage of sales rose from 5.9% in 2022 to around 8% in 2025, lead in such key technologies as advanced driver assistance systems and EV software. More than \$278 billion in public and private capital has been committed to US EV and battery manufacturing over the past few years.

Speed Bumps in the Green Economy. Although the green economy is projected to keep growing strongly, the market for US and European suppliers of decarbonization technologies will account for just 3% of growth for industrial-tech suppliers over the next five years, compared with 5% from 2020 through 2025. One key reason is lowered expectations that the hydrogen economy will create a large demand for suppliers of electrolyzers, fuel cells, and compression and storage equipment. Forecasters have cut projected 2030 hydrogen production by around half, to 5.5 million tons, far below industry and government ambitions. As a result, many suppliers in the hydrogen economy ecosystem are in restructuring mode. Industrial gas giant Air Products, for example, halted construction of a \$500 million green hydrogen plant in New York in 2025.

Some other high-profile renewable-energy projects are viewed as stranded assets, particularly in the US owing to policy changes. Ørsted cancelled two major wind farms off the coast of New Jersey in late 2023, at a cost of several billion dollars. And while China's green-tech market continues to grow, European industrial-tech suppliers have been losing ground to domestic manufacturers, which produce most of the world's green-energy systems and core components. China accounts for around 80% of the world's manufacturing capacity for solar modules, cells, and wafers.

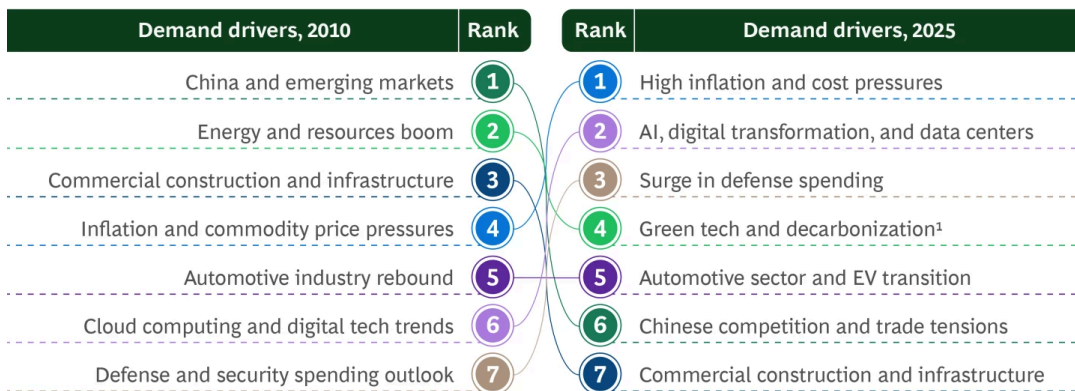
The Industry's Rising Value Creators

At the same time that growth in traditional value pools is slowing, defense buildups, data centers, and infrastructure renewal are emerging as key sources of growth. This shift was clear in our analysis of industry sentiment based on the earnings calls of listed US and European industrial tech companies. Aside from inflation and cost pressures—which are driven by economic cycles—data centers, defense spending, and the energy transition were cited most often as key demand drivers. (See Exhibit 1.) This shift is also apparent in revenue trends and forecasts for these firms. (See Exhibit 2.)

EXHIBIT 1

The Shifting Relevance of Demand Drivers

Ranked by number of mentions in more than 3,000 earnings calls of more than 280 machinery and industrial automation firms

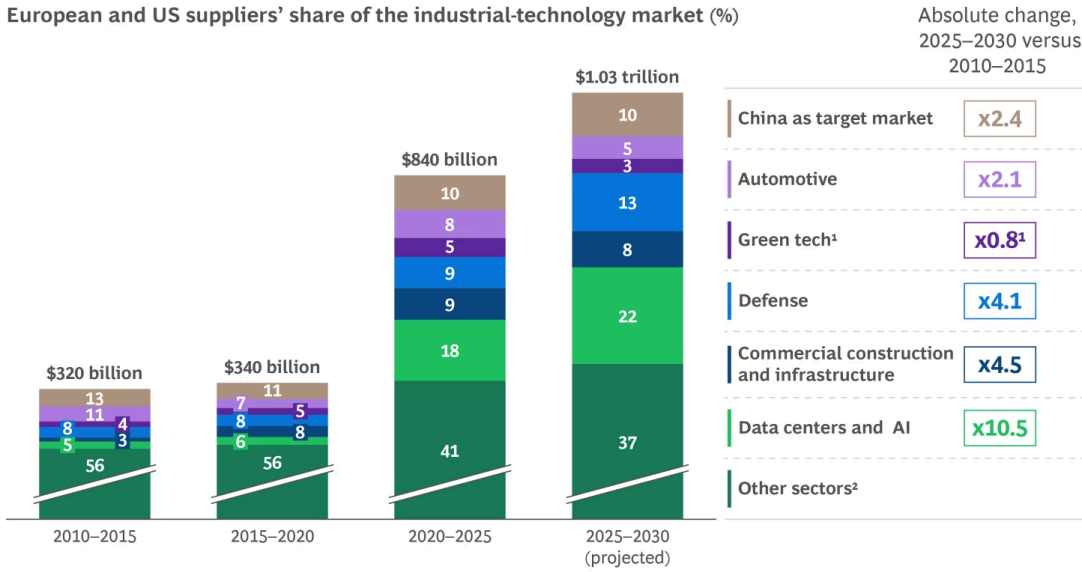


Source: BCG analysis.

¹Green tech refers to equipment and machinery for low-emission industrial applications.

EXHIBIT 2

Data Centers and Defense Are Replacing China, Automotive, and Green Tech as Top Value Creators



Source: BCG markets model.
¹Green tech refers to equipment and machinery for low-emission industrial applications.
²Other sectors include general manufacturing, pharmaceuticals, and process industries.

Defense is emerging as a new industrial lifeline. Europe’s military buildup is projected to generate more than \$900 billion in new spending from 2024 through 2029, an 83% increase. In the US, government goals call for 60% of defense-related goods and services to be sourced domestically. US spending is projected to increase by 11% from 2024 through 2029 on systems including manned and unmanned aircraft, land-based systems, naval vessels, and satellites.

Defense reindustrialization will create new opportunities across the industrial-tech spectrum. For suppliers, defense offers a chance to repurpose capabilities and excess capacity and secure long-term, high-margin, service-heavy contracts. Building technology providers can benefit as governments expand facilities and logistics infrastructure that require secure, energy-efficient, and technologically advanced building solutions.

The defense sector will also boost demand for advanced industrial-automation capabilities. Manufacturers of off-highway mobile machinery, for example, should explore opportunities to leverage existing platforms for defense applications that integrate AI-driven control systems, sensors, and global-positioning and global-navigation satellite systems. In addition, customization requirements for defense customers will increase demand for specialized machinery with complex components, such as five-axis, hybrid additive-subtractive machines.

To succeed, suppliers will often need to innovate more quickly and streamline product development, such as by adopting modular architectures and virtual prototyping. Companies not already established in the defense sector, however, must overcome steep hurdles. Tendering processes are lengthy and require high upfront costs. Industrial ecosystems are complex and require building new relationships. Certification requirements are strict. And supply chains for

critical equipment are a growing bottleneck: lead times for backup generators, for example, have stretched from months to years. To keep pace, operators and suppliers should move toward bulk purchasing, joint investments to achieve scale, and agreements that provide long-term visibility. They should also scale up investments and talent development. And they will need to build new relationships with clients and state-owned stakeholders.

Suppliers that succeed will benefit from stable, long-term demand. Caterpillar, for example, has a five-year, \$1.3 billion contract to supply construction equipment to the US Department of War. In Germany, the defense contractor Rheinmetall has repurposed former automotive plants for military production, and KNDS acquired a factory that it will repurpose to make military-vehicle components.

Data centers are becoming a major high-tech value pool. As recently as five years ago, data centers accounted for just 5% of the industry's growth. That share has now reached 15%. The sector is expected to keep growing over the next five years, fueled by rising demand for AI, the Internet of Things, and cloud storage. Data centers require a large range of industrial-tech products, which account for more than 10% of the build cost, or more than \$500 million per 500,000 square feet. (See Exhibit 3.)

Power generation equipment manufacturers will likely be prime beneficiaries. The immense electricity needs of data centers are already generating strong demand for on-site, distributed power solutions, such as modular turbines, renewable-energy systems, and hybrid backup systems. This is a space where power equipment manufacturers can secure long-term contracts through pilot microgrids and co-investment models.

Data centers also require climate control, cooling, and power management systems, a significant opportunity for building technology providers. Industrial-automation companies can meet data centers' needs for precision robotics, control systems, and sensor technologies. Industry leaders are already repositioning themselves to compete in this value pool. Ebm-papst, whose core businesses are fans and motors, is providing energy-efficient electronically commutated motor and digital airflow management systems for cooling data centers.

The rising electricity needs of data centers are also boosting demand for grid technology, such as transformers and switchgears, and new power generation capacity. In June 2025, Rolls-Royce announced it will double production of diesel backup generation units for the US market. Johnson Controls has made a significant investment in Accelsius, a specialist in advanced cooling solutions, while Schneider Electric is partnering with tech giant Nvidia to develop next-generation thermal-management systems for data centers. Honeywell and LS Electric are co-developing AI-driven power and energy storage solutions that regulate usage based on capacity, weather, and utility rates.

Infrastructure spending is surging. An estimated \$4.2 trillion in infrastructure investment is projected through 2029, representing a compound annual growth rate of more than 4%. Transportation projects will remain the largest value pool in Europe, with more than \$320 billion

in spending planned from 2024 through 2027, while investment in energy-related projects is expected to grow by 4.7% annually.

Infrastructure renewal will translate into stable and rising demand for industrial-tech suppliers, supported by long investment cycles, solid government support, and regional diversification. Building technology providers will see sustained demand for heating, ventilation, and air conditioning systems and for renewable-energy technologies, especially those that meet tightening energy efficiency standards and requirements for digital building management. There will also be robust demand for off-highway vehicles and other equipment.

Global construction machinery sales are forecast to increase by 5.6% per year through 2029, reaching \$400 billion. In the Netherlands, ABB has won a major contract from the water supply company Vitens to modernize around 200,000 input and output connectors at 250 sites. In the US, Siemens Energy has announced that it will employ 560 workers in North Carolina to manufacture power transformers to help modernize the electrical grid.

If our analysis teaches us one thing, it's that the industrial-tech market remains robust and rich with opportunities to drive growth. But winning in the evolving environment will require many companies to transform their go-to-market strategies, broaden their customer base, and place bets on new regional markets.

The customer universe for most industrial-tech suppliers is evolving from one that was simple and straightforward to one that is becoming more diverse and dynamic. Companies will increasingly need to tailor their business models and offerings to the needs of different sectors. Production cycles may remain long for traditional customers such as construction firms and vehicle manufacturers. But in the rapidly growing data center industry, customers may require delivery of large orders within months. The processes for winning contracts also vary by sector. To serve defense customers, for example, suppliers must meet the requirements not only of prime contractors but of defense ministries and procurement agencies in different nations as well.

Industrial-tech suppliers also need to take a differentiated approach to global markets. As more nations pursue industrial policies designed to promote strategic domestic industries, they must navigate different trade and investment rules, local sourcing requirements, and financial incentive schemes. In addition, suppliers must carefully weigh geopolitical concerns when choosing which markets to prioritize—and which technology-intensive products they can offer. And they will need the flexibility and agility to capture new opportunities created by future shifts in demand.

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