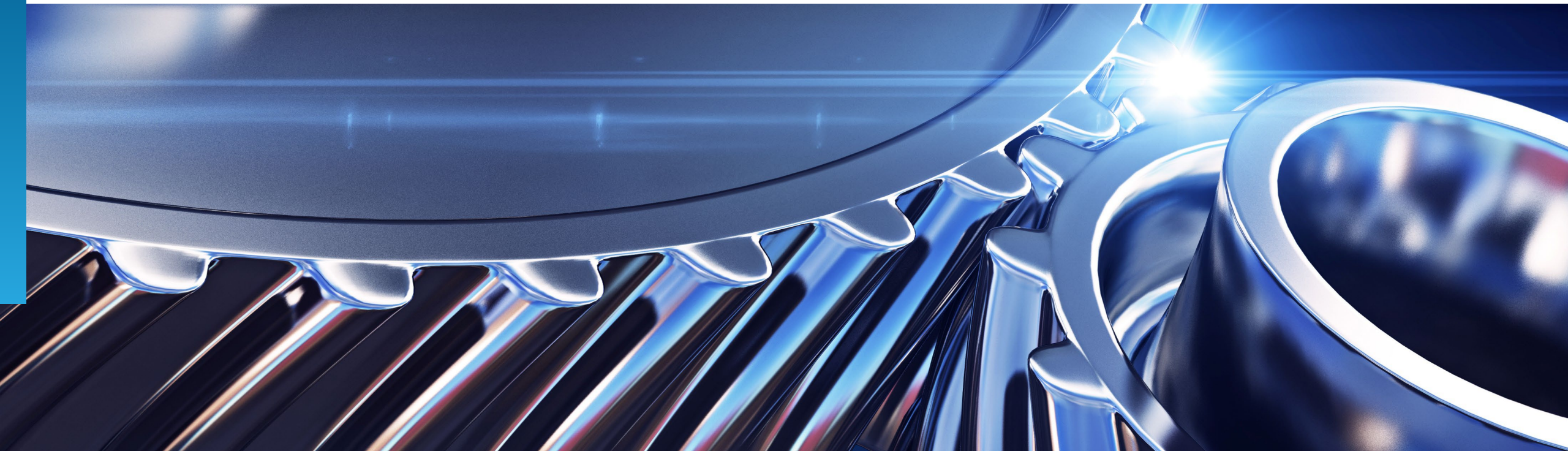


Leading the Pack: Trends for the Top 200 Engineering Research & Development (ER&D) Enterprises 2022

September 2022: Complimentary Abstract / Table of Contents



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Benchmarking

Contract assessment

Peer analysis

Market intelligence

Tracking: providers, locations, risk, technologies

Locations: costs, skills, sustainability, portfolios

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Background and scope of the research

- Global Engineering and R&D (ER&D) spending rebounded strongly in 2021 post the COVID-19-induced decline in 2020, with enterprises investing heavily in softwarization and in embedding digital technologies into their products to meet customer demand for smart and connected products
- This shift in consumer demand toward digital has compelled enterprises to quickly repivot their ER&D investments and product offerings toward software, while at the same time attempting to retain a competitive edge by not compromising on time-to-market
- This research was conducted for the top 200 ER&D enterprises, most of which (99%) fell into ten key verticals as mentioned below. The enterprises were analyzed by factoring in their ER&D spend growth trends and key investment areas for 2021
- This report captures the key investment areas of enterprises in 2021 across each of these ten verticals. The report also provides insights into ER&D spend intensity (ER&D spend as a percentage of revenue) for enterprises across these verticals
- The focus of this research is only on business-financed ER&D spend. It excludes non-ER&D spend (e.g., clinical ER&D expenditure in pharmaceuticals and biotechnology and molecular development ER&D expenditure in chemicals) as well as government-sponsored ER&D spend
- Enterprises that do not specifically report ER&D expenditure in their annual reports have been excluded from this analysis. Enterprises cutting across more than one industry have been featured under the industry where the proportion of ER&D spend is the highest

Scope of this report

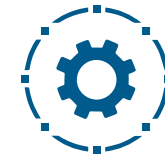


Geography
Global



Industry

Market trends across ten industries: software products & internet, automotive, consumer electronics, semiconductors, industrial products, Telecom Equipment Providers (TEPs), aerospace & defense, medical devices, compute & storage, and Telecom Service Providers (TSPs)



Services

Engineering services

Overview and abbreviated summary of key messages

In this research, we present a fact-based view of the global ER&D market, with a focus on the top 200 enterprises with the highest ER&D spend across 10 industry verticals. We also capture enterprises' key investment areas, ER&D spend growth, spend intensity (ER&D spend as a percentage of revenue), and prominent themes driving growth in the ER&D space

Some of the findings in this report, among others, are:

Enterprises spend

- The overall business ER&D spend in 2021 stood at US\$1.33 trillion, an increase of 5.55% from the previous year
- Enterprises in the ER&D top 200 list across the ten verticals spent US\$XXX billion on ER&D in 2021, an increase of 13.8% from 2020. The top 200 enterprises accounted for XX% of the total business ER&D spend
- Enterprises belonging to software products & internet vertical spent the highest on ER&D activities in 2021 (US\$219.76 billion), followed by enterprises from the automotive industry (US\$131.75 billion)
- The automotive vertical had the highest number of enterprises featuring in the ER&D top 200 list, followed by software products & internet. Consumer electronics and semiconductor verticals both had 25 enterprises in the top 200 list

Growth rate and spend intensity

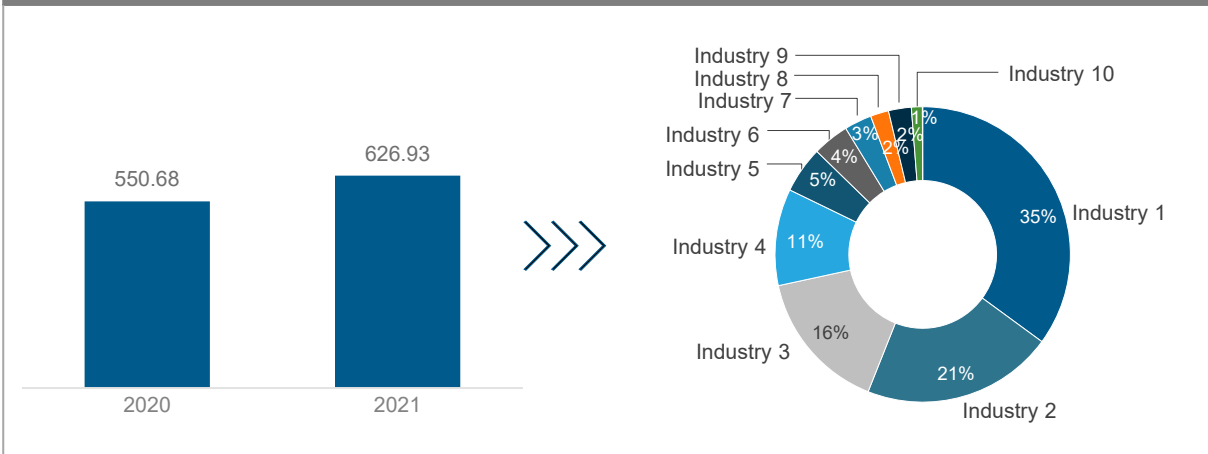
- In 2021, the software products & internet vertical recorded the highest ER&D spend with a year-on-year growth rate of 22.4%, the highest among all the industry verticals. The aerospace & defense vertical on the other hand continues to experience a steady decline in its ER&D spend as the effects of COVID-19 linger on
- The top 200 ER&D enterprises spent an average of 9.9% of their revenues on R&D. Enterprises from the software products & internet, TEPs, and semiconductor verticals had an R&D spend intensity of more than 13%, while enterprises from the TSP, automotive, and aerospace & defense verticals had a spend intensity of less than 6%

Investment themes

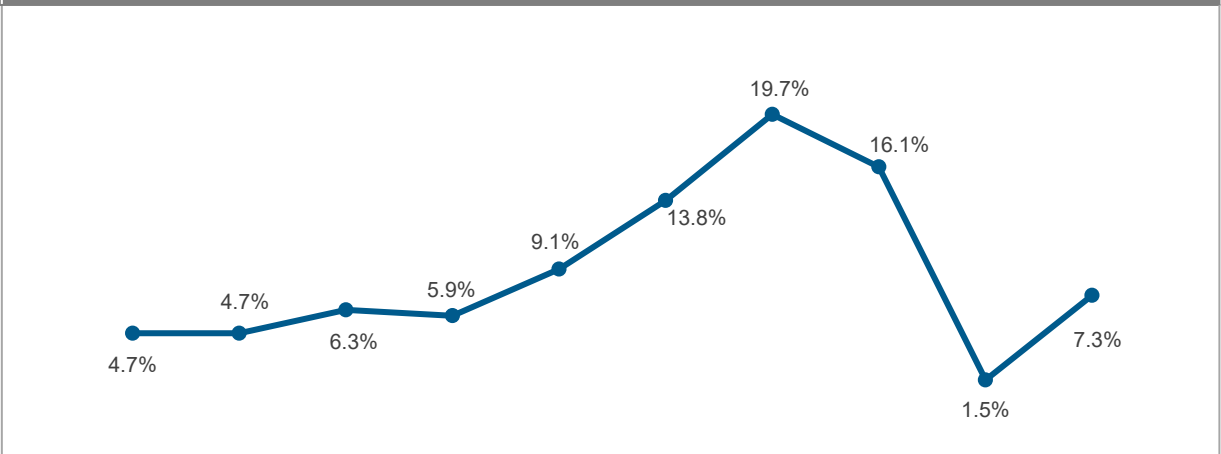
- Enterprises across the ten verticals increased their investments in digital technologies, such as AI/ML, IoT, cloud, cybersecurity, digital twins, and the metaverse, to develop next-generation products and improve customer experience. Spending on sustainability and carbon-neutral technologies have begun to emerge as important investment themes across industries

This report includes ER&D spend analysis along with insights on key investment priorities for enterprises across 10 key industries

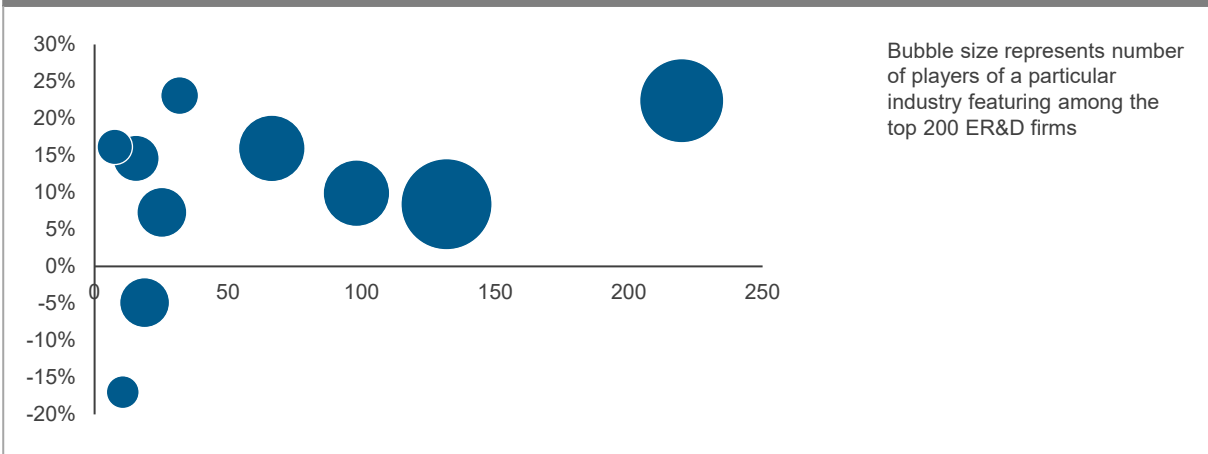
ER&D top 200 overview



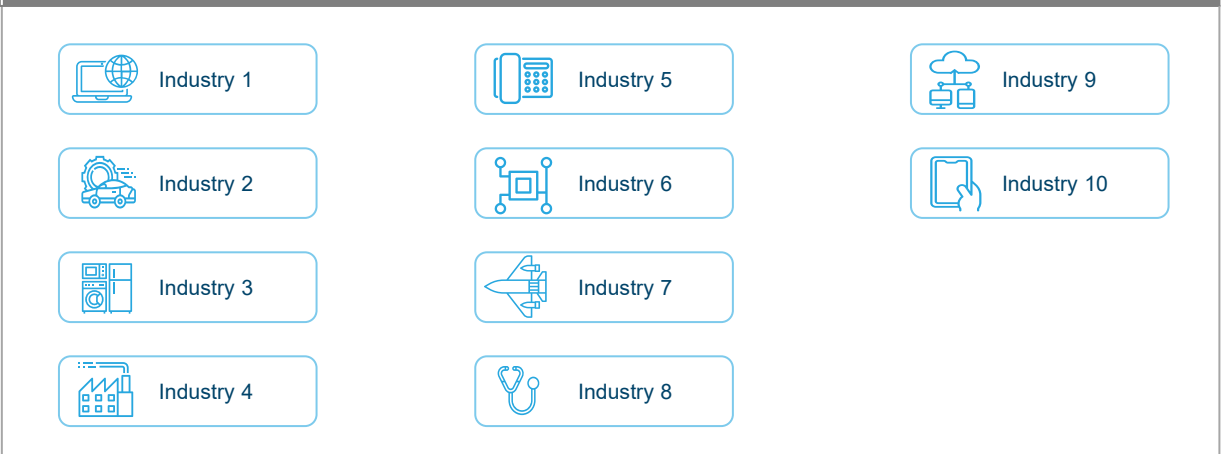
Spend intensity across verticals



ER&D YoY growth and spend snapshot by industry



Key ER&D investment priorities across industry verticals



Research calendar

Engineering services

■ Published
 ■ Planned
 ■ Current release

Reports title	Release date
Engineering R&D (ER&D) in 2022: Key Macroeconomic and Technological Trends that Will Shape the ER&D Industry in 2022	February 2022
Digital Product Engineering Services PEAK Matrix® Assessment 2022: Breaking the Chasm between the Physical and Digital Worlds	March 2022
Environmental, Social, Governance (ESG) Adoption in the Engineering Landscape	March 2022
Engineering Services Provider of the Year Awards 2022	March 2022
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Digital Product Engineering Service Provider Compendium 2022: Bridging the Chasm between the Physical and Digital Worlds	April 2022
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Digital Twin Services PEAK Matrix® Assessment 2022	July 2022
Leading the Pack: Trends for the Top 200 Engineering Research & Development (ER&D) Enterprises 2022	September 2022
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Connected Medical Devices PEAK Matrix® Assessment 2022	Q3 2022
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