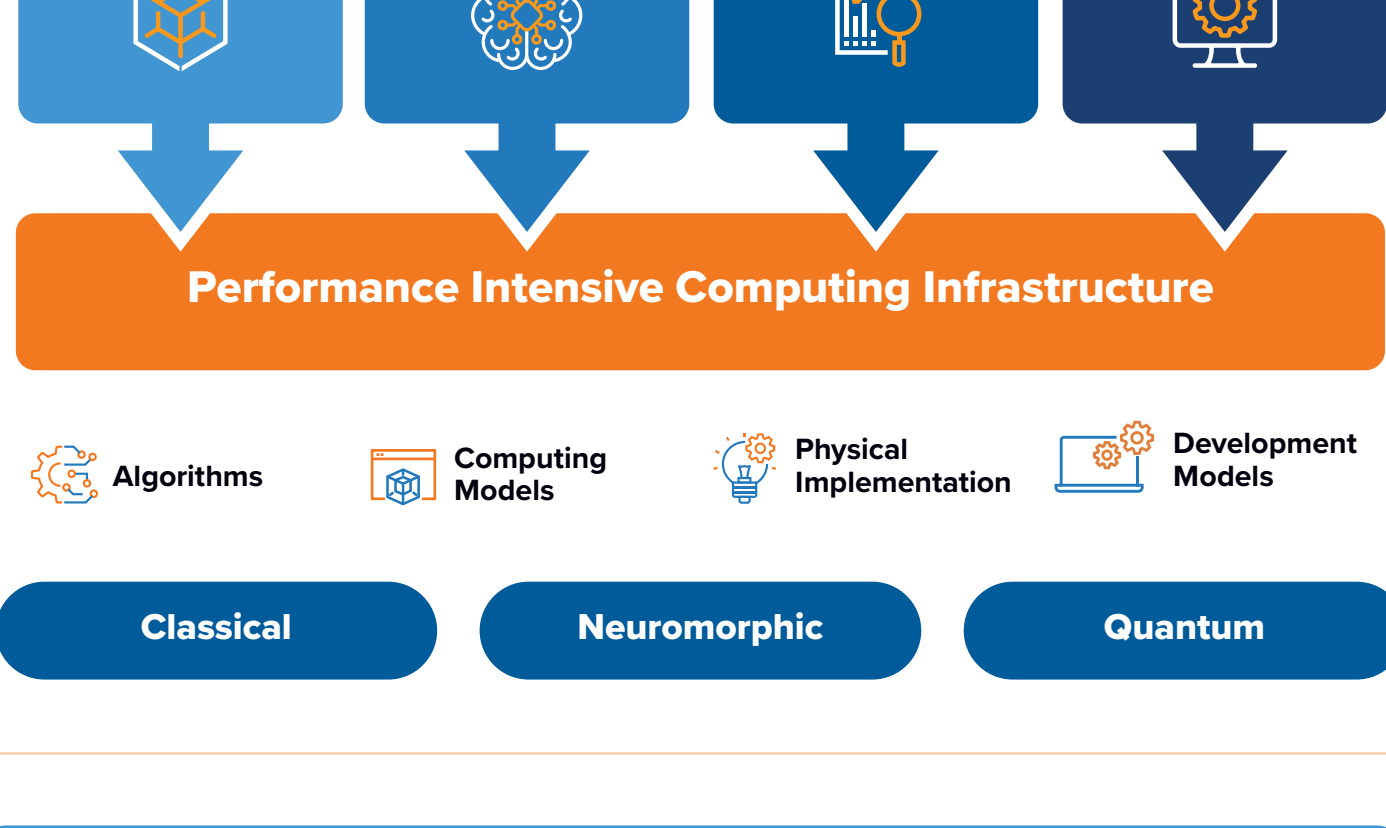




Data-Driven Insights Start with Performance Intensive Computing Infrastructure

Convergence of workloads for a common infrastructure



Modeling and Simulation (M&S)
Modeling and simulation use cases are diverse. Examples (across most industries) include real-time risk management in banking; asset liability matching in insurance; real-time, high-frequency trading in security and investment services; noise reduction studies in discrete manufacturing; and 3D models for drug discovery in healthcare, mechanical engineering, and fluid and mechanical dynamics simulations.

Artificial Intelligence
Examples of AI use cases include asset/fleet logistics and management, augmented claims processing in the insurance industry, augmented customer service agents across all industries, diagnosis and treatment in healthcare, expert shopping advisors and product recommendations in retail, and fraud analysis and investigation in banking.

Key business objectives: IT automation and improved operations coupled with critical business insights, energy efficiency, and security features

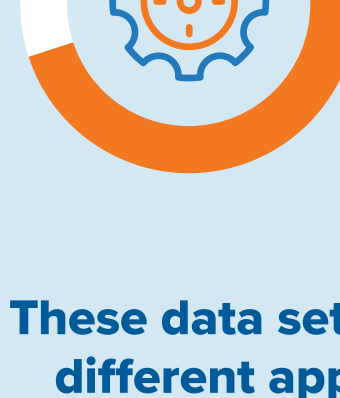
Big Data and Analytics (BDA)
Examples of BDA use cases (across most industries) include customer relationship analytics applications; end-user query, reporting, and analysis tools; enterprise performance management applications; production planning applications; and supply chain and product analytic applications.

Key business objectives: Improved business and market insights as well as better product development

Engineering and Technical Workloads (ETW)
Many engineering and scientific (technical computing) applications such as electronic design automation and computer-assisted design (CAD) benefit from an increase in compute-intensive infrastructure to get the job done meaningfully.

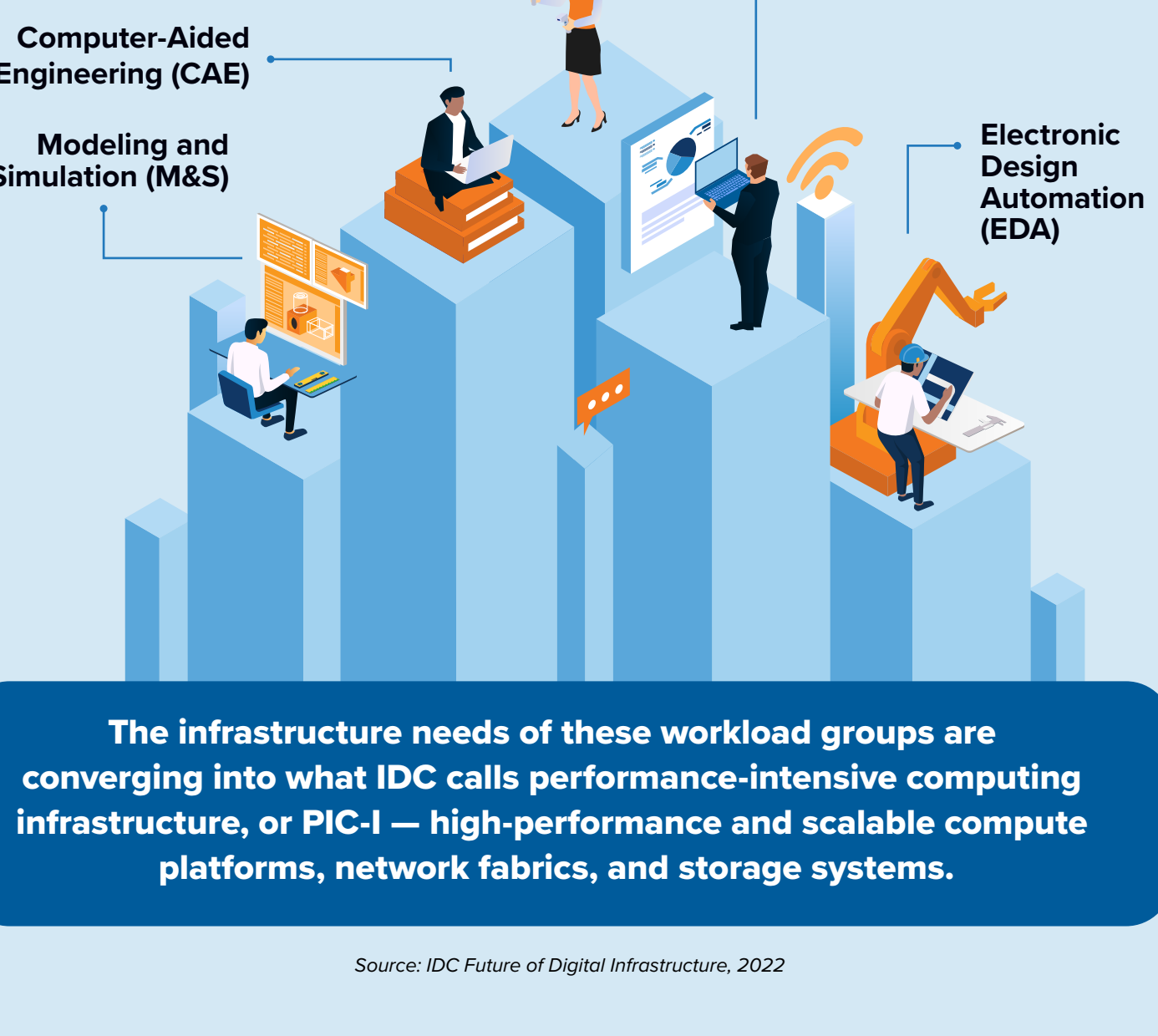
Key business objectives: Improved business operations, accelerated product development cycles, business automation and efficiency, and new and deep insights into customer behavior

New Data Sets Drive New Computing Infrastructure



By 2025 **70%** of companies will invest in alternative computing technologies to drive business differentiation by compressing time-to-value of insights from complex data sets.

These data sets will be sourced and analyzed by many different applications, including but not limited to:

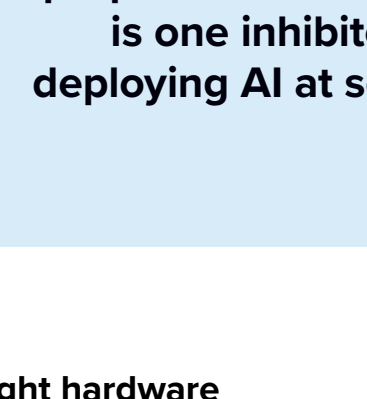


The infrastructure needs of these workload groups are converging into what IDC calls performance-intensive computing infrastructure, or PIC-I — high-performance and scalable compute platforms, network fabrics, and storage systems.

Source: IDC Future of Digital Infrastructure, 2022

Challenges of Getting to Performance-Intensive Computing Infrastructure

Some organizations are in advanced stages of PIC-I, others are just getting started.



For example, **33%** of organizations have reached a high level of maturity with AI.

Lack of proper infrastructure is one inhibitor to deploying AI at scale. Infrastructure is an often-misunderstood and underestimated part of the PIC workload stack—and a big reason why PIC projects fail.



Source: IDC Future of Digital Infrastructure, 2022

Reaching PIC-I: What's Needed

Investments in performance-intensive workloads must be more significant than those for corporate IT and other business applications. General-purpose infrastructure cannot get the job done.

The five areas organizations need to evaluate as part of a full-stack PIC-I strategy bear this out:

- Software technologies and platforms** that deliver base functionality for downstream app developments and bridge the gaps among developers, data scientists, and IT operations teams.
- Purpose-built infrastructure** that can scale performance to support the burgeoning compute and data-persistence requirements of the apps.
- Deployment locations for infrastructure** to enable ubiquitous consumption and insights across the entire organization.
- Security technologies built-in at the silicon level** that help organizations take a modern approach to decrease risks to important assets, mitigate malware, and protect against internal and physical attacks.
- Technology investments aligned to corporate ESG goals.** By deploying energy efficient architectures, IT helps achieve these goals while also meeting the needs of the business.

Message from the Sponsor

For more on how to build and maintain a modern performance-intensive computing infrastructure—including how Supermicro systems powered by AMD chips play a foundational role—download the IDC white paper, “The Power of Now: Gaining Deep and Timely Insights with Performance-Intensive Computing Infrastructure,” sponsored by Supermicro and AMD.

[Download White Paper here](#)