intel ai

Partner Guide:

Assessing Today's Enterprise AI Opportunity Landscape

Insights, tips, and resources to help fuel growth of your AI business

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The time is now to capitalize on your enterprise AI opportunity.

This guide, built exclusively for the partner ecosystem, highlights how to take advantage of today's AI opportunities in the enterprise space—across solutions providers, system integrators, device manufacturers, or software vendors.

As AI is explored, plans are built, and customers are engaged, the ongoing stream of insights, data, and suggestions can help uncover new business possibilities. Combining research from a variety of respected industry leaders and analysts, this guide will highlight how AI is being used, what customers are looking for to enable their success, and how to help them.

Additionally, this guide will detail the Intel® technologies and resources that can help support your efforts. The report will also share key insights and information about one of the most top-of-mind topics—generative AI.

Assessing today's enterprise AI opportunity landscape

Many enterprise organizations are in the early stages of their AI journey. As an Intel partner, there is a broad array of software and hardware resources—as well as the power of the Intel ecosystem—available to help enterprise customers streamline their efforts and accelerate time to value.

HOW AI IMPACTS THE BOTTOM LINE

Companies are realizing an **average ROI** of **3.5x**[1]

Top-performing organizations are seeing an **average return** of **8x**[1]

ROI is typically realized within **14 months of deployment**[1]

Generative AI continues its rapid evolution and proliferation

Generative AI solutions—such as ChatGPT, Bard, or DALL-E—are used to create a variety of content types in response to user prompts, including video, text, images, audio, or even computer code. The technology can also be applied to enable automated AI chatbots that, for example, facilitate more in-depth and fully featured engagements online.

The vast potential of generative AI has sparked the imaginations of people worldwide and accelerated awareness and adoption of the technology. A 2024 McKinsey Global survey on the current state of AI reveals that 65 percent of global executives report that their organizations are regularly using generative AI—which is nearly double the percentage from the survey conducted the previous year.[2]

The immense economic potential of generative AI

McKinsey research indicates that the most commonly reported generative AI adoption comes from three functions: marketing and sales, product and service development, and IT.[2] Across those areas and more, the productivity benefits of generative AI are poised to have a considerable economic impact:

$2.6 – $4.4
TRILLION
Potential value of generative AI to the worldwide economy[3]

15 – 40%
INCREASE
of overall AI value from generative AI[3]

60 – 70%
OF EMPLOYEE TIME
can be freed up for higher-value activities via generative AI and other technologies[3]

What are the most important AI use cases per industry?

Enterprises are pursuing many business-critical AI use cases beyond generative AI—including computer vision, machine learning, and deep learning. Generally, inferencing workloads are especially critical in the enterprise space.

> *In November 2023, **43%** of organizations planned to reduce spending in other areas to fund AI within 24 months*[1]

In a worldwide study conducted by Evans Data Corp, AI developers were asked to identify the most important use cases across a variety of industries. Their responses reveal top-of-mind AI applications that can help initiate customer conversations and develop your own AI offerings.

Many use cases appear repeatedly as top-priority applications throughout several industries. For instance, natural language processing is a top-three use case in accounting, automotive/transportation, banking and finance, government, healthcare, hospitality, and Internet and media. Security also stands out as a critical priority for customers in many sectors—coming in as the number one most important use case in accounting, aerospace/defense/military, government, and Internet and media. Image recognition systems also demonstrate a high degree of perceived importance across the industries surveyed.

Ranking the most important AI use cases by industry
Survey of AI developers[4]

	SECURITY	IMAGE RECOGNITION	NATURAL LANGUAGE PROCESSING (NLP)	CONTENT DISCOVERY	RECOMMENDATION ENGINES	SENTIMENT ANALYSIS
Accounting	1st	2nd	3rd	–	–	–
Aerospace and Defense	1st	3rd	–	2nd	–	–
Automotive/ Transportation	–	2nd	1st	–	3rd	–
Banking and Finance	1st	2nd	3rd (tied)	–	3rd (tied)	–
Energy	2nd	–	–	1st	3rd	–
Government (Non-Defense)	1st	3rd	2nd	–	–	–
Healthcare	–	1st	2nd	–	3rd	–
Hospitality	–	1st	2nd	–	–	3rd
Internet and Media	1st	–	2nd	3rd	–	–

KEY 1st 2nd 3rd

Industry spotlight:

Manufacturing

OBJECTIVES

- **Reduce downtime and enhance productivity**
- **Improve product design and manufacturing**
- **Proactively identify production or equipment failures**

From the plant floor to the board room, AI is helping manufacturers operate more efficiently and safely. Computer vision technologies bring transformative benefits to factory operations, allowing for more effective identification of product and equipment faults. AI-enriched demand prediction and AI-optimized logistics help ensure a seamless flow of goods, while digital twin simulations allow for virtual testing and design. Industrial organizations are also applying AI to enrich and personalize customer experiences.

Industry spotlight:

Financial Services

OBJECTIVES

- **Enhance customer experience**
- **Simplify processes**
- **Expand revenue possibilities**
- **Detect fraud**
- **Predict behavior and simulate market activity**

In both the front and back offices, AI is making a sizable impact in the financial services industry. Facial recognition and chatbots are being deployed to make the customer experience more convenient and frictionless. Machine learning techniques are helping fuel intelligent program advisors and recommendation systems. Essential workflows like claims processing are being automated. Meanwhile, AI-enabled threat intelligence, document processing, and fraud analysis tools work behind the scenes to spot anomalies and investigate any issues.

Cloud AI opportunities continue to grow

Running AI workloads in cloud environments, including Amazon Web Services, Google Cloud, or Microsoft Azure, helps enterprises access AI capabilities more quickly and cost-efficiently. These platforms have invested heavily in developing cloud AI platforms—giving customers a fast on-ramp to AI without spending large amounts on infrastructure and personnel. According to KBV Research, demand for cloud AI solutions is expected to grow as companies explore technologies such as machine learning and generative AI to help spark innovation and growth.[5]

As customers explore their cloud AI possibilities, they'll look towards the expertise of the Intel partner ecosystem to help navigate their options and maximize ROI. To deliver the right balance of price and performance for cloud AI workloads, use Intel® solutions such as Intel® Xeon® Scalable processors with built-in AI accelerators.

The chart below provides a look at the KBV Research projections for continued growth through 2029.[5]

GLOBAL CLOUD AI MARKET, 2023 - 2029, USD MILLION

	2023	2024	2025	2026	2027	2028	2029	CAGR % (2023–2029)
USD Million	$56,301	$76,474	$104,681	$144,439	$200,770	$281,038	$395,814	38%

Likewise, KBV Research predicts that demand for both cloud AI solutions and services will continue to grow through 2029.[5]

GLOBAL CLOUD AI MARKET BY TYPE, 2023 - 2029, USD MILLION

TYPE	2023	2024	2025	2026	2027	2028	2029	CAGR % (2023–2029)
Solutions (USD Million)	$36,236	$48,916	$66,537	$91,199	$125,889	$174,955	$244,625	38%
Services (USD Million)	$20,065	$27,558	$38,144	$53,240	$74,881	$106,083	$151,189	40%

Source: KBV Research and Secondary Research Analysis

Market insight: High growth rate industries for cloud AI

Looking forward at the potential growth of the cloud AI market, KBV Research shows significant compound annual growth rate (CAGR) for many industries through 2029[5]:

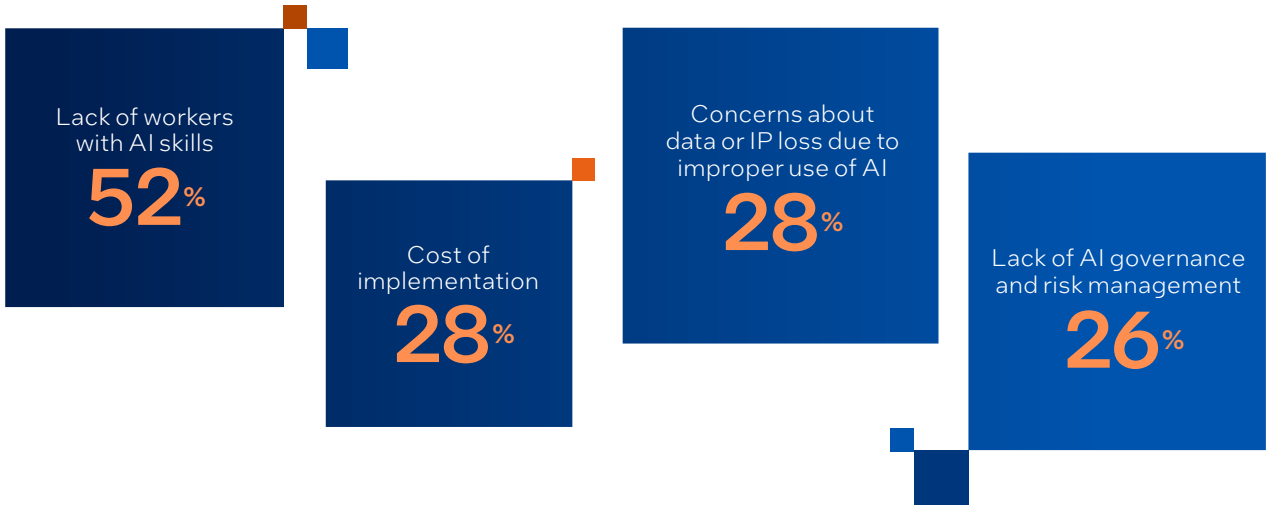
- Automotive and transportation 41.7%
- Manufacturing 40.1%
- Government 39.5%
- Healthcare and life sciences 39.3%
- Retail 38.9%
- Banking and financial services 37.6%
- IT and telecommunications 35.8%

Evaluating AI roadblocks

While AI adoption is becoming an increasingly critical priority,

customers still face significant challenges as they strive to develop, deploy, and operationalize new AI-driven solutions. A recent IDC survey explores the most common or expected AI implementation challenges, with a large portion of respondents indicating a lack of skilled workers as a critical roadblock.[1]

SURVEY RESULTS: AI IMPLEMENTATION CHALLENGES[1]
Percentage of participants indicating:



TOP-OF-MIND AI RISKS

According to McKinsey, **accuracy**, **compliance**, and **cybersecurity** are among the **top risks** considered relevant by executives when it comes to AI.[2]

Addressing customer challenges

Assessing customers' hardware requirements

As you work with customers to better understand their hardware needs, it's critical to identify what portion of their workloads will involve AI. If a customer is seeking to run AI alongside various other workloads, Intel® Xeon® Scalable processors can be used to support the diverse range of applications. On the other hand, if they're looking to run exclusively or mostly AI workloads, then you'll want to explore specialized hardware such as the Intel® Gaudi® AI accelerators.

AI is complex, and this complexity can create challenges

for enterprise businesses that are interested in deploying AI—especially as they look to use AI solutions from edge to cloud. Whether you're building solutions for customers or developing products internally, finding the right hardware and software tools will play an important role in your AI efforts.

At Intel, we've worked closely with our technology ecosystem and open source partners to help make solving the complex problems of AI simpler and less time-consuming for your team.

Hardware:

Right-size and optimize your investment

Our broad selection of AI hardware offers a plethora of options for an ideal balance of cost and performance—from lean, scalable edge inferencing to the most complex training or fine-tuning workloads running in HPC environments. Intel® Xeon® Scalable processors also feature integrated acceleration engines that improve performance for many AI workloads without the need for a discrete GPU, helping to increase the scalability and cost-efficiency of edge-to-cloud AI initiatives.

Software:

Enhance productivity and accelerate time to value

Rely on our comprehensive library of AI software tools, developer resources, and optimized data science frameworks and libraries to help simplify technology integration throughout all of your AI environments. This includes the Intel® oneAPI standards-based programming model, which allows developers to more easily deploy AI on different architectures or types of hardware, as well as enable optimizations for PyTorch, TensorFlow, scikit-learn, and more.

For better resource allocation and comprehensively connected operations, our edge-to-cloud portfolio provides a common platform for end-to-end AI operations. Support for containerization and cloudification helps unlock new levels of flexibility, agility, and efficiency.

Enhance security for AI workloads

From training to inference, AI initiatives present a range of security threats that you can help customers proactively protect themselves against. The shared data sets required for many model training projects introduce concerns around sensitive data privacy and control.

To help you address the new security realities of enterprise AI, Intel offers a portfolio of security features and capabilities, including:

- **Intel® Software Guard Extensions (Intel® SGX):** Unlock new opportunities for business collaboration and insights—even with sensitive or regulated data.
- **Intel® Trust Domain Extensions (Intel® TDX):** Increase confidentiality at the VM level, enhance privacy, and gain control over your data.
- **Intel® Trust Authority (now Intel® Tiber™ Trust Services):** Take confidential computing to the next level with a zero trust attestation SaaS that verifies the trustworthiness of compute assets at the network, edge, and in the cloud.

Roadmap for solution providers and system integrators

Many of your customers may be in the early stages of exploring how to harness the power of AI to transform their business. For organizations at the beginning of an AI journey or struggling to take AI initiatives to the next level, these early steps can help.

Connect AI to customer goals.

Brainstorm, discover, and assess: Help customers identify the business problems or areas of opportunity where AI can make a difference. Understand requirements and available tools for architects and DevOps teams.

Generalize insights: Translate and consolidate specific point-by-point challenges or opportunities into larger, more strategic objectives. This will help stakeholders unite under a common vision.

Prepare for the lifecycle: Create mechanisms that will help you and your customer assess and optimize system performance and ROI.

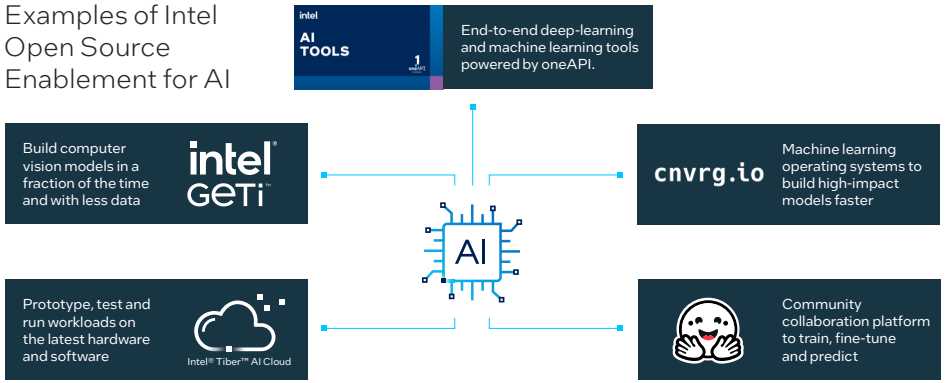
Help customers navigate the AI pipeline and deployment with maximum efficiency.

Differentiate workload requirements: Each stage of AI development introduces different compute needs. Take the time to help customers understand what is needed at each step.

Consider and select hardware: Help customers right-size hardware investment based on workload requirements and any existing hardware investments. Scalability, concurrent non-AI workload requirements, and performance considerations like latency and time-to-train are critical. Depending on requirement demands, customers may need GPUs or purpose-built AI accelerators. Customers running less-complex AI workloads can likely use CPUs alone—especially if they leverage Intel® Xeon® Scalable processors with integrated AI acceleration engines.

Enable development with open source: Use open tools, frameworks, and models to accelerate innovation, simplify development and data science, and speed time to market. This includes Intel® optimizations for popular data science frameworks such as the Intel® Extension for PyTorch.

Examples of Intel Open Source Enablement for AI



Enhance portability: Help customers take advantage of the oneAPI programming model and OpenVINO™ toolkit to better support heterogeneous AI environments with "write once, deploy anywhere" flexibility.

Support various model types: Architects and DevOps organizations will likely need to plan hardware and software platforms to accommodate a range of models—from small and nimble to massive ones with over one trillion parameters. The Intel® hardware portfolio provides the flexibility to operate the pipeline with all different-sized optimized performance and efficiency models.

Assessing end-to-end hardware needs for AI solutions

When it comes to AI hardware, both device manufacturers and solution providers need to deliver the right balance of cost and performance for their customers. The hardware requirements for any given AI solution varies based on factors including workload complexity, performance expectation, and deployment location. Various phases of the AI pipeline also introduce different computing needs.

There isn't a one-size-fits-all for AI. You can deliver incredible value to customers by helping identify the best solution for their business and operational challenges. To help determine the right fit for a customer's deployment or hardware offering, here are compiled guidelines that span today's high-priority AI use cases.

Click each box to get end-to-end AI hardware recommendations based on size, scale, and complexity:

Take advantage of integrated accelerator engines

To help optimize cost, performance, and energy consumption, Intel® Xeon® Scalable processors come equipped with integrated acceleration capabilities that make them well-suited for a number of AI-related tasks across the pipeline, from training to deployment.

Find out more about Intel® accelerator engines for AI:

- **Intel® Advanced Vector Extensions 512**: Accelerate classical machine learning
- **Intel® Advanced Matrix Extensions**: Accelerate deep learning training and inferencing workloads, including NLP

Intel® hardware for the AI pipeline

Insights for software developers

In a recent study of the software market, ABI Research provides advice and insights about how software developers can most effectively capture their emerging AI revenue opportunity.

Embrace the open source opportunity.
Open source models and tools can be used to underpin software offerings and MLOps platforms. These technologies can help accelerate development efforts, enhance interoperability, and ultimately drive revenue to support enterprise deployments. Intel has invested heavily in the open source community to help facilitate AI success and provide optimizations for popular open source machine and deep learning frameworks.

Maximize results at the edge.
ABI notes that software developers should keep the constraints of the edge in mind and work to optimize results within environmental requirements. According to ABI's research, computer vision at the edge will present the largest opportunity.[6] As organizations continue operationalizing AI and deploying it throughout their operations, AI at the edge will become even more critical. Intel offers a range of software resources that can help deliver outstanding results at the edge, including the Intel® Distribution of OpenVINO™ toolkit and readymade oneAPI toolkits.

Invest in low / no-code tools and services.
According to ABI's research, low / no-code options will increasingly become table stakes for enterprise deployment. Get ahead of the already increasing demand by implementing these development capabilities in your solutions. For example, the Intel® Geti™ platform for vision training can speed up model selection, training, and development in the cloud or on-premises, allowing flexibility for infrastructure choices. OpenVINO™ can then optimize the vision model and enable deployment anywhere from cloud to edge to client.

Remember you don't have to start from scratch.
Similar to how open source components help accelerate development, pre-built toolkits and reference deployments can shorten time to value, including the AI tools and the reference kits available from Intel.

Three enterprise trends
leading to the rapid expansion of the AI software market[6]

01

Trend: Rising use of computer vision

Benefit: Capabilities such as automation and real-time insights across verticals

02

Trend: Rapid expansion of generative AI

Benefit: Dramatic efficiency gains and operational improvements for many businesses

03

Trend: Widespread use of graph-based and tabulated AI models

Benefit: Sustained revenue opportunities across various business processes

Resources and success stories

Delivering responsible enterprise AI

Intel is committed to evolving best methods, principles, and tools to ensure responsible practices in AI product development and deployment. Intel collaborates with academia and industry partners to advance research in this area while also evolving platforms to make responsible AI solutions computationally tractable and efficient. Intel's mission is to help equip your enterprise AI customers with AI that delivers business results while being equitable and ethical.

Learn more about our approach to responsible AI ›

Test drive Intel® AI hardware and software

Many of the Intel® products and tools referenced in this report can be accessed using the **Intel® Tiber™ AI Cloud**. See first-hand how you can accelerate innovation for customers using Intel's end-to-end portfolio—from compute options to framework optimizations.

Access Intel® Tiber™ AI Cloud ›

Get started with AI resources from Intel

Intel Artificial Intelligence Solutions ›

Intel® AI Developer Zone ›

AI Use Cases ›

Intel® Partner Alliance: AI Activation Zones ›

Intel® Cloud TV: 5th Gen Intel® Xeon® Scalable Processors Overview ›

Intel® Cloud TV: Your GenAI Opportunity with Intel® Gaudi® AI Accelerators ›

Intel® Cloud TV: The AI PC Opportunity ›

Sources

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3. Chui, Michael et al., "The Economic Potential of Generative AI: The Next Productivity Frontier." McKinsey & Company, 14 June 2023, mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier - key-insights.
4. "AI & Machine Learning Survey Report," Evans Data Corporation, 2023.
5. "Artificial Intelligence (AI) Software," ABI Research.
6. "Global Cloud AI Market Analysis (2023-2029)," KBV Research, April 2023.

Use cases: How customers are achieving success with Intel

See how other Intel partners are applying Intel® technologies to simplify success for their offerings and customers.

Taboola Improves Content Recommendation Engines ›

See how Taboola increased application throughput for their prediction algorithm without sacrificing efficiency using Intel® Xeon® Scalable processors.

Numenta Delivers Powerful Inference Performance ›

Find out how Numenta collaborated with us on their neuroscience-based solution to help dramatically accelerate transformer networks.

Siemens Healthineers Boosts Image Processing ›

Learn how Siemens Healthineers speeds up the execution of AI models, lowers system cost and complexity, and reduces energy consumption.

RIKEN Accelerates Medical and Drug Research ›

Discover how RIKEN used Intel® Gaudi® technology for faster and more efficient deep learning training in healthcare and life sciences.