Forecast Analysis: Artificial Intelligence Services, 2023-2027, Worldwide

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Initiatives: Technology Market Essentials

> By 2027, the market for artificial intelligence services will reach $443 billion. AI services will be the dominant growth driver in the IT services market, at 16.9% five-year-CAGR. Both classic and generative AI demonstrate opportunities to create new sources of client value.

Overview

Forecast Assumptions

- From 2023, investment in generative AI (GenAI) will impact IT spending on consulting by increasing the demand for key segments — namely business operations, marketing and customer management, and enterprise strategy and governance.

- By 2027, attacks leveraging GenAI will cause 35% of new application management services contracts to feature governance and security to handle an increase in alerts, thus requiring more — not less — human response.

- From 2024, the emergence of practical, industry-specific use cases for generative AI will increase demand for services aimed at helping buyers increase their agility and operational efficiency at scale.

Market Impacts

- In 2023, classic AI will comprise 98% of AI services spending in 2023, while generative AI is 2% of the AI services spend.

- Rapid technical change makes employing IT professional services more economical for end users than retraining their internal staff. The shortage of AI skills in the market remains an opportunity for increased demand for AI services. However, many enterprise organizations are focused on internal development and will require coaching to understand the value proposition of working with service providers.

- By 2025, core to the AI services opportunity in future years will be the cleanliness of data and the ability to establish an information architecture that enables models.

Notable Changes

This document provides initial estimates of the revenue size and the associated five-year compound annual growth rate (CAGR) for the AI services market. This new forecast includes additive spend on new projects as the rise of generative AI brings additional opportunity to the services market. This forecast also provides additional insight into the spend on broader AI services that have already been included in past Gartner IT services forecasts.

AI services are defined as the application of business and technical expertise to enable enterprises to create, access, manage, optimize, and govern advanced analysis and logic-based techniques to interpret events, make decisions, and enable business outcomes and experiences. These services are delivered via an external service provider and may include strategy, data engineering, model development and testing, operations, and governance across a wide variety of AI technologies, including both symbolic and machine learning constructs.

It is important to note that this forecast reflects a subset of the spending from Forecast: IT Services, Worldwide, 2021-2027, 3Q23 Update. This forecast should not be considered additive to the spending estimates included in the quarterly forecast. Instead, it is intended to provide additional granularity into the opportunity that AI and GenAI services will represent in the overall IT services space.

For more details about the Forecast methodology used to create Forecast: IT Services, Worldwide, 2021-2027, 3Q23 Update, see Market Definitions and Methodology: IT Services. For more details about the definitions of AI technology approaches, see Emerging Tech: The Key Technology Approaches That Define Generative AI.

Russian Invasion of Ukraine

In response to the Russian invasion of Ukraine that began on 24 February 2022 and was ongoing at the time of this publication, Gartner is suspending market coverage of Russia and the Eurasia region. The definition of the Rest of Eastern Europe has been expanded to include Russia and the countries previously covered in the Rest of Eurasia.

Exchange Rate Alert

In the current environment, currency exchange rate fluctuations will be more volatile. Foundational factors, such as interest rates, tariffs and economic sanctions, changed more rapidly and with less predictability throughout 2022, and the expectation is that this will continue throughout 2023. For the near term, expectations for exchange rates should be treated with a heightened level of caution.

Forecast Data Summary

This document was revised on 11 October 2023. For more information, see the Corrections page on gartner.com.

Following two years of double-digit constant currency growth (10.6% in 2021 and 13.9% in 2022) in IT services, stakeholder expectations for growth in 2023 have remained high, while demand has softened to 7.3%, closer to historical growth rates. Service providers have been pressured to find the "white space," high-growth opportunities for investment and sales campaigns to try to achieve similar growth rates to the past two years. Enter GenAI, with its hype and pressure on business leaders and CIOs to take action.

In 2023, service providers are already working with clients on exploring generative AI use cases and developing proofs of value. Service providers are also developing their own GenAI solutions and testing in their own environments. However, 2023 is the year of pause and pivot for business and technology executives (see 2023 CEO Survey — The Pause and Pivot Year). While economic headwinds and uncertainty have contributed to the instinct to pause, 2023 has also been about pivoting to take advantage of emerging and often unexpected growth opportunities.

After three years of constant crises and current economic fatigue, budgets and approvals are being withheld, leaving business and technology executives with the chance to make more deliberate choices about technology spend. This pause and pivot is manifesting in more careful consideration about how to use AI in general — and generative AI specifically — rather than full-scale spend and adoption, particularly of AI services.
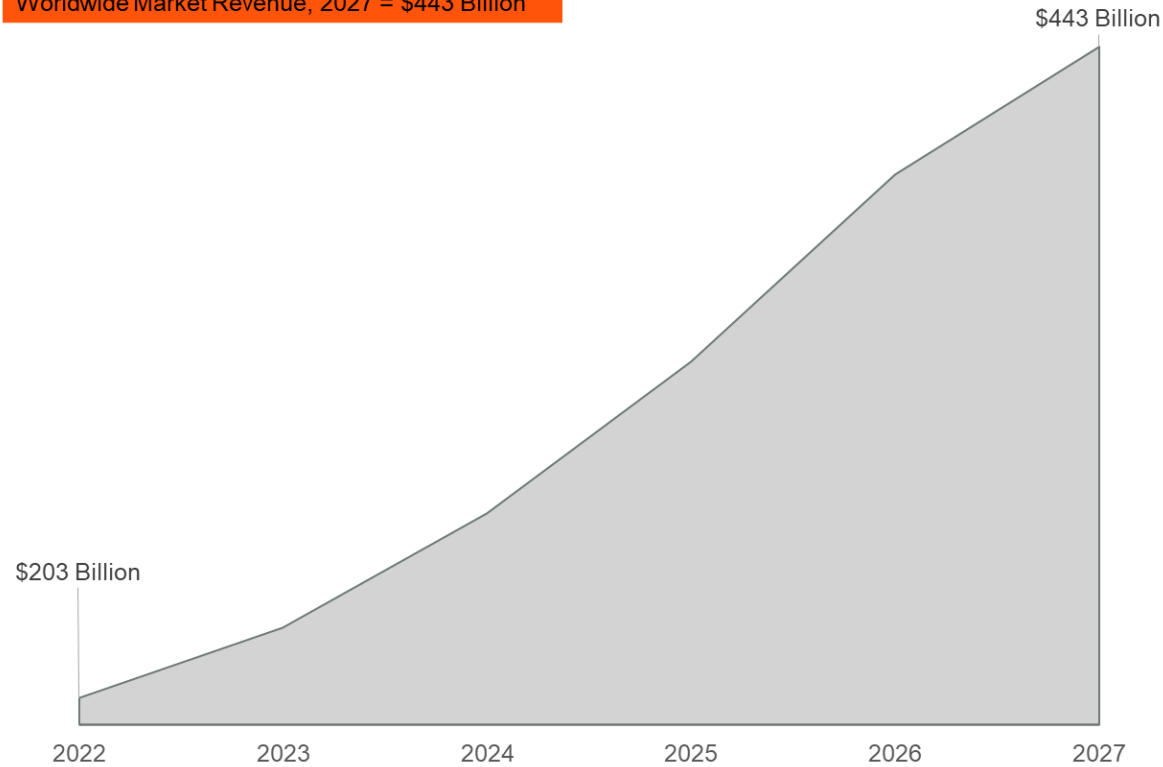
Thus, in 2023, spend on AI services has been mostly substitutive to other projects now-delayed, contributing $3.5 billion, or less than half a percent, to overall services spend. Gartner expects this to shift in 2024 and 2025, where strategic POVs and initial design pilots, specifically around generative AI, will become more of a growth driver for the market. However, in order to capture this demand, service providers must demonstrate an ability to move away from optimization use cases and instead tie AI to areas of client revenue creation, as well as create opportunities to use AI at scale.

Service providers must demonstrate they can work with their clients to ensure AI takes actions — rather than simply prompting or automating — to go beyond incremental value for clients and thus truly expand the services market opportunity. Figure 1 and Table 1 demonstrate Gartner's expected market growth for AI services.

Figure 1: AI Services End-User Spending, Worldwide

AI Services End-User Spending, Worldwide

Five-Year Market Growth = $240 Billion (CAGR 16.9%)

Worldwide Market Revenue, 2027 = $443 Billion

$443 Billion

$203 Billion

2022　　2023　　2024　　2025　　2026　　2027

Source: Gartner (October 2023)
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Table 1: AI Services Forecast Worldwide, 2023-2027 (in Millions of Dollars)

Type of AI Service ↓	2023 ↓	2024 ↓	2025 ↓	2026 ↓	2027 ↓	CAGR ↓
Classic AI Services	225,299	255,016	275,208	278,620	257,920	4-Year 3.4%
Generative AI Services	3,500	16,296	51,542	117,706	185,187	4-Year 169.7%

Source: Gartner (September 2023)

Full List of Forecast Assumptions

- From 2023, investment in generative AI (GenAI) will impact IT spending on consulting by increasing the demand for key segments — namely business operations, marketing and customer management, and enterprise strategy and governance.

- From 2024, the emergence of practical, industry-specific use cases for generative AI will increase demand for services aimed at helping buyers increase their agility and operational efficiency at scale.

- From 2024, established use cases and best practices leveraging GenAI will include code generation and autocompletion (including natural language processing [NLP] interfaces, code review and documentation, test case generation, security testing, and version control/collaboration.

- By 2027, 90% of service providers will use GenAI for software development services, including code compiling and optimization, automated debugging and automated quality assurance (QA) testing, up from 26% in 2023.

- By 2027, 35% of new applications will use AI to drive personalized adaptive user interfaces, up from under 5% today.

- By 2027, attacks leveraging generative AI will cause 35% of new application management services contracts to feature governance and security to handle an increase in alerts, thus requiring more — not less — human response.

- By 2027, automation, machine customers, and new immersive experiences will drive a 58% increase in the number of interactions (to 19.4 billion) serviced in customer management business process services (CM-BPS). This increased use of automation will reduce the average price per interaction by 14%.

Full List of Market Impacts

In 2023:

- Economic fatigue is creating a dynamic where investment in AI services in 2023 is coming from budgets redirected from other spending. It is substitutive, rather than additive, to new services spending.

- Services spending will increase as executive and technical leaders determine the best use cases for adoption and have stronger trust in the data in and out of their models.

- Rapid technical change makes employing IT professional services more economical for end users than retraining their internal staff. The shortage of AI skills in the market remains an opportunity for increased demand for AI services. However, many enterprise organizations are focused on internal development and will require coaching to understand the value proposition of working with service providers.

- Early spending on use cases for AI services is focused on human augmentation and optimization, for example, error detection, task automation, productivity enhancements, customer service, and decision support.

- Consulting spend in the near term focuses on proofs of value (POVs) and early application of AI governance.

- Classic AI will comprise 98% of AI services spending in 2023, while generative AI is 2% of the AI services spend.

In 2024-2025:

- Core to the AI services opportunity in future years will be the cleanliness of data and the ability to establish an information architecture that enables models. This reality presents significant near-term opportunities for services accelerators that enable knowledge engineering, retrieval, and contextualization based on the business outcomes clients are seeking to achieve.

- The need to scale and govern AI will create near-term opportunities for service providers to operationalize machine learning (MLOps) for foundational and domain-specific models.

- Advances in generative AI will result in faster, less expensive and more holistic delivery of applications services. This will drive outcomes to a far wider array of previously unaddressable business processes, operating models, industry value chains, and user stakeholder experiences.

- While CM BPS will experience fewer, "live agent" interactions, the interactions that are serviced by humans will be more complex, require additional agent skills, and become more expensive.

By 2027:

- Rapid uptake of generative AI will lead to it comprising 42% of the AI services spend by 2027.

- As AI technology, particularly generative AI, continues to mature, use cases for AI services will evolve closer to revenue-generating activities like materials design, discovery (e.g., accelerate R&D in healthcare and life sciences, enable predictive maintenance and drive e-discovery), and creation and innovation of intelligent experiences.

- Midterm to long-term consultative opportunities will expand governance to regulatory and ethical advisory and create new projects around the monetization of AI for client organizations. This advisory includes designing and accelerating client initiatives focused on external monetization of generative AI capabilities, using enterprise/client internal data and organizational knowledge.

Industry-Specific AI Services Opportunities

AI is applied in vertical areas to address industry-specific problems. In some cases, these are for competitive differentiation; in others, the methods are common to a sector. Each industry demonstrates significant growth opportunities in AI services over the next five years, with CAGRs from 14.2% to 21.7%, as depicted in Figure 2.

Figure 2: AI Services Industry CAGRs (2022-2027) Heatmap

AI Services Industry CAGRs (2022-2027) Heatmap

2022-2027 CAGR	App Svcs	BPS	Cons	IaaS	Infra Svcs	All AI Services
Banking and Investment Services	14.3%	27.8%	15.1%	34.7%	9.1%	**16.6%**
Communications Media and Services	15.4%	32.6%	15.9%	32.4%	10.7%	**18.8%**
Education	16.7%	32.6%	18.8%	29.9%	11.4%	**18.7%**
Government	13.9%	29.7%	14.8%	25.8%	7.7%	**14.2%**
Healthcare and Life Sciences	13.3%	26.9%	16.4%	29.5%	8.2%	**16.0%**
Insurance	16.2%	31.1%	16.1%	31.5%	8.9%	**17.3%**
Manufacturing and Natural Resources	16.2%	32.5%	16.2%	30.1%	11.3%	**17.0%**
Oil and Gas	21.0%	42.7%	21.3%	33.5%	14.2%	**21.7%**
Power and Utilities	21.8%	38.3%	21.5%	35.9%	10.1%	**20.9%**
Retail	13.0%	29.3%	10.9%	33.2%	10.3%	**16.6%**
Transportation	16.1%	34.9%	15.7%	31.8%	11.4%	**18.7%**
Wholesale Trade	12.9%	31.2%	15.9%	31.7%	8.0%	**15.7%**
Global	**15.1%**	**30.4%**	**15.7%**	**31.5%**	**9.6%**	**16.9%**

Note: App Svcs = Application Implementation and Managed Services
BPS = Business Process Services
Cons = Consulting
IaaS = Infrastructure as a Services
Infra Svcs = Infrastructure Implementation and Managed Services

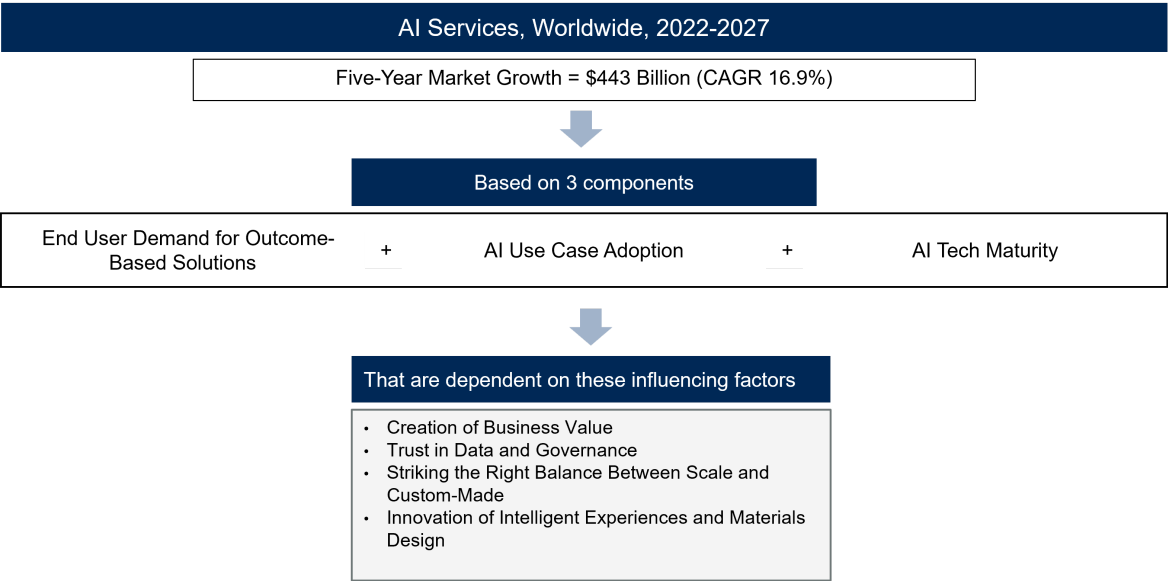|	
☐	Single-Digit Growth (0-10%)
☐	Moderate Growth (10-20%)
☐	High Growth (>20%)

Source: Gartner (October 2023)

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Forecast Model Summary

See Figure 3 for a summary of the forecast model.

Figure 3: Market Model AI Services Market Forecast

Market Model for AI Services Worldwide

AI Services, Worldwide, 2022-2027
Five-Year Market Growth = $443 Billion (CAGR 16.9%)

↓

Based on 3 components

End User Demand for Outcome-Based Solutions	+	AI Use Case Adoption	+	AI Tech Maturity

↓

That are dependent on these influencing factors

- Creation of Business Value
- Trust in Data and Governance
- Striking the Right Balance Between Scale and Custom-Made
- Innovation of Intelligent Experiences and Materials Design

Source: Gartner (October 2023)
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In the AI services forecast, we look at relevant AI use cases, sourced from Gartner's AI use case prisms, and make assumptions on how these business use cases are prioritized based on organizations' varying AI maturity levels, business value, and ROI.

- **Use case adoption** — Organizations selecting use cases must balance the level of risk (technical, data and organizational), the timing of financial impact, and the business value of each use case. The use cases are aggregated into six clusters, and then these clusters are mapped to AI maturity levels for the growth calculations.

- **AI maturity** — Organizations prioritize the use cases differently depending on their own AI maturity. Lower maturity organizations focus more on time to value, along with lower risk. More mature organizations focus broadly on lower risk and higher business value. The riskiest use cases are usually only attempted by the most mature organizations. Organizations were assigned to an AI maturity distribution based on their vertical market and geographical region.

- **Firmographics** — Gartner's model includes firmographic information, which gives the number of organizations worldwide by region, company size and industry. This helps quantify the amount of overall spending on services.

Each use case deployment is split into Strategize, Design, Build and Run stages. The services segments are mapped to the appropriate deployment stages and the services forecast is generated from the quantity of deployments at each stage.

Influencing Factors and Assumptions

Influencing Factor: Creation of Business Value

Like all technologies, AI is a means to a client's business outcome, not the outcome itself. In order for enterprise organizations to continue to invest in AI, they must deliver upon the outcomes and ROI expected of it. In particular, in a landscape where digital transformation has not lived up to its promise, enterprise CFOs are requiring stronger business cases for investment.

The pressure on client technical and executive leaders to effectively leverage AI, and in particular generative AI, continues to mount. By the end of 2024, these leaders must be able to demonstrate that they have successfully brought an AI project into production and that this project has, minimally, delivered a productivity or efficiency gain. While Gartner has identified more than 800 use cases for generative AI, specifically, demonstrable outcomes and results are still nascent at best.

This is where client executives need services providers to help them succeed, enabling them to choose use cases that will create and accelerate the realization of business value and ensure that AI takes actions to go beyond incremental value.

Efficiency > productivity > improvement > transformation. Service providers that can pivot client organization to move past efficiency gains into reimaged businesses with autonomous actions will create business value. Pairing this new business value with transformation that is operationally cost-effective and sustainable will allow services providers to win the bulk of the AI opportunity.

Influencing Factor: Trust in Data and Governance

As business and technical leaders embark upon their AI journey, their information architecture is a significant point of friction that can delay the outcomes they seek to achieve. Specific challenges and resulting risks include:

- **A production-first mentality** — Where enterprises focus on getting their AI models into production. Ensuring the veracity of the decisions made from the model and building trust and risk management into the AI life cycles is an afterthought.

- **Poor data structure, quality and management** — Where an organization's own and/or purchased data in its current format is not good enough to use for its models.

- **Poor data governance** — Where an organization fails to consider data privacy, misuse, and sovereignty issues.

- **Lack of security** — Where an organization might see malicious data poisoning intended to derange models or where malware that is AI-augmented may amplify its ability to scale. Security models and resources will need a new paradigm to tackle this more comprehensive threat.

- **Increased complexity** — As AI increasingly creates complexity in data and models, this complexity will need to be managed to optimize cost and use efficiency.

- **Data diversity** — Where recursive data from broadly used models creates a risk of recirculated data and creates homogeneity, rather than competitive differentiation, in the market.

Success and scaling of AI projects require business and technical leaders to address strategies and methods related to fairness, equity, transparency, explainability, reliability, sustainability, privacy and security. These risks can be addressed by service providers working alongside clients to identify, prioritize, and mitigate the risks, creating an opportunity for growth in the AI services market.

Influencing Factor: Striking the Right Balance Between Scale and Custom-Made

As business and executive leaders continue to demand solutions that lead to specific outcomes, the opportunity for AI services will continue to increase. Across AI services, this increase is dependent on several factors:

- **The value of people** — That AI will continue to need a human in the loop.

- **The business applicability of commercial off-the-shelf (COTS) solutions** — That COTS or client-created AI models will need service providers to help ideate, build, iterate, and enable culturalization to create business value.

- **The value of fit-to-purpose** — That models will need to be domain-specific, focused on industry, function, or outcome to increase their effectiveness.

- **The ability to compose a rightsized solution** — That sustainability of AI models will require consistent mindfulness and governance of infrastructure, data acquisition, operational overhead, model training, and return on investment at scale.

- **The interoperability of AI systems** — Integration with other technologies and platforms is essential for the long-term viability of any technology.

- **The technical advancements in AI** — As AI continues to mature, skills, model training, and integrations may require updates on cadence to remain feasible and competitive.

- **Customizations** — Where customized large language model (LLM) integration is a focus, especially in businesses whose proprietary data singularly requires a unique model.

Where service providers have an advantage with scalability and skill, clients will need custom-made solutions, and the AI services market will continue to grow.

Influencing Factor: Innovation of Intelligent Experiences and Materials Design

As value drivers for AI go beyond incremental cost reduction and revenue gain, businesses that seek to lead with technology will focus on AI as a means to build immersive and/or intelligent business experiences. Use case adoption will shift to experiences that build brand equity, increase speed, enable value chain integration, and build new stakeholder experiences, including customer, partner, supplier, "thing," and human experiences. These experiences have been previously unaddressable corner cases due to scale of reach, but with the opportunity to create new sources of growth.

In addition, acceleration of discovery and innovation — especially in areas like material sciences/engineering, physical/creative design, 3D printing, factory layouts, mine design, fashion, consumer goods, cosmetics,and chemistry — allows enterprises to move beyond mere productivity.

Businesses that lead with technology seek relationships with providers that can help them discover and accelerate this innovation. As the technology matures, enabling the opportunity to move from LLMs to large multi-models ("LxMs"), the integration of multimodal AI models (language, voice, text, image, and video) will become paramount to enable intelligent business experience. This complexity and the need for the innovation experiences to result in a critical business outcome will particularly drive advisory, design, and implementation services, creating demand in the outer years of this AI services forecast.

Acronym Key and Glossary Terms

AI services	The application of business and technical expertise to enable enterprises to create, access, manage, optimize, and govern advanced analysis and logic-based techniques to interpret events, make decisions, and enable business outcomes and experiences. These services are delivered via an external service provider and may include strategy, data engineering, model development and testing, operations, and governance across a wide variety of AI technologies, including both symbolic and machine learning constructs.
classic AI	Classical, or symbolic, AI is semantic and rule-based, whereas machine learning uses mathematical and probabilistic constructs.
machine learning AI	Machine learning breaks down further into classification AI, predictive AI, and generative AI. Classification AI recognizes patterns to identify something (for example, pixel patterns that identify a dog in an image). Predictive AI formulates future trends based on statistical patterns in historical data. Generative AI technologies can generate new derived versions of content, strategies, designs and methods by learning from large repositories of original source content. GenAI has profound impacts on business, including content discovery, creation, authenticity, and regulations, automation of human work, and the customer and employee experience.
generative AI (GenAI)	Generative AI, like other AI approaches, employs many fundamental AI techniques, such as deep learning, foundation models, large language models (LLMs) and transformer architectures. But a set of five AI technology approaches differentiate GenAI from other approaches to AI: diffusion models, variational autoencoders (VAEs), autoregressive generative models, multiagent generative (MAG) systems, and generative adversarial networks (GANs).

Evidence

This AI services forecast is a composite that forms an overlay across Gartner's existing IT services market forecast incorporating AI components. From this initial starting point, a use case growth model is applied that illustrates the demand for AI technologies based on how organizations of varying AI maturity levels adopt use cases.

The order in which organizations adopt use cases depends on their AI maturity, and three scores attached to each use case: business value, feasibility and time to ROI are applied. Lower-maturity organizations tend to focus on higher feasibility and faster ROI, while organizations with more advanced maturity approach more challenging and long-term ROI use cases. Organizational variations in maturity, industry and region are also considered.

Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

Forecast: IT Services, Worldwide, 2021-2027, 3Q23 Update

Market Share Analysis: IT Services, Worldwide, 2022

Top 3 Generative AI Trends Impacting IT Services

Emerging Tech: Emergence Cycle for Generative AI

Applying AI — Industries

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