Use-Case Prisms for Generative AI: A Guide to Emerging Opportunities in Industries

ARCHIVED 26 September 2023 - ID G00799798 - 5 min read

By: Jeff Cribbs, Moutusi Sau

Initiatives:Manufacturing and Transportation Industry Technology Insights; Communications Industry Technology Insights; Education Technology Insights; Healthcare Provider, Payer and Life Science Industries Ecosystem; Multi-Industry Technology Insights and Collections; Retail Industry Technology Insights

Gartner's generative AI prisms define use cases and assess their value and feasibility to foster strategic planning. Technology leaders can use this collection of 16 prisms, containing 294 industry-specific GenAI use cases, to sharpen their view on the enterprise value of this emerging technology.

Newer version of this document

23 September 2024 Use-Case Comparison for Generative AI: A CIO's Guide to Emerging Opportunities in 14 Industries

Additional Perspectives

- Summary Translation: Use-Case Prisms for Generative AI: A Guide to Emerging Opportunities in Industries (09 January 2024)

Analysis

Technology leaders spent the early months of 2023 understanding basic capabilities of generative AI, including its potential opportunities and risks, along with the governance decisions their organizations need to make. Now, Gartner client interactions indicate that these strategic planning conversations are quickly becoming much more practical, with a focus on specific use cases. Executives want to understand exactly how a generative AI use case can deliver new value in the processes and language of their industry and sector. They need an objective assessment of the feasibility of deploying generative AI use cases in this early stage.

This research will help you, as a technology leader, prioritize the generative AI investments that compete for the same funding and attention among multidisciplinary teams of technologists, business executives and industry-specific domain leaders.

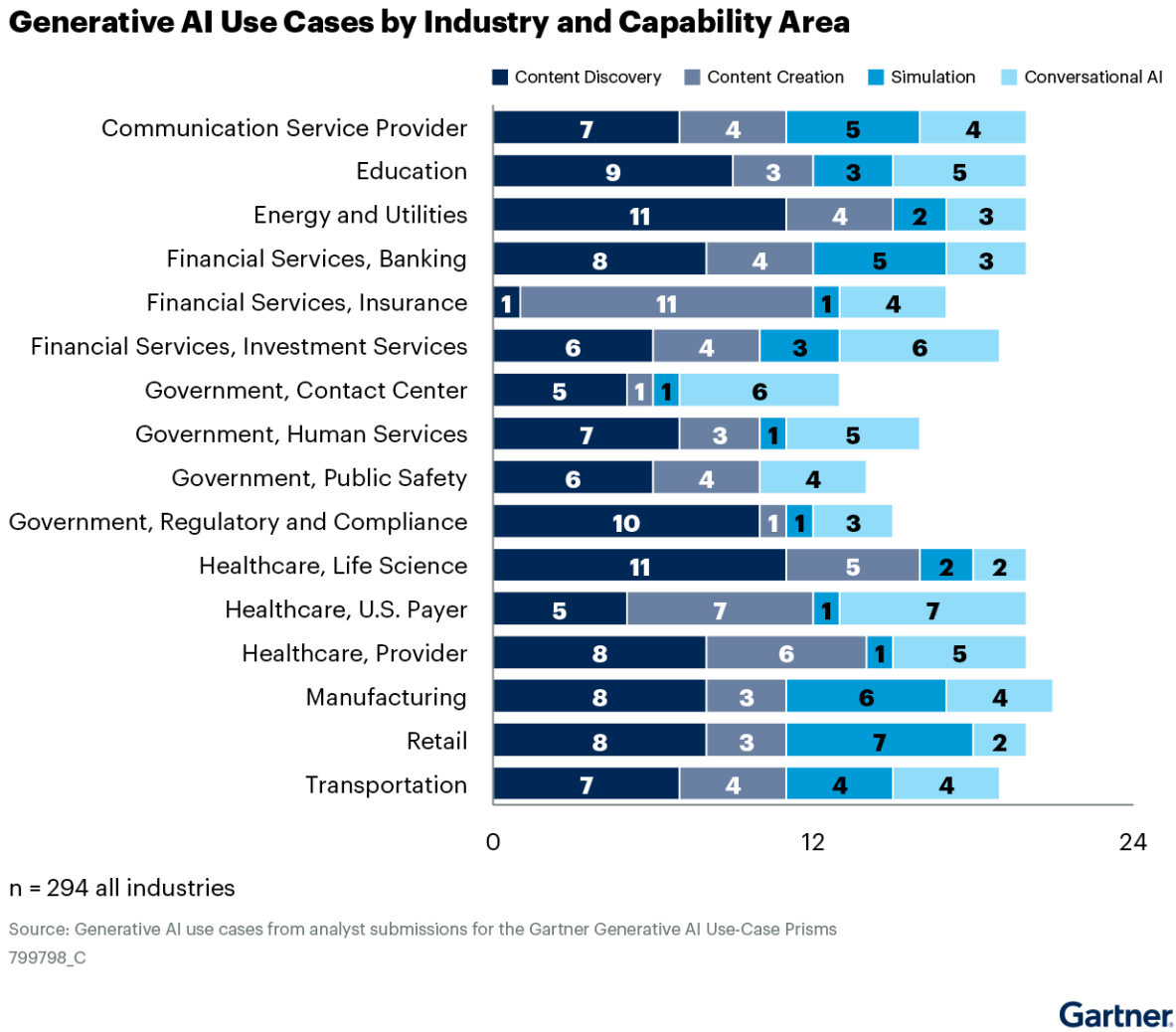
The examples included in this collection, encompassing 16 industries and 294 specific use cases, fulfills these needs. The generative AI use-case prisms:

- Provide a precise industry-specific use-case definition to help you see through the hype to find where the benefits of this new technology align to your particular needs.
- Give an assessment of the value to an organization in a specific industry, through analysis of its ability to create new revenue, drive efficiency, decrease performance risk and deliver nonfinancial or mission-related value.
- Evaluate the likelihood that an organization that invests in a use case can successfully realize the value of the use case, considering the technical, internal and external readiness.

The prism visualization provides an easily consumable summary of industry-sector specific use cases for internal presentations and shared documents. The prism research also includes the specific ratings for value and feasibility that contribute to the positioning of the use case on the prism, with Gartner experts' rationale for that rating at the market level (see Note 1). Industry leaders can use the ratings to consider how the feasibility and value impact might be specifically realized at their organization.

Figure 1 is the distribution of generative AI use cases across all 16 industries. Note that the graphic characterizes the content of the use cases included in the research, which are representative and not comprehensive.

Figure 1: Generative AI Use Cases by Industry and Capability Area



n = 294 all industries

Source: Generative AI use cases from analyst submissions for the Gartner Generative AI Use-Case Prisms

799798_C

Gartner

Research Highlights

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

Generative AI Use-Case Prisms for Industries (in Alphabetical Order)

Table 1: Overview on the Generative AI Use-Case Prisms, by Industry

(Enlarged table in Appendix)

Industry and Sector	Title and Link	Sample Industry-Specific Use Cases
Communication Service Provider	Use-Case Prism: Generative AI for CSPs	▪ Network optimization ▪ Software development team productivity
Education	Use-Case Prism: Generative AI for Education	▪ Teaching content personalization ▪ Research assistant
Energy and Utilities	Use-Case Prism: Generative AI for Energy and Utilities	▪ Grid engineering ▪ Forecast utility loads
Financial Services, Banking	Use-Case Prism: Generative AI for Banking	▪ Synthetic credit data ▪ AI financial coach assistant
Financial Services, Insurance	Use-Case Prism: Generative AI for P&C and Life Insurance	▪ Regulation/compliance filing assistance ▪ Underwriting risk analysis/summary
Financial Services, Investment Services	Use-Case Prism: Generative AI for Investment Services	▪ Advisor workflow co-pilot ▪ AI-managed portfolios
Government, Contact Center	Use-Case Prism: Generative AI for Government Contact Centers	▪ Contact center virtual assistant ▪ Contact center staff onboarding
Government, Government Regulatory and Compliance	Use-Case Prism: Generative AI for Government Regulatory and Compliance	▪ Single view of citizen/business ▪ Case manager assistant
Government, Human Services	Use-Case Prism: Generative AI for Human Services	▪ Process explanation for service recipients ▪ Caseworker support
Government, Public Safety	Use-Case Prism: Generative AI for Public Safety	▪ 911 call/text prescreening ▪ Nonemergency incident chatbot
Healthcare, Payer	Use-Case Prism: Generative AI for U.S. Healthcare Payers	▪ First-draft member communications ▪ Analytics for group reporting
Healthcare, Provider	Use-Case Prism: Generative AI for Healthcare Providers	▪ Ambient digital scribe ▪ Clinical encounter simulation
Healthcare, Life Sciences	Use-Case Prism: Generative AI for Life Sciences	▪ Molecular development ▪ Scientific, clinical and medical literature review
Manufacturing	Use-Case Prism: Generative AI for Manufacturing	▪ Materials processing efficiency ▪ Guided machine maintenance
Retail	Use-Case Prism: Generative AI for Retail	▪ Enhanced search and upselling ▪ Supply chain optimization
Transportation	Use-Case Prism: Generative AI for Transportation	▪ Transit model planning ▪ Travel planning

Source: Gartner (September 2023)

Note 1: Definitions of the Scoring Scale

See Table 2 for the definitions of the value ratings and Table 3 for the definitions of the feasibility ratings.

Table 2: Scaling for Ratings of Value (Increase Revenue, Increased Efficiency, Managed Risk, Nonfinancial Value)

Rating	Definition
N/A	Not applicable. The use case is not intended to create value in any way.
0	**Negligible.** It offers promise for value in the market, but it is doubtful that enterprises gain any real value.
1	**Low.** It offers a slight process improvement. It is difficult to translate into increased revenue or cost savings.
2	**Moderate.** It offers incremental, but significant, improvements to existing processes. These improvements will result in increased revenue or cost savings for an enterprise.
3	**High.** It enables new ways of performing horizontal or vertical applications, resulting in significantly increased revenue or cost savings for an enterprise.
4	**Transformational.** It enables new ways of doing business within and across industries. This will result in major shifts in industry dynamics.

Source: Gartner (September 2023)

Table 3: Scaling for Ratings of Feasibility (Technical Feasibility, Internal Readiness, External Readiness)

Rating	Definition
0	**Impossible.** There is a very low chance of enterprises feasibly implementing the use case.
1	**Challenging.** It is possible to implement the use case, but enterprises must overcome barriers with significant efforts.
2	**Complicated.** Enterprises can implement the use case, but will face moderate obstacles.
3	**Doable.** Enterprises can implement the use case with minor obstacles.
4	**Easy.** The use case is within the capabilities of most enterprises to adapt.

Source: Gartner (September 2023)

Document Revision History

Use-Case Comparison for Generative AI: A CIO's Guide to Emerging Opportunities in 14 Industries - 23 September 2024

Recommended by the Authors

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

Research Roundup for Generative AI

Toolkit: Discover and Prioritize Your Best AI Use Cases With a Gartner Prism

Table 1: Overview on the Generative AI Use-Case Prisms, by Industry

Industry and Sector	Title and Link	Sample Industry-Specific Use Cases
Communication Service Provider	Use-Case Prism: Generative AI for CSPs	■ Network optimization ■ Software development team productivity
Education	Use-Case Prism: Generative AI for Education	■ Teaching content personalization ■ Research assistant
Energy and Utilities	Use-Case Prism: Generative AI for Energy and Utilities	■ Grid engineering ■ Forecast utility loads
Financial Services, Banking	Use-Case Prism: Generative AI for Banking	■ Synthetic credit data ■ AI financial coach assistant
Financial Services, Insurance	Use-Case Prism: Generative AI for P&C and Life Insurance	■ Regulation/compliance filing assistance ■ Underwriting risk analysis/summary
Financial Services, Investment Services	Use-Case Prism: Generative AI for Investment	Advisor workflow co-pilot

	Services	■ AI-managed portfolios
Government, Contact Center	Use-Case Prism: Generative AI for Government Contact Centers	■ Contact center virtual assistant ■ Contact center staff onboarding
Government, Government Regulatory and Compliance	Use-Case Prism: Generative AI for Government Regulatory and Compliance	■ Single view of citizen/business ■ Case manager assistant
Government, Human Services	Use-Case Prism: Generative AI for Human Services	■ Process explanation for service recipients ■ Caseworker support
Government, Public Safety	Use-Case Prism: Generative AI for Public Safety	■ 911 call/text prescreening ■ Nonemergency incident chatbot
Healthcare, Payer	Use-Case Prism: Generative AI for U.S. Healthcare Payers	■ First-draft member communications ■ Analytics for group reporting
Healthcare, Provider	Use-Case Prism: Generative AI for Healthcare Providers	■ Ambient digital scribe Clinical encounter simulation

		■
Healthcare, Life Sciences	Use-Case Prism: Generative AI for Life Sciences	■ Molecular development ■ Scientific, clinical and medical literature review
Manufacturing	Use-Case Prism: Generative AI for Manufacturing	■ Materials processing efficiency ■ Guided machine maintenance
Retail	Use-Case Prism: Generative AI for Retail	■ Enhanced search and upselling ■ Supply chain optimization
Transportation	Use-Case Prism: Generative AI for Transportation	■ Transit model planning ■ Travel planning

Source: Gartner (September 2023)

Table 2: Scaling for Ratings of Value (Increase Revenue, Increased Efficiency, Managed Risk, Nonfinancial Value)

Rating	Definition
N/A	Not applicable. The use case is not intended to create value in any way.
0	**Negligible.** It offers promise for value in the market, but it is doubtful that enterprises gain any real value.
1	**Low.** It offers a slight process improvement. It is difficult to translate into increased revenue or cost savings.
2	**Moderate.** It offers incremental, but significant, improvements to existing processes. These improvements will result in increased revenue or cost savings for an enterprise.
3	**High.** It enables new ways of performing horizontal or vertical applications, resulting in significantly increased revenue or cost savings for an enterprise.
4	**Transformational.** It enables new ways of doing business within and across industries. This will result in major shifts in industry dynamics.

Source: Gartner (September 2023)

Table 3: Scaling for Ratings of Feasibility (Technical Feasibility, Internal Readiness, External Readiness)

Rating	Definition
0	**Impossible.** There is a very low chance of enterprises feasibly implementing the use case.
1	**Challenging.** It is possible to implement the use case, but enterprises must overcome barriers with significant efforts.
2	**Complicated.** Enterprises can implement the use case, but will face moderate obstacles.
3	**Doable.** Enterprises can implement the use case with minor obstacles.
4	**Easy.** The use case is within the capabilities of most enterprises to adapt.

Source: Gartner (September 2023)