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Choose the Best Generative AI Use Cases for Supply Chain Planning

Jan Snoeckx

Director Analyst

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The Hype Is Real — AI Is Not Fading Away

No.1

AI has emerged as the top technology priority in 2024, **by far.**

n = 419

Source: 2024 Gartner Digital Business Impact on Supply Chain

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AI Will Become Table Stakes

More than half of the participants

think AI and GenAI will be **highly disruptive** to their supply chain over the next decade.

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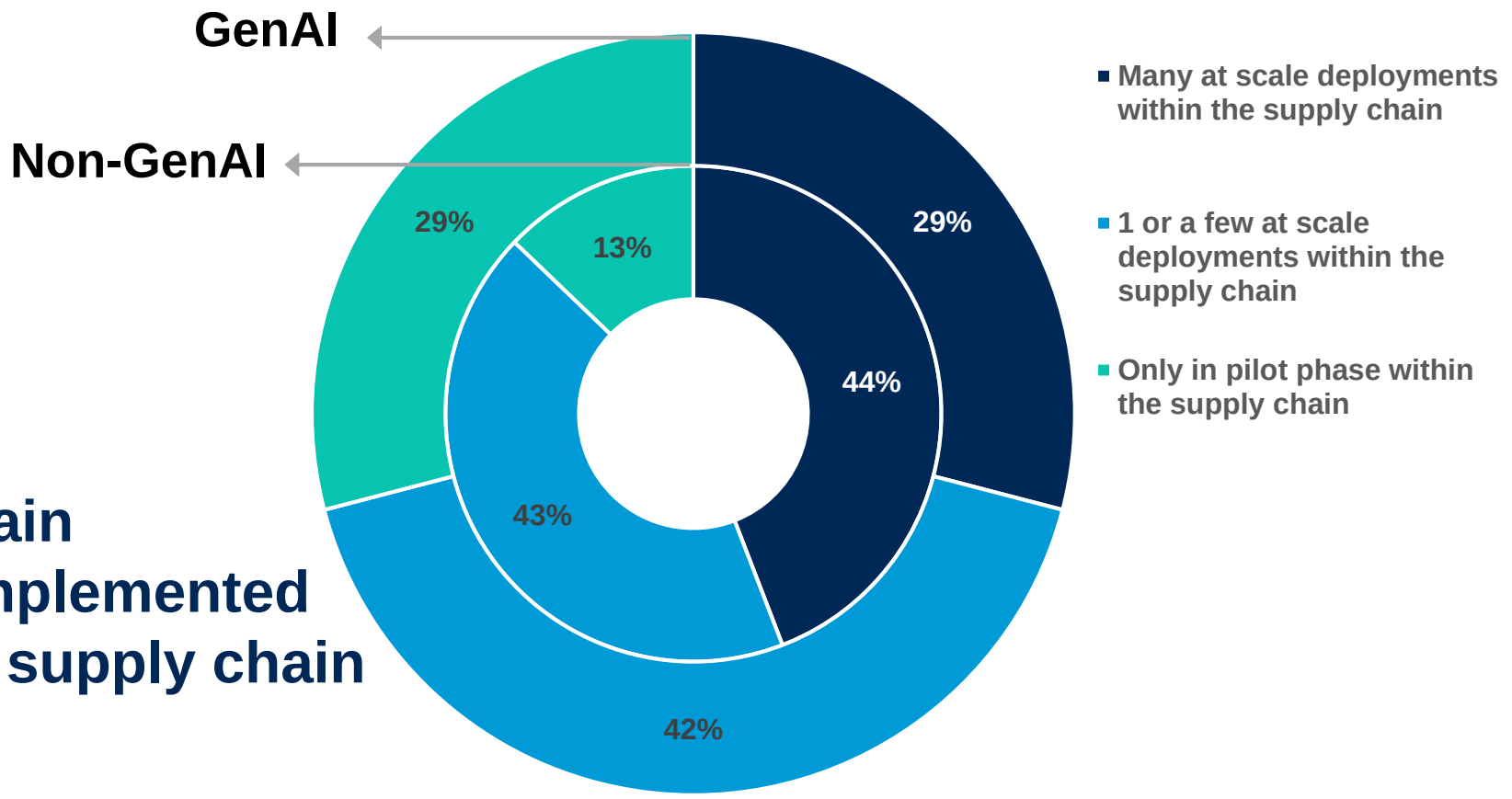
Generative AI and Non-Gen AI are beyond pilot stages



71% of all supply chain respondents have implemented Generative AI within supply chain

n = 265; Respondents were excluded if they indicated they were not using both Generative AI and Non-Gen AI

S07: Please indicate to what extent your supply chain function has deployed the following technologies beyond what already exists across the entire company.

72% is based on the 531 respondents reaching S07 screener question; 151 respondents answered that none of the options above were true were excluded from the survey at this point.

Source: 2024 Gartner Gen AI and AI in Supply Chain Survey

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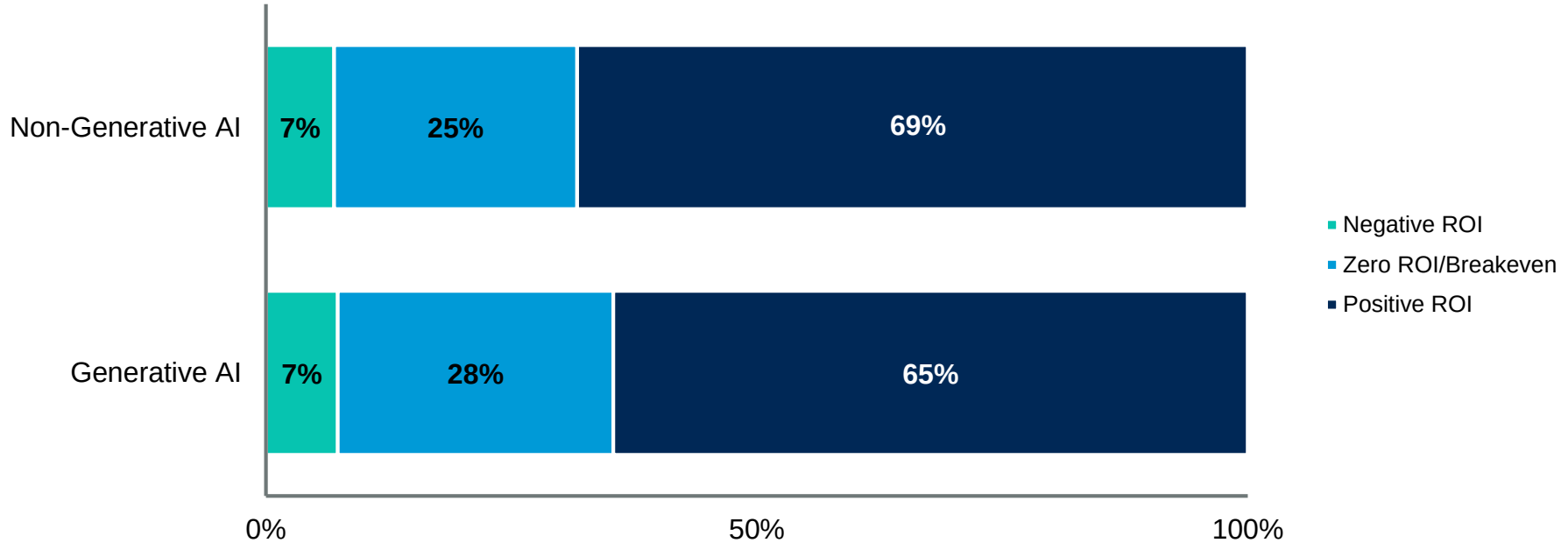
Just over two thirds of supply chains are seeing a positive ROI from GenAI

Overall ROI for Gen AI



n varies from 82-89; Leaders, excluding Unsure/I don't know.

Q24: Has the overall return-on-investment (ROI) in Generative AI, been was the ROI positive , zero, or negative?

Source: 2024 Gartner Gen AI and AI in Supply Chain Survey

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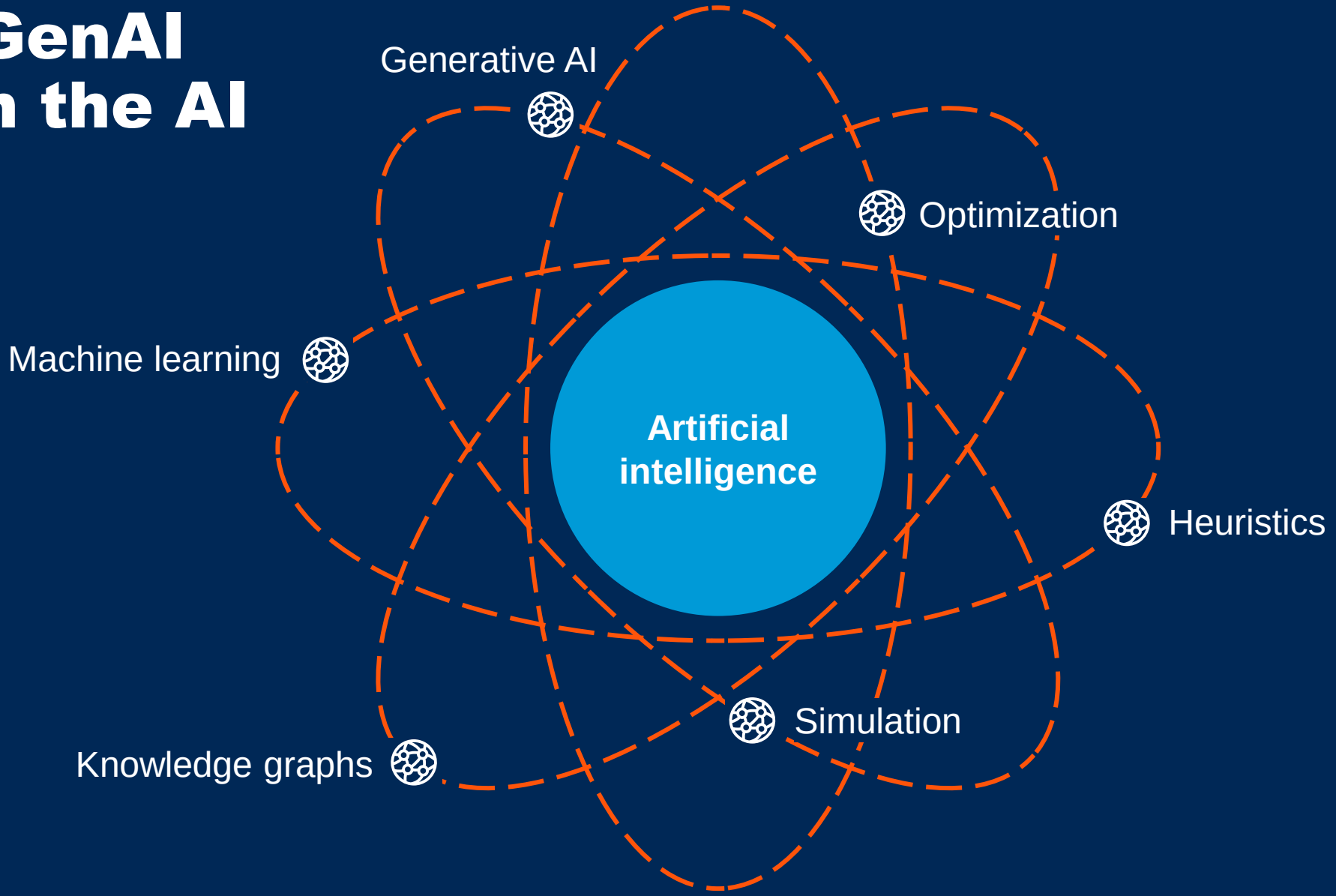
Where is GenAI situated in the AI universe?



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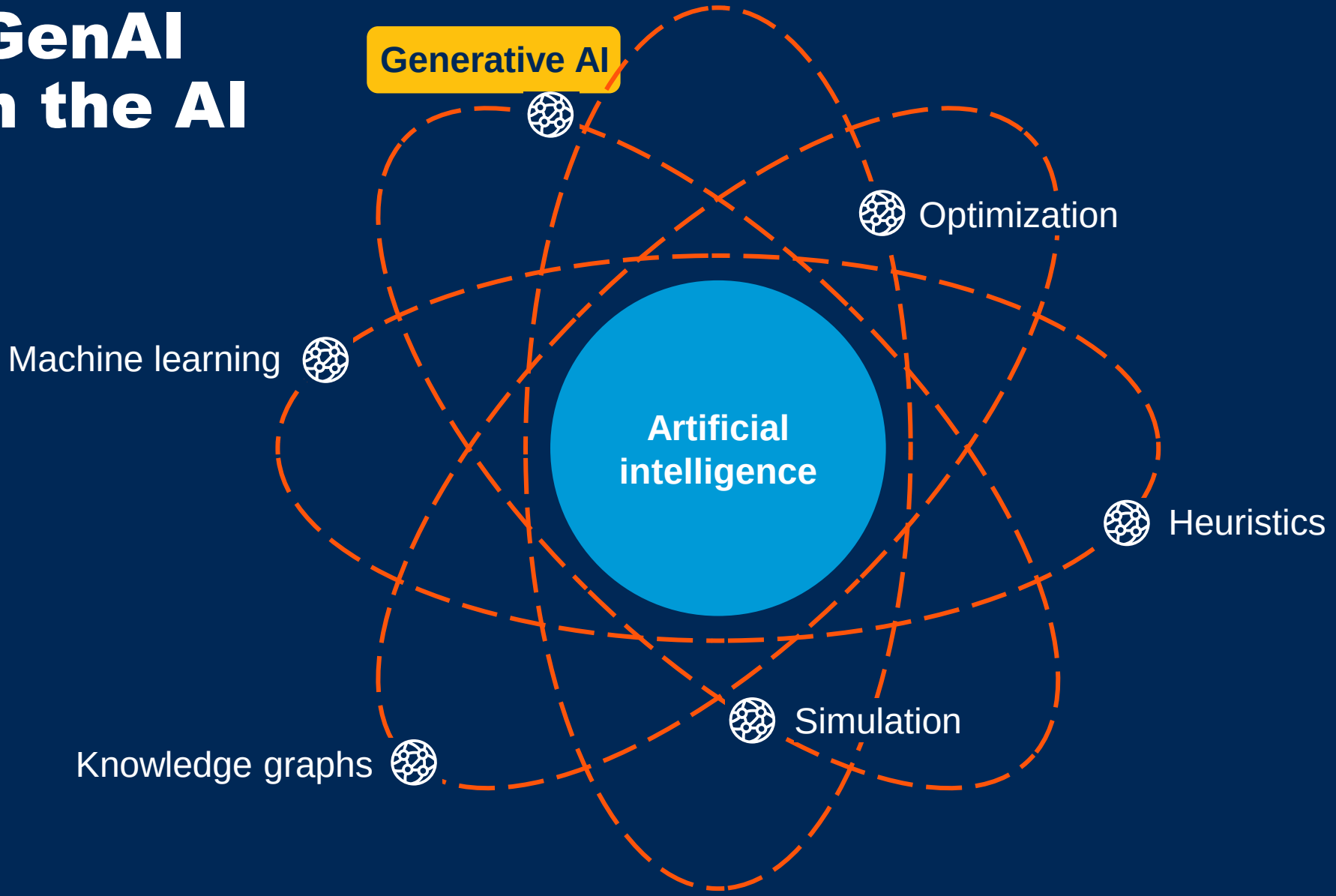

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Difference Between Traditional AI and GenAI

Traditional AI	Generative AI
Pattern Recognition	**Pattern Creation**
Analyzes Data and Makes Predictions & Prescriptions	**Creates New Data Similar to Its Training Data (aka Synthetic Data)**

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Today Is About Choice – how to choose the best use cases for your organization?

1. Generate many ideas, aligned to business priorities
2. Build a small, balanced portfolio of initiatives
3. Pilot before industrialize

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Build an inventory of use cases through ideation aligned with GenAI capabilities

1

Generate many ideas, aligned to business priorities

2

Build a small, balanced portfolio of initiatives

3

Pilot before industrialize

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Ideation and prioritization ensure alignment with business needs and potential value delivery

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GenAI to Support Managing Planning Strategy

General Task	Manage Planning Strategy
Written Content Augmentation and Creation	• **Overall Strategy Deployment**: The creation of custom presentation and communication materials for each audience (board to frontline).
Summarization	• **Strategic Decisions Summary**: Generate summary of strategic decisions made by other functions in the enterprise to inform planning decisions. • **Government Policy Summary:** Use GenAI to summarize legislation submitted by governmental bodies, including environmental, social and governance (ESG) regulations, that will impact aspects of supply chain planning (SCP).
Classification of Content for Specific Use Cases	• **Continuous Segmentation Generation:** Generate segmentation classification based on changing business, economic and value change conditions.

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GenAI to Support Managing Technology

General Task	Manage Technology
Written Content Augmentation and Creation	• **Technology Use Guide Creation:** Create procedures and documentation on how to use technology. • **RFP Creation:** Create RFPs for technology evaluation. • **MSA Agreement Creation:** Create master service agreement (MSA) for technology support. • **End-User Request Generation:** Generate of change request by end users. • **Help Desk Ticket Generation:** Generate help desk tickets/generate communication to impacted users.
Question Answering, Chatbots and Information Discovery	• **Customized Troubleshooting:** Troubleshooting specific to the end user type (individual contributor vs. manager vs. executive, etc).
Classification of Content for Specific Use Cases	• **Functional Enhancement Summary:** Summarize functional enhancements in technology upgrades and how they can impact processes, roles and governance.
Software Coding	• **Synthetic Data Creation:** Create synthetic data for software testing and for experimentation with digital technologies.

GenAI to Support Organization Design

General Task	Manage Organization Design
Written Content Augmentation and Creation	• **COE Charter Generation:** Craft/modify supply chain center of excellence (COE) charter. • **Job Description Generation:** Generate job descriptions or formulate skill requirements. • **New-Hire Onboarding:** Create onboarding plan for new hires.
Classification of Content for Specific Use Cases	• **Org Chart Generation:** Provide visuals of organizational structure and interconnections. • **Competency Model Generation:** Generate and revise competency models based on defined preferences as circumstances change.

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GenAI to Support Managing Performance

General Task	Manage Performance
Question Answering, Chatbots and Information Discovery	• **Tradeoff Analysis:** Use chatbot functionality to help better understand trade-off relationships. • **KPI Discovery and Diagnostics:** Answer Q&A prompts to present and explain KPIs; conduct what-if and root cause analysis.
Summarization	• **Performance Analysis:** Write performance reports that summarize top root causes for performance deviations.

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GenAI to Support Managing Supply Chain Planning Processes

General Task	Manage Supply Chain Planning Processes
Written Content Augmentation and Creation	• **S&OP Meeting Support:** Generate S&OP agenda and S&OP meeting materials. • **Delivery Update Email Generation:** Generate emails to inform customers when delivery dates change or when a substitute product is being sent. • **SOW Creation:** Creation of statements of work (SOWs) for outsourcing (business process as a service) agreements.

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GenAI to Support Managing Supply Chain Planning Processes

Cont'd

General Task	Manage Supply Chain Planning Processes
Question Answering, Chatbots and Information Discovery	• **Demand Planning Chat:** Enable chat functionality that helps planners understand plans better: What is possible? What are the risks? What assumptions drive the plan? • **Supply Plan Analysis:** Use chat functionality to help planners understand plans better: What is possible? What are the risks? • **Data Modification Analysis and Reduction:** Use GenAI to analyze and summarize commonly used reason codes to changes in data and ask what modifications can be made to reduce planners modifying the data.
Summarization	• **Pending and Proposed Regulation Summary:** Summarize pending and proposed regulations that will impact demand. • **Regulation Supply Impact Summary:** Summarize pending and proposed regulations that will impact supply response.

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GenAI to Support Managing Supply Chain Planning Processes

Cont'd

General Task	Manage Supply Chain Planning Processes
Classification of Content for Specific Use Cases	• **Segment Demand Generation:** Generate segments for demand segmentation activities. • **New Segment Forecasts**: Forecast generation for new categories of products or services. • **Scenario Generation**: Use GenAI to generate scenarios and predict impacts on metrics and KPIs to enable S&OP.
Software Coding	• **Continuous Model and Algorithm Generation:** Use GenAI for automatic generation of models and algorithms as business conditions change. Either modification of existing model or algorithm which results in something net-new • **Synthetic Data Development:** Develop synthetic data to support simulations.

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Aligning GenAI With Supply Chain Planning Objectives

Supply Chain Planning Strategy

- Designing planning strategy
- Managing strategy for sustainability

Supply Chain Planning Technology

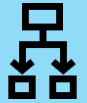
- Managing data
- Designing the technology roadmap
- Leveraging technology

Supply Chain Planning Organization

- Talent strategy
- Establishing culture
- Designing the organization structure

Supply Chain Planning Performance

- Managing processes
- Developing analytics
- Managing decisions
- Governing performance



Supply Chain Planning Process

- Sales and operations planning (S&OP)
- Sales and operations execution (S&OE)
- Demand and supply planning

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Funnel ideas into a small selection of diverse initiatives

1

Generate many ideas, aligned to business priorities

2

Build a small, balanced portfolio of initiatives

3

Pilot before industrialize

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Ensure strategic alignment questions are answered

	Strategic question
Stakeholders and vision	What is our purpose in pursuing the technology?
Workflow and timeline	Do you have the right steps and process to get there?
Use cases	Which workflows will it impact most?
Governance	Do you have a management structure in place to guide it?
Engagement	How do we inform our employees of GenAI's impact?

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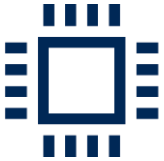
Initial Considerations: Feasibility

Talent

- Availability of talent to interface, refine, maintain or build GenAI solutions
- Availability of subject matter experts to scope functional requirements and validate output



Technology

- Access to in-house developed or commercial GenAI technology services
- Fit into current technology stack
- Vendor selection

Data

- Availability
- Data privacy
- Copyright and data ownership
- Bias
- Data granularity
- Data latency

Cultural Readiness

- SCP organizational maturity
- Alignment between SCP and other enterprise functions
- GenAI decision rights and guardrails

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Initial Considerations: technique suitability

AI technique suitability Low (L) Medium (M) High (H)

	Common AI techniques					
Use-case families	Generative models	Nongenerative machine learning	Optimization	Simulation	Rules/ heuristics	Graphs
Prediction/ forecasting	L	H	L	H	M	L
Planning	L	L	H	M	M	H
Decision intelligence	L	M	H	H	H	M
Autonomous systems	L	M	H	M	M	L
Segmentation/ classification	M	H	L	L	H	H
Recommendation systems	M	H	M	L	M	H
Perception	M	H	L	L	L	L
Intelligent automation	M	H	L	L	H	M
Anomaly detection/ monitoring	M	H	L	M	M	H
Content generation	H	L	L	H	L	L
Conversational user interfaces	H	H	L	L	M	H
Knowledge discovery	H	M	L	L	M	H

Source: Gartner
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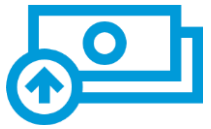
Initial Considerations: Business Value

Efficiency Gains

- Meeting or exceeding supply chain performance goals with same levels of investment in transportation, production assets and inventory

Service Improvement

- Meeting or exceeding customer service requirements, such as order status visibility, on-time delivery or product availability



Revenue Growth

- Support new business objectives that drive top-line growth
- Support new product innovation activities
- Support product portfolio planning

Productivity Gains

- Improving the productivity of supply chain planning staff, by eliminating non-value tasks and freeing up time to focus on higher-order priorities
- Supporting faster analysis of cross-functional data

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The Generative AI Pilot Lifecycle

Generative AI Pilot Cycle

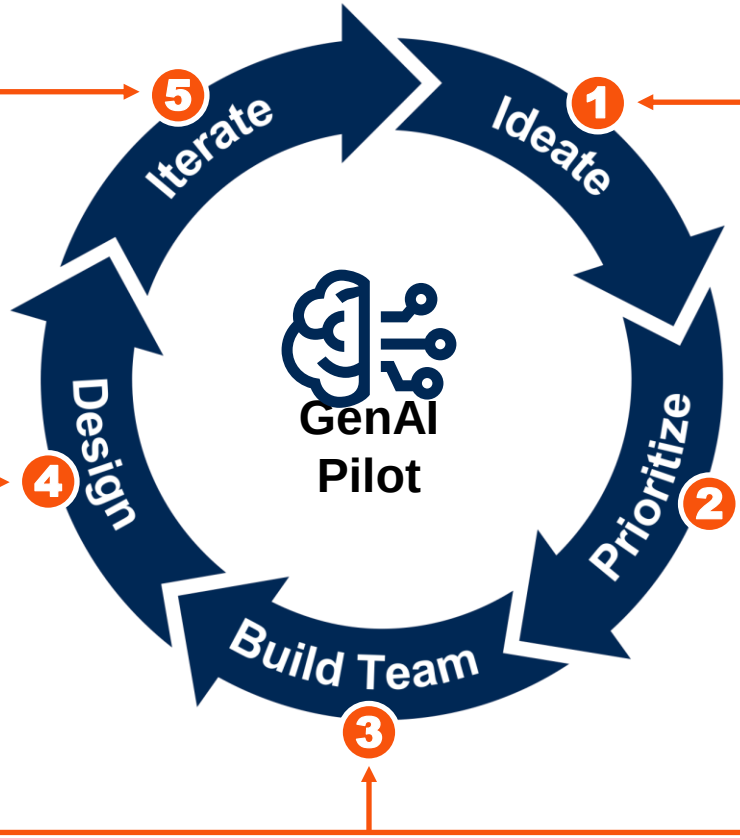
Generate many use case ideas, aligning to business priorities and exploiting the transformative potential of GenAI.

Prioritize no more than a few GenAI use cases, building a small portfolio that balances value and feasibility.

Build a dedicated team for the pilot, including business partners, software developers and AI experts.

Design a minimum viable product for each use case. Define the deployment approach and risk mitigation plan.

Deliver the minimum functionality to test use cases in a few months. Decide to stop, refine or scale.



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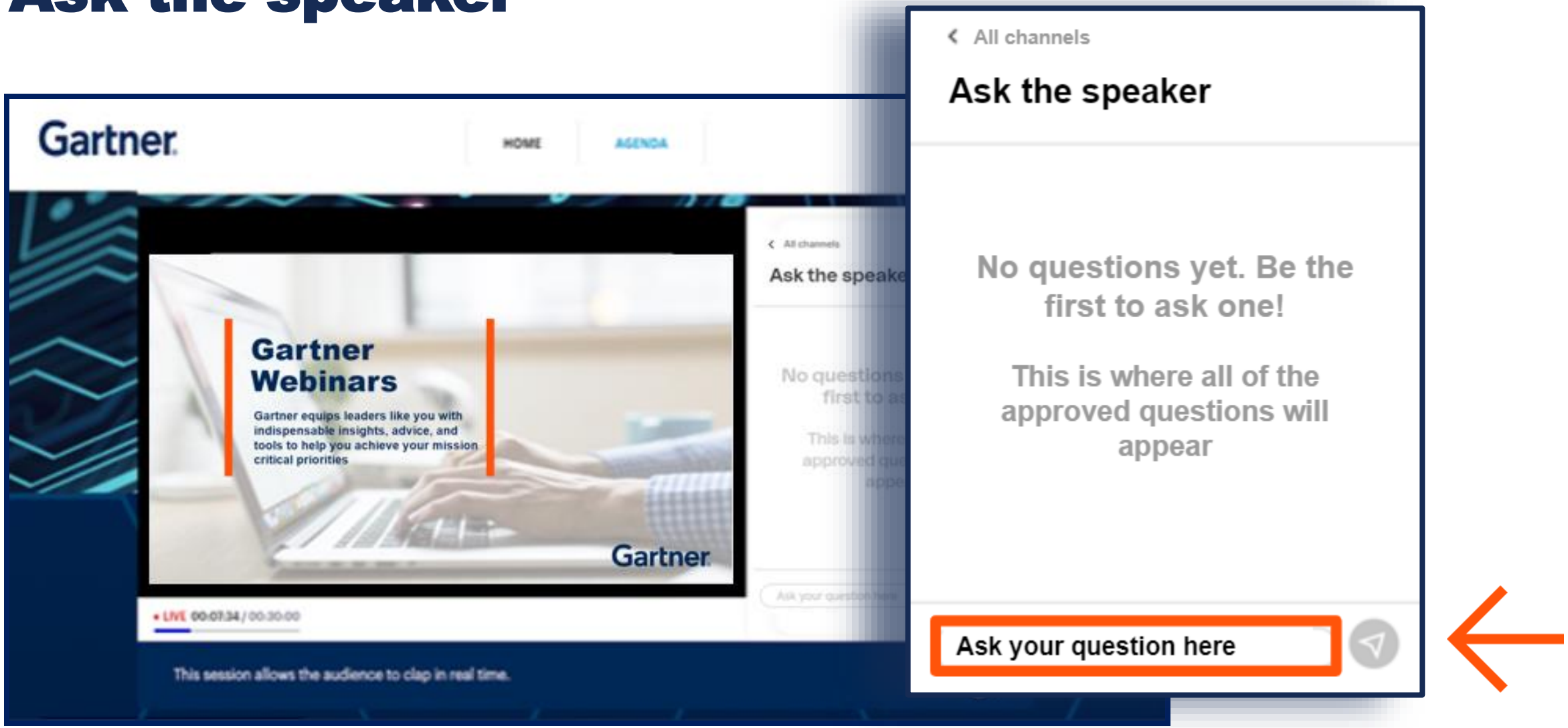

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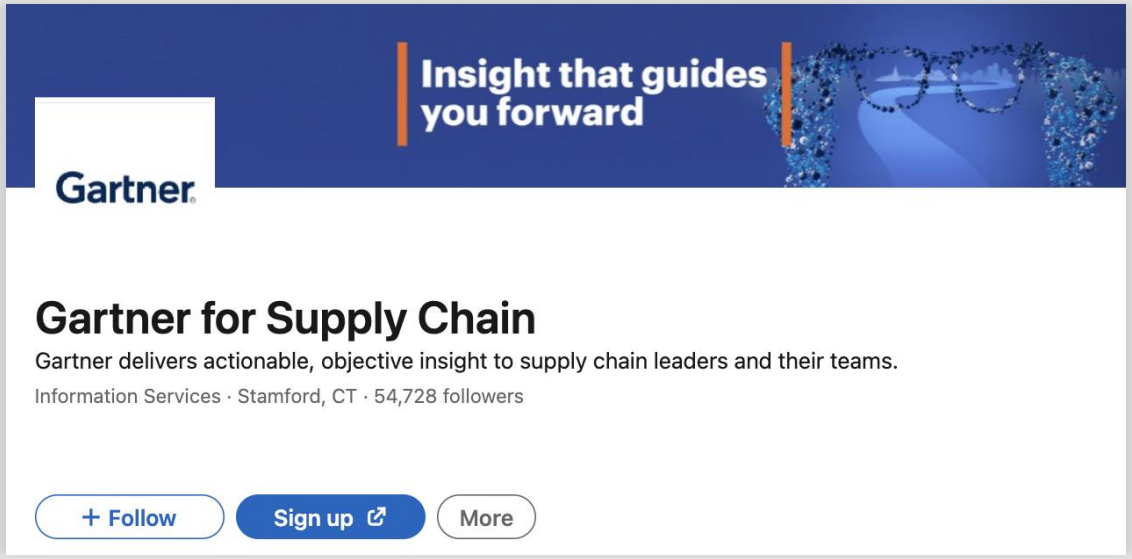

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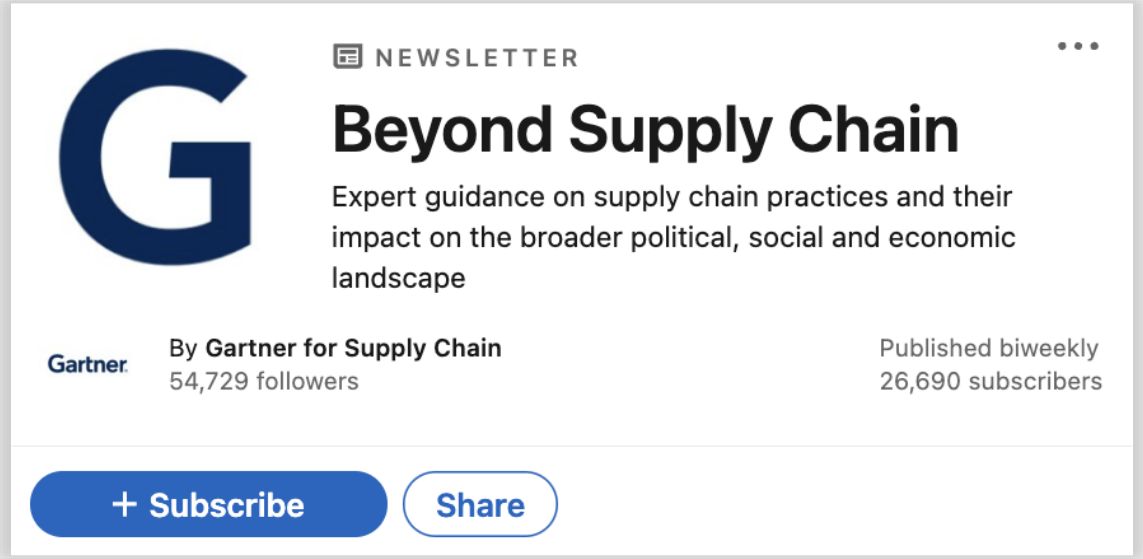

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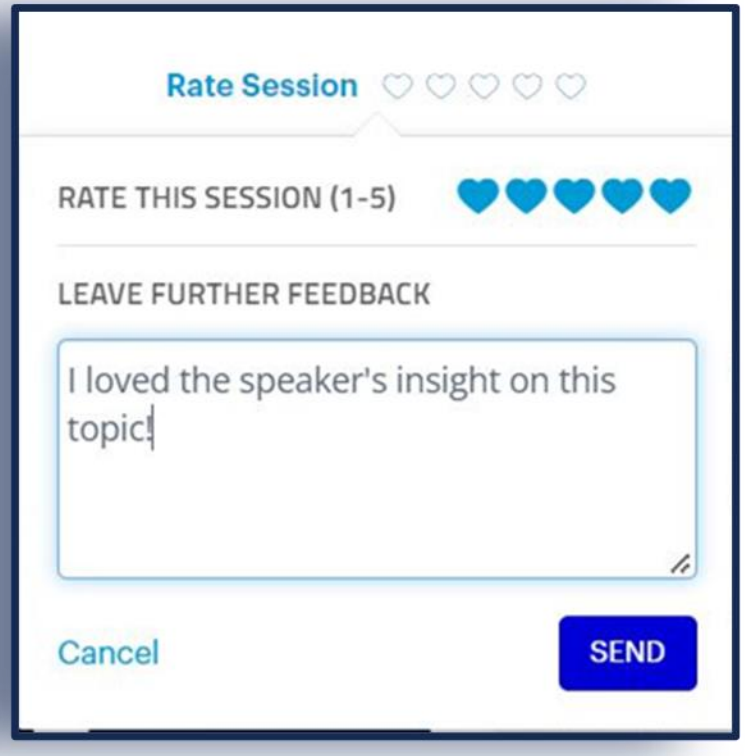

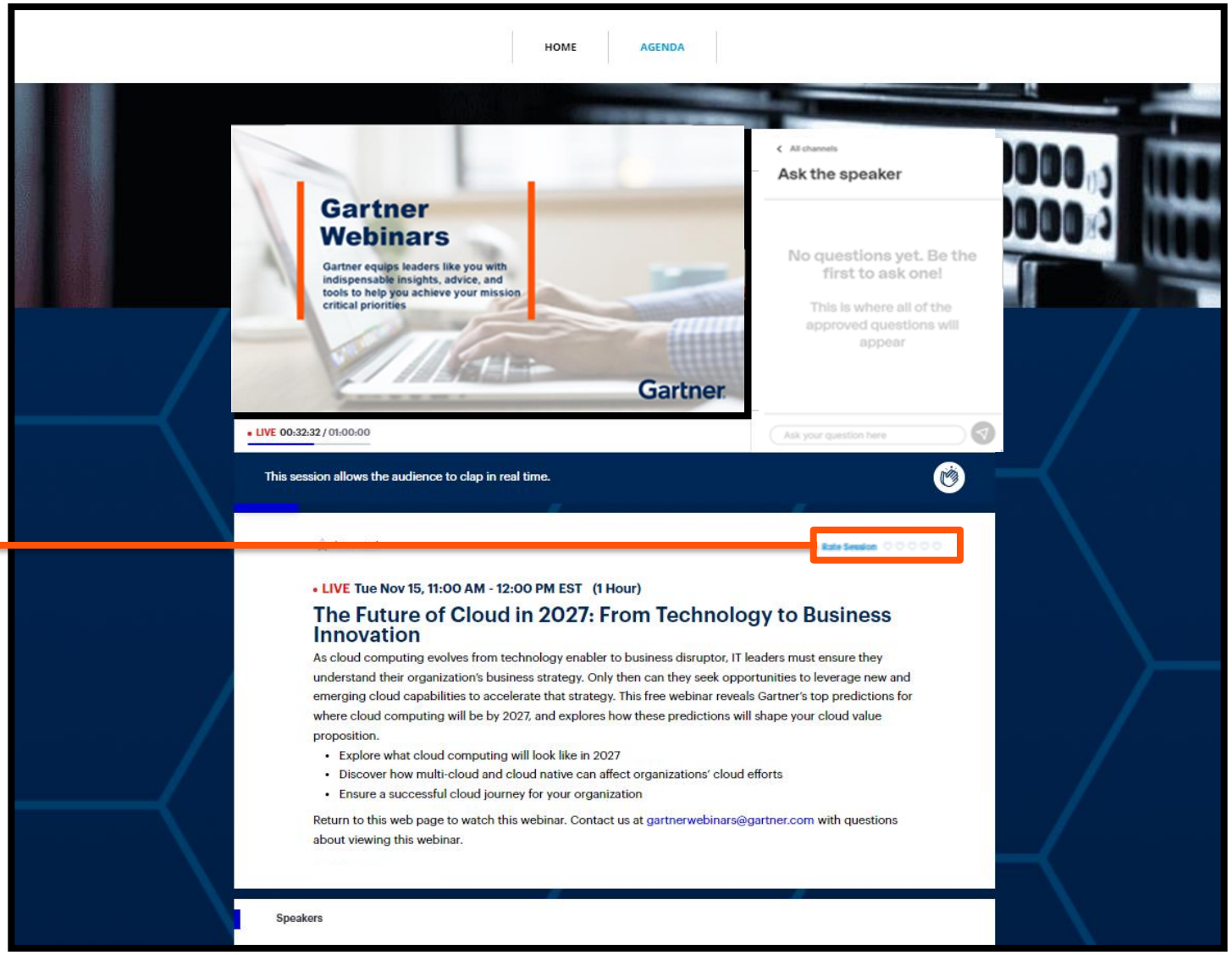

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