



RESEARCH & BENCHMARKING

DCAT 2023 Benchmarking Survey: Use of AI in Supply Chain Management

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1. Which best describes your company? (Check only one) [must reply]

- 1. Biopharmaceutical or Pharmaceutical
- 2. Supplier or Contract Service Provider

2. How important is AI across all operations to your company's strategic objectives?

- Very important
- Important
- Not very important
- Not at all important
- Too soon to tell

3. Which of the following departments or groups in your company are currently using or planning to use AI? (Check one for each row)

	CURRENTLY USING	PLANNING TO USE	NOT USING OR PLANNING TO USE
Research & Development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufacturing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality Assurance/Quality Control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulatory Affairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Procurement, Supply Chain Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Corporate Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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4. Which best describes your company’s use of AI in supply chain management? [must reply]

1. Routinely using AI in supply chain management
2. Starting up an AI initiative(s) in supply chain management
3. Considering an AI initiative in supply chain management but not using yet
4. No AI initiatives being considered

Actively Using AI

Ask questions (5–15) if response to Q4 = 1 or 2

5. For which supply chain management activities is AI being applied and at what stage? (Check all that apply)

	PILOT STARTUP	ROUTINE USE	POSSIBLE FUTURE USE
Demand forecasting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inventory management and PO generation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supply chain risk assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supplier selection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supplier risk management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Logistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Measuring supplier performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Document generation (RFPs, contracts, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. If there are any other supply chain applications for AI that were not cited above, please note them here and at what stage each is being applied.

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For the purposes of this survey, please consider the following definitions. Machine learning or predictive AI is the simulation of human intelligence using self-improving algorithms trained on data to produce models that can yield operational insights and perform complex tasks. Generative AI is the simulation of human intelligence enabling users to quickly generate new content based on a variety of inputs; Inputs and outputs for these models can include text, images, sounds, animation, 3D models, or other types of data.

7. Which of the following types of AI is your company currently using in supply chain management?

(Check all that apply)

- Machine learning or predictive AI
- Generative AI

8. Which best describes the hardware/software that your company is using AI in supply chain management?

- We built our own system hardware/software
- Vendor provided system hardware/software [Please list the vendors you have worked with if you are allowed to share such information.]

- Other [Please specify]

9. Which best describes the data that your company is using in AI supply chain management?

- We are using our own data exclusively
- We are using externally-sourced data [Please list the vendors you have worked with if you are allowed to share such information.]

- We are using our own data and externally sourced data

- Other [Please specify]

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10. What decision-making authority has been granted to your AI system?

- AI identifies issues and opportunities, but managers develop options and make decisions based on those findings
- AI identifies issues and opportunities and makes recommendations, but managers make decisions based on those recommendations
- AI is enabled to make and carryout certain decisions. [Please indicate the type of decisions AI is enabled to make]
- It depends [Please explain]
- Other [Please specify]

11. How challenging has each of the following barriers been to implementing your AI system?

	NO CHALLENGE	MINOR CHALLENGE	MODERATE CHALLENGE	MAJOR CHALLENGE
Capabilities of available systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Growing costs, inadequate budget	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Level of in-house expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of outside expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to data to train system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capturing and inputting internal data needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capturing and inputting external data needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resistance within supply chain group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resistance, lack of support from corporate management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. If there are any other barriers to implementing your AI system that were not cited above, please note them here and how challenging each has been.

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13. What major concerns or issues have arisen as you have implemented AI in your supply chain management?

(Check all that apply)

- Supply chain security
- Confidentiality of your data
- Reliability of the recommendations or decisions made by AI
- GMP/GCP compliance
- FDA acceptance
- Other [Please specify]
- No major concerns or issues [exclusive]

14. How will your application of AI in supply chain management affect your suppliers? *(Check all that apply)*

- Supplier interaction will increase in response to opportunities and issues raised by AI
- Suppliers will need to be more nimble to respond to AI recommendations
- Suppliers will need to provide us with more data about their operations
- Suppliers will need to make greater investments in their information technology
- Other [Please specify]
- We don't expect any significant implications for suppliers [exclusive]
- We don't yet understand the implications for suppliers [exclusive]

15. If you have seen any significant benefits from using AI in supply chain management or have a success story you would be willing to share, please note them here.

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Not Actively Using AI

Ask questions (16–20) if Q4 = 3 or 4

16. In addition to requirements being placed on your company's suppliers, what other steps is your company taking, or planning to take, to achieve its supply chain sustainability goals? (Check all that apply)

- Don't understand how it might be useful
- Lack internal knowledge and expertise
- Senior management not interested or supportive
- Don't believe the technology is ready for deployment
- The investment is too great for the expected benefit
- Our company can't afford the investment
- Other [Please specify]

17. If your company were to pursue using AI in supply management, for which of the following activities would you expect AI to be most useful? (Check all that apply)

- Demand forecasting
- Inventory management and PO generation
- Supply chain risk assessment
- Supplier selection
- Supplier risk management
- Measuring supplier performance
- Document generation (RFPs, contracts, etc.)
- Other [Please specify]
- None of these [exclusive]
- Not sure [exclusive]

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18. Which of the following barriers would you expect to encounter if your company were to pursue using AI in supply chain management? *(Check all that apply)*

- Resistance within supply chain group
- Resistance, lack of support from corporate management
- Capabilities of available systems
- Growing costs, inadequate budget
- Level of in-house expertise
- Availability of outside expertise
- Access to data to train system
- Capturing and inputting internal data needed
- Capturing and inputting external data needed
- Other [Please specify]
- None of these [exclusive]
- Not sure [exclusive]

19. What major concerns would you have if your company were to pursue using AI in supply chain management? *(Check all that apply)*

- Supply chain security
- Confidentiality of your data
- Reliability of the recommendations or decisions made by AI
- GMP/GCP compliance
- FDA acceptance
- Other [Please specify]
- No major concerns expected [exclusive]

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20. How might the application of AI in supply chain management in your company affect your suppliers?
(Check all that apply)

- Suppliers would need to provide us with more data about their operations
- Suppliers would need to make greater investments in their information technology
- Other [Please specify]
- We wouldn't expect any significant implications for suppliers [exclusive]
- Not sure [exclusive]

Pharma

Ask the following questions if response to Q1=1

21. Which best describes your company's primary activities? (Check only one) [must reply]

- Innovator, research-based drugs
- Generic drugs
- Both innovator and generic drugs
- Other [Please specify]

23. How do you source the products you sell? (Check only one) [must reply]

- We manufacture most or all of our products
- We manufacture some of our products and have others contract-manufactured
- We have most or all of our products contract-manufactured

24. Making your best estimate, which describes your company's annual revenues (in US dollars) for its last financial year? [must reply]

- Less than \$100 million
- \$100 million to \$999 million
- \$1 billion to \$19 billion
- \$20 billion to \$29 billion
- \$30 billion or more

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26. Which best describes your company's ownership? [must reply]

- Public
- Private equity
- Private, family-owned
- Private, other
- Other [Please specify]

27. Which best describes the job function of the primary person responsible for these survey responses?

(Check only one) [must reply]

- Corporate Management
- External Manufacturing
- Finance
- Project Management
- Sourcing, Procurement
- Supply Chain
- Other [Please specify]

29. Which best describes the job level of the primary person responsible for these survey responses?

(Check only one) [must reply]

- C-Suite, Executive
- Vice President, Senior Vice President
- Director, Associate Director, Manager
- Other [Please specify]

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Supplier

Ask the following questions if response to Q1=2

22. Which products and services does your company supply to the pharmaceutical and/or biopharmaceutical industry? (Check all that apply) [must reply]

- Generic APIs, intermediates, and starting materials
- Custom-manufactured small molecule APIs and intermediates
- Custom-manufactured biologic APIs
- Custom-manufactured cell and gene therapy products
- Custom-manufactured drug products
- Excipients and other drug product inputs (capsules, vials, etc.)
- Other [Please specify]

25. Making your best estimate, which describes your company's annual revenues (in US dollars) for its last financial year? [must reply]

- Less than \$50 million
- \$50 million to \$99 million
- \$100 million to \$249 million
- \$250 million to \$499 million
- \$500 million to \$999 million
- \$1 billion or more

26. Which best describes your company's ownership? [must reply]

- Public
- Private equity
- Private, family-owned
- Private, other
- Other [Please specify]

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28. Which best describes the job function of the primary person responsible for these survey responses?

(Check all that apply) [must reply]

- Account Management
- Business Development
- Corporate Management
- Manufacturing
- Marketing
- Project Management
- Sales
- Supply Chain
- Other [Please specify]

30. Which best describes the job level of the primary person responsible for these survey responses?

(Check all that apply) [must reply]

- C-Suite
- Executive/Senior Vice President
- Vice President, Group Leader
- Director, Associate Director, Manager
- Other [Please specify]

Questions for all respondents

31. Would you be willing to speak with one of our consultants by telephone should we have questions about some of your survey responses? *(These telephone calls would be scheduled in advance at your convenience.)*

[must reply]

- Yes
- No [go to Q33]

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Present the following instruction if response to Q31 is Yes.

32. Please provide the following information so we can contact you if needed regarding a follow-up telephone call.

First Name [fill in]

Last Name [fill in]

Company [fill in]

Email Address [fill in]

Telephone Number [fill in]

33. If there are any important issues regarding use of AI in supply chain management that were not covered in this survey, please note them here.

Thank you for your participation