

Intro and Profile

MPI Disruptive Technologies in Manufacturing Study – Deadline Feb. 16, 2019

The MPI Disruptive Technologies in Manufacturing Study examines the extent to which manufacturers are leveraging emerging technologies and explores the adoption of strategies, investments, and best practices needed to create new revenues and profits from digitally empowered operations.

The MPI Disruptive Technologies in Manufacturing Study is conducted by Manufacturing Performance Institute and sponsored by Infor. Please answer all questions to the best of your ability, and remember that many questions will accept multiple answers "(check all that apply)."

Submit your completed questionnaire as well as contact information at the end of the Study in order to be eligible for Study incentives.

If you have a technical problem, please email support@mpi-group.com.

Note: You must have a good understanding of your company's operations practices, production performances, product plans, and application of technologies. If your answers to the Study indicate otherwise, your submission will be rejected.

Profile Characteristics

1. Which of the following best describes your title?

Chairman

CEO or President

COO

CFO
CTO
CIO
Other C-level title or comparable
Partner or Principal or comparable
VP, Director, comparable title, or higher
Manager
Other

2. In which country or region is your company headquartered?

United States
Canada
Mexico
Argentina
Brazil
Chile
Columbia
Other Latin American or South American country
France
Germany
Italy
Spain
UK
Other European country
Australia
Cambodia
China
India
Indonesia
Japan
Malaysia
New Zealand
Philippines
Singapore
Thailand

Vietnam

Other Asian country

UAE

Saudi Arabia

Other Middle East or African country

Other country not listed above

3. Please indicate the type of manufacturing company for which you are responding:

Public manufacturing company

Not a manufacturing company

Private manufacturing company

4. What is the approximate annual revenue (in U.S. dollars) of your company?

Less than \$10 million

\$10 million to \$25 million

\$26 million to \$50 million

\$51 million to \$100 million

\$101 million to \$250 million

\$251 million to \$500 million

\$501 million to \$1 billion

More than \$1 billion

5. Which of the following products does your company manufacture? (check all that apply)

Food and Beverage Products

Textiles and Textile Products

Apparel and Leather Products

Furniture and Wood Products

Paper Products

Printed Products and Related Support Activities

Petroleum and Coal Products Manufacturing

Chemicals

Plastics and Rubber Products

Nonmetallic Mineral Products
Primary Metals
Fabricated Metals
Industrial Equipment/Heavy Equipment/Machinery
High Tech/Computers/Electronic Products
Electrical Equipment, Appliance, and Components
Automotive and Auto Parts and Components
Aerospace and Defense (A&E) Products
Transportation Equipment (not including Automotive or A&E)
Miscellaneous Products not listed above

6. In which country(ies) or region(s) does your company have production facilities? (check all that apply)

United States
Canada
Mexico
Argentina
Brazil
Chile
Columbia
Other Latin American or South American country
France
Germany
Italy
Spain
UK
Other European country
Australia
Cambodia
China
India
Indonesia
Japan
Malaysia
New Zealand
Philippines

- Singapore
- Thailand
- Vietnam
- Other Asian country
- UAE
- Saudi Arabia
- Other Middle East or African country
- Other country not listed above

7. How many years has your company been in operation?

- Less than 2 years
- 2-5 years
- 6-10 years
- 11-20 years
- More than 20 years

8. How much progress has your company made toward achieving world-class manufacturing status?

- No progress
- Some progress
- Significant progress
- Fully achieved

Technology Strategy

Technology Strategy

9. To what extent are your industry and the markets it serves vulnerable to disruptive technologies?

- Extremely vulnerable
- Somewhat vulnerable
- Not vulnerable

10. To what extent is your company vulnerable to disruptive technologies?

Extremely vulnerable

Somewhat vulnerable

Not vulnerable

11. Does your company have a strategy to regularly evaluate emerging technologies that could benefit the organization and/or disrupt your industry?

We have a companywide strategy to evaluate emerging technologies

We have a limited strategy to evaluate emerging technologies

We have begun to develop a strategy to evaluate emerging technologies

No strategy to evaluate emerging technologies, but plan to develop one

No strategy to evaluate emerging technologies and no near-term plans to develop one

12. Does your company have staff fully dedicated to the evaluation and utilization of emerging technologies?

Yes, a significant number of employees

Yes, some employees

Yes, a few employees

No

13. What best describes your company's ability to leverage emerging technologies?

Industry leader

Competitive

Laggard

No ability

Manufacturing Technologies

Manufacturing Technologies

14. Which of the following manufacturing technologies are most likely to benefit your company over the next three years? (check all that apply)

Additive manufacturing/3D printing

Robotics

Cobots

Production automation

Embedded/in-process metrology

Virtual reality

Augmented reality

Mixed reality

Smart devices/embedded machine intelligence/IoT sensors

Machine learning

Other

None of the above

15. To what extent has your company implemented the following manufacturing technologies? (check one in each row)

	No implementation	Some implementation	Extensive implementation	Planning to implement
Additive manufacturing/3D printing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Robotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cobots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production automation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Embedded/in-process metrology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Virtual reality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Augmented reality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mixed reality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart devices/embedded machine intelligence/IoT sensors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Machine learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. What effect has the implementation of new manufacturing technologies had on the following company performance measures? (check one in each row)

	Worsened performance	No effect on performance	Somewhat improved performance	Significantly improved performance	No new technologies implemented
Customer satisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Customer support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment reliability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product innovation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Productivity/Costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Profitability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales/Revenues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security (systems and information)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service innovation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Throughput/Speed of operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supply chain performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. What are your company's biggest challenges when implementing new manufacturing technologies? (check all that apply)

Cost of new technologies

Confidence in new technology capabilities

Availability of new technologies

Reliability of new technologies

Lack of understanding of use/application of new technologies for company

Management acceptance of new technologies

Talent to operate new technologies

Interoperability of new technologies with legacy equipment and processes

Maintenance of new technologies

Safety issues related to new technologies

Other

No challenges

We don't implement new manufacturing technologies

18. How much did your company budget in 2018 for the implementation of new manufacturing technologies?

Less than 1% of sales

1-5% of sales

6-10% of sales

11-15% of sales

16-20% of sales

More than 20% of sales

19. How much has your company budgeted in 2019 for the implementation of new manufacturing technologies?

Less than 1% of sales

1-5% of sales

6-10% of sales

11-15% of sales

16-20% of sales

More than 20% of sales

20. Which function leads your evaluation and utilization of new manufacturing technologies?

- C-level team
- Production/operations
- Information Technology
- Research & Development
- Purchasing/procurement
- Cross-functional leadership
- External consultants or analysts
- Equipment and technology suppliers
- Other
- Don't know
- We don't evaluate emerging technologies

21. To whom does your company look for assistance in evaluating and implementing new manufacturing technologies? (check all that apply)

- Academia/universities
- National government
- State or local government
- Industry association
- National manufacturing associations
- State or local manufacturing associations
- External consultants or analysts
- Equipment suppliers
- Information technology suppliers
- Other
- We do not look for assistance
- We do not evaluate emerging technologies

Digital Enterprise

Digital Enterprise Technologies

22. Which of the following enterprise technologies are most likely to benefit your company over the next three years? (check all that apply)

- Analytics
- Artificial intelligence
- Big data/business analytics
- Blockchain
- Collaboration software
- Cloud technology
- Configure-Price-Quote (CPQ)
- Customer relationship management (CRM) technologies
- Digital Thread
- Digital Twin
- E-commerce
- Enterprise asset management (EAM)
- Enterprise resource planning (ERP)
- Human capital management (HCM) technologies
- Internet of Things
- Machine-to-enterprise network technologies
- Manufacturing execution systems (MES)
- Middleware
- Mobility in manufacturing
- Next-generation intelligent enterprise resource planning (iERP)
- Omnichannel technologies
- Product lifecycle management (PLM)
- Supply-chain management (SCM) technologies
- Other
- None of the above

23. To what extent has your company implemented the following digital enterprise technologies? (check one in each row)

No implementation	Some implementation	Extensive implementation	Planning to implement
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Analytics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Artificial intelligence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Big data/business analytics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blockchain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaboration software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cloud technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Configure-Price-Quote (CPQ)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Customer relationship management (CRM) technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital Thread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital Twin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E-commerce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enterprise asset management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enterprise resource planning (ERP)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Human capital management (HCM) technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet of Things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Machine-to-enterprise network technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufacturing execution systems (MES)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Middleware	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobility in manufacturing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Next-generation intelligent enterprise resource planning (iERP)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Omnichannel

technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product lifecycle management (PLM)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supply-chain management (SCM) technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. What effect have the implementation of new digital enterprise technologies had on the following company performance measures? (check one in each row)

	Worsened performance	No effect on performance	Somewhat improved performance	Significantly improved performance	No new technologies implemented
Customer satisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Customer support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment reliability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product innovation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Productivity/Costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Profitability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales/Revenues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security (systems and information)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service innovation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Throughput/Speed of operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supply chain performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. Why did your company choose to implement new digital enterprise technologies in the past year? (check all that apply)

- Replace outdated systems
- Recruit new talent
- Support new business models
- To keep up with competition
- Customers demanded it
- Business partners demanded it
- Other

26. What are the top four most important criteria to consider when selecting an ERP system (check up to four)

- Ease of use
- Support internal collaboration
- Ability to access through a mobile device
- Time to value
- Total cost of ownership
- Software costs
- Functionality
- Industry-specific capabilities
- Implementation templates
- Ease and speed of implementation
- Integration technologies and capabilities
- Must be an integrated suite
- Ability to tailor functionality without programming
- Cloud deployment model
- On-premise deployment model
- Global capabilities
- Return on investment
- None of the above

27. Which of the following best describes your current ERP system major version status?

- On the latest release

- One release behind
- Two releases behind
- Three releases behind
- Four or more versions behind

**28. What are your company's biggest challenges when implementing new digital enterprise technologies?
(check up all that apply)**

- Cost of new technologies
- Confidence in new technology capabilities
- Availability of new technologies
- Reliability of new technologies
- Management acceptance of new technologies
- Lack of understanding of use/application of new technologies for company
- Lack of internal resources to implement
- Talent to operate new technologies
- Interoperability of new technologies with legacy equipment and processes
- Maintenance of new technologies
- Safety issues related to new technologies
- Other
- No challenges
- We don't implement new digital enterprise technologies

29. How much did your company budget in 2018 for the implementation of new digital enterprise technologies?

- Less than 1% of sales
- 1-6% of sales
- 6-10% of sales
- 11-15% of sales
- 16-20% of sales
- More than 20% of sales

30. How much has your company budgeted in 2019 for the implementation of new digital enterprise technologies?

- Less than 1% of sales
- 1-6% of sales
- 6-10% of sales
- 11-15% of sales
- 16-20% of sales
- More than 20% of sales

31. Which function leads your evaluation and utilization of new digital enterprise technologies?

- C-level team
- Production/operations
- Information Technology
- Research & Development
- Purchasing/procurement
- Cross-functional leadership
- External consultants
- Equipment and technology suppliers
- Other
- Don't know
- We don't evaluate emerging technologies

32. To whom does your company look for assistance in evaluating and implementing new digital enterprise technologies? (check all that apply)

- Academia/universities
- National government
- State or local government
- Industry association
- National manufacturing associations
- State or local manufacturing associations
- External consultants
- Equipment suppliers
- Information technology suppliers
- Other
- We do not look for assistance

We do not evaluate emerging technologies

Enterprise Performances

Enterprise Performances

33. What is your company's gross profit percentage? [(revenue - cost of goods sold) / revenue] *Multiply by 100 and put the number below.*

(Enter a number only, percentage sign (%) not required)

34. How has gross profit changed in the past three years?

Increased more than 10%

Increased 6-10%

Increased 1-5%

No change

Decreased 1-5%

Decreased 6-10%

Decreased more than 10%

35. What is your company's customer retention rate? (% of customer retained from previous year)

(Enter a number only, percentage sign (%) not required)

36. How has customer retention changed in the past three years?

Increased more than 10%

Increased 6-10%

Increased 1-5%

No change

Decreased 1-5%

Decreased 6-10%

Decreased more than 10%

37. What is your company's complete-and-on-time delivery performance? (% of deliveries complete and on time)

(Enter a number only, percentage sign (%) not required)

38. How has complete-and-on-time delivery performance changed in the past three years?

Increased more than 10%

Increased 6-10%

Increased 1-5%

No change

Decreased 1-5%

Decreased 6-10%

Decreased more than 10%

39. What are your company's warranty costs as a percentage of sales?

(Enter a number only, percentage sign (%) not required)

40. How have warranty costs changed in the past three years?

Increased more than 10%

Increased 6-10%

Increased 1-5%

No change

Decreased 1-5%

Decreased 6-10%

Decreased more than 10%

41. What are your company's sales per employee (total sales / total employees)?

(Answer in U.S. dollars only – dollar sign, decimals, commas, etc. not required)

42. How have sales per employee changed in the past three years?

Increased more than 10%

Increased 6-10%

Increased 1-5%

No change

Decreased 1-5%

Decreased 6-10%

Decreased more than 10%

43. What percentage of employees exceed their metrics during performance reviews?

(Enter a number only, percentage sign (%) not required)

Disruptive Technologies - Incentive Information

If you would like to receive report(s) on the MPI Disruptive Technologies Study findings, please provide contact information below:

Name

Title

Company

Email address