



2013 Next Generation Manufacturing Study

Many U.S. manufacturers are reinventing themselves through new leadership, new strategies, and new support systems, regaining competitiveness — along with profits and jobs — lost during a decade of outsourcing and downsizing. The *2013 Next Generation Manufacturing Study* will outline how successful manufacturers are at creating new value by identifying the top performances and best practices necessary for world-class status in the 21st century.

The NGM Study is a biennial survey conducted by the Manufacturing Performance Institute (MPI) with the American Small Manufacturers Coalition (ASMC), an association of manufacturing extension centers that work to improve the innovation and productivity of America's manufacturing community. One ASMC program of primary focus is the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP) program. The Association for Manufacturing Excellence also is participating in this year's NGM Study.

Please complete this Study questionnaire to the best of your ability by September 11, 2013. You may participate either *anonymously* or *confidentially* (*explanations below*) based on the type of Study incentive you wish to receive. You also can download a PDF of the NGM questionnaire and mail it to NGMS, P.O. Box 4330, Dublin, OH 43016, or fax to 614-389-3816.

Study Incentives

NGM Performance Report — Confidential participation: To receive a free customized NGM Performance Report that compares your responses to all Study respondents and Study respondents similar to your organization (e.g., annual revenues, number of employees), please complete the online questionnaire and include contact information at the bottom of the questionnaire. Your responses will remain confidential — only MPI, which distributes the NGM Performance Report, will be able to identify your specific responses. Data will be disseminated only in aggregate form; no company-specific responses will be released.

NGM Data Report — Anonymous participation: Please complete this questionnaire and then provide contact information at a separate website that will be presented to you after you submit your questionnaire. The Data Report includes statistics on all Study questions. Your NGM Study responses will remain anonymous — no one will be able to identify your company with specific responses.

Profile

1. Which of the following describes your organization?

(check one, and then answer the remainder of the survey based on your selection below)

¹⁻¹ Company ² Division/unit of a larger company

2. Is your company public or privately held? (check one)

¹⁰⁰⁻¹ Public ² Private

3. Please indicate the state in which your organization is located. _____ ⁶⁶

4. Please indicate the primary product manufactured: _____ ²

5. How many years has your organization been in operation? ⁴

6. What are your approximate annual revenues? \$ _____ ⁵

7. Was your company profitable for the most recent fiscal year? ¹⁰¹⁻¹ Yes ² No

8. How many full-time employees (and equivalents)? ⁶

9. What is the age of your organization's chief executive?

⁷⁻¹ < 30 ² 30-40 ³ 41-50 ⁴ 51-60 ⁵ >60

10. Do you anticipate a planned succession of leadership in the next five years?

⁸⁻¹ Yes ² Maybe ³ No

11. What is your organization's investment in capital equipment as a percentage of sales (three-year average)?

²⁹⁻¹ <1% ² 1-5% ³ 6-10% ⁴ >10%

12. What is your organization's investment in information technologies (hardware and software) as a percentage of sales (three-year average)?

³⁸⁻¹ <1% ² 1-5% ³ 6-10% ⁴ >10%

13. Does your organization design the majority of products it manufactures? ²⁰⁰⁻¹ Yes ³ No

World-Class Customer-Focused Innovation

Develop, make, and market new products and services
that meet customers' needs at a pace faster than the competition

14. Rate the importance of customer-focused innovation to your organization's success over the next five years:

⁹⁻¹ 1=Not important ² 2 ³ 3 ⁴ 4 ⁵ 5=Highly important

15. Rate your organization's progress toward world-class customer-focused innovation:

¹⁰⁻¹ 1=No progress ² 2 ³ 3 ⁴ 4 ⁵ 5=World-class

Input Measures

16. What best describes your customer-focused innovation strategy?

- ¹⁰²⁻¹ No strategy
² Generic strategy with little or no functional involvement and buy-in
³ Company-specific strategy with some functional involvement and buy-in
⁴ Company-specific strategy with full functional involvement and buy-in

17. Does your organization have the *skilled innovation leadership and talent* (e.g., product engineers) and talent-development program to drive world-class customer-focused innovation into the next generation? (check one in each row)

- Leadership and talent ²⁰¹⁻¹ Yes ² No
Talent development program ²⁰²⁻¹ Yes ² No

18. What best describes the quality of your business systems and equipment to support world-class customer-focused innovation?

- ¹⁰⁴⁻¹ None
² Inadequate for current requirements
³ Adequate but limited to current requirements
⁴ State-of-the-art and able to provide long-term support

19. What percentage of sales is invested into new-product development/R&D?

- ¹²⁻¹ <1% ² 1-5% ³ 6-10% ⁴ >10%

20. What best describes your measurement system for reviewing return from customer-focused innovation?

- ¹³⁻¹ No measurement system per se or reviews
² Ad hoc monitoring of basic measures and ad hoc reviews
³ Company-specific metrics monitored regularly by operations staff
⁴ Regular monitoring and review of company-specific metrics by CEO and senior staff
⁵ Regular monitoring and review of company-specific metrics by CEO and senior staff and transparency and clarity throughout the organization

Output Measures

21. Approximately what percentage of annual sales are derived from products introduced in the past three years (new SKUs, not a product iteration or line extension)?

- ¹⁵⁻¹ <5% ² 5-25% ³ 26-50% ⁴ >50%

22. What percentage of R&D (by expense) is commercialized?

- ¹⁰⁵⁻¹ <25% ² 25-50% ³ 51-75% ⁴ >75%

23. What percentage of R&D (by expense) results in "game changing" market breakthroughs?

- ¹⁰⁶⁻¹ <5% ² 5-10% ³ 11-25% ⁴ >25%

24. What was your customer-retention rate over the past 12 months?

- ²⁰³⁻¹ <25% ² 25-50% ³ 51-75% ⁴ 76-90% ⁵ 91-99% ⁶ 100%

25. Which of the following best describes your organization's relationship with its customers?

- ²⁰⁴⁻¹ Buy and sell (e.g., cost and quality focus)
² Certification (e.g., broad qualifications established)
³ Cooperation (e.g., sharing product ideas, best practices)
⁴ Partnership (e.g., sharing resources, intellectual property, cost savings)

26. What is your organization's best practice for innovation? (briefly describe)

16

World-Class Engaged People/Human-Capital Acquisition, Development and Retention

Secure a competitive performance advantage by having superior systems in place to recruit, hire, develop, and retain talent

27. Rate the importance of human-capital acquisition, development and retention to your organization's success over the next five years:

- ¹⁷⁻¹ 1=Not important ² 2 ³ 3 ⁴ 4 ⁵ 5=Highly important

28. Rate your organization's progress toward world-class human-capital acquisition, development and retention:

- ¹⁸⁻¹ 1=No progress ² 2 ³ 3 ⁴ 4 ⁵ 5=World-class

Input Measures

29. What best describes your human-capital-management strategy?

- ¹⁰⁷⁻¹ No strategy
² Generic strategy with little or no functional involvement and buy-in
³ Company-specific strategy with some functional involvement and buy-in
⁴ Company-specific strategy with full functional involvement and buy-in

30. Does your organization have the *skilled HR leadership and talent* (e.g., recruiters, benefits experts) and *talent-development program* to drive world-class human-capital management into the next generation? (check one in each row)

- Leadership and talent ²⁰⁵⁻¹ Yes ² No
Talent development program ²⁰⁶⁻¹ Yes ² No

31. What best describes the quality of your business systems and equipment to support world-class HR?

- ¹⁰⁹⁻¹ None
² Inadequate for current requirements
³ Adequate but limited to current requirements
⁴ State-of-the-art and able to provide long-term support

32. What percentage of employees have the technical skills, problem-solving skills, and work ethic to excel in high-performance work teams?

- ¹¹⁰⁻¹ <25% ² 25-50% ³ 51-75% ⁴ 76-90% ⁵ >90%

33. How many formal training hours are devoted annually to each employee?

- ²⁰⁻¹ 8 or fewer ² 9-20 ³ 21-40 ⁴ >40

34. To what degree has your organization established skill standards and aligned training with employee mastery of these skill standards?

- ¹¹¹⁻¹ No established skill standards
² Skill standards and training alignment for a few positions
³ Skill standards and training alignment for majority of positions
⁴ Skill standards and training alignment for all positions

35. What best describes your measurement system for reviewing return from human-capital acquisition, development and retention?

- ²²⁻¹ No measurement system per se or reviews
² Ad hoc monitoring of basic measures and ad hoc reviews
³ Company-specific metrics monitored regularly by operations staff
⁴ Regular monitoring and review of company-specific metrics by CEO and senior staff
⁵ Regular monitoring and review of company-specific metrics by CEO and senior staff and transparency and clarity throughout the organization

36. Which strategy best describes your primary hiring process?

- ²⁰⁷⁻¹ Hiring led by department or function personnel
² Hiring led by internal HR department
³ Hiring led by temporary agency
⁴ Hiring led by outsourced HR firm
⁵ Other

37. To what extent does your organization partner with vocational schools, high schools, community colleges, universities, and similar institutions to nurture a manufacturing workforce?

- ²⁰⁸⁻¹ No partnering
² Some partnering
³ Moderate partnering
⁴ Extensive partnering

Output Measures

38. What is your company's sales per employee?

- ²⁰⁹⁻¹ < \$100,000 ² \$100,000-\$249,999 ³ \$250,000-\$400,000 ⁴ > \$400,000

39. What is your organization's annual labor turnover rate (number of voluntary and involuntary separations ÷ typical staffing level)?

- ²⁴⁻¹ 0% ² 0.1-1% ³ 1.1-5% ⁴ 5.1-10% ⁵ >10%

40. What percentage of the workforce has been with your organization for more than five years?

- ²¹⁰⁻¹ <25% ² 25-50% ³ 51-75% ⁴ 76-99% ⁵ 100%

41. What is your organization's best practice for human-capital development? (briefly describe)

World-Class Superior Processes/Improvement Focus

Record annual productivity and quality gains that exceed the competition through a companywide commitment to continuous improvement

42. Rate the importance of process improvement to your organization's success over the next five years:

²⁶⁻¹ 1=Not important ² 2 ³ 3 ⁴ 4 ⁵ 5=Highly important

43. Rate your organization's progress toward world-class processes and process improvement:

²⁷⁻¹ 1=No progress ² 2 ³ 3 ⁴ 4 ⁵ 5=World-class

Input Measures

44. What best describes your continuous-improvement (CI) strategy?

- ¹¹²⁻¹ No strategy
² Generic strategy with little or no functional involvement and buy-in
³ Company-specific strategy with some functional involvement and buy-in
⁴ Company-specific strategy with full functional involvement and buy-in

45. Does your organization have the *skilled process-improvement leadership and talent* (e.g., CI experts, black belts, lean experts) and talent-development program to drive continuous operations improvements into the next generation? (check one in each row)

Leadership and talent ²¹¹⁻¹ Yes ² No
Talent development program ²¹²⁻¹ Yes ² No

46. What best describes the quality of your business systems and equipment to support continuous operations improvements?

- ¹¹⁴⁻¹ None
² Inadequate for current requirements
³ Adequate but limited to current requirements
⁴ State-of-the-art and able to provide long-term support

47. What percentage of your workforce has been fully engaged in your organization's specific improvement method/approach?

²⁸⁻¹ <25% ² 25-50% ³ 51-75% ⁴ 76-99% ⁵ 100%

48. How does your organization capture operations knowledge/experiences, such as process improvements, production experiments, etc.?

- ²¹³⁻¹ No capture of operations knowledge/experiences
² Ad hoc capture of operations knowledge/experiences via manual and electronic formats
³ Occasional capture of operations knowledge/experiences via manual and electronic formats
⁴ Regular capture of operations knowledge/experiences principally via electronic formats

49. What best describes your measurement system for reviewing return from process improvements?

- ³⁰⁻¹ No measurement system per se or reviews
- ² Ad hoc monitoring of basic measures and ad hoc reviews
- ³ Company-specific metrics monitored regularly by operations staff
- ⁴ Regular monitoring and review of company-specific metrics by CEO and senior staff
- ⁵ Regular monitoring and review of company-specific metrics by CEO and senior staff and transparency and clarity throughout the organization

Output Measures

50. What percentage of deliveries reach customers in perfect order (on time, high quality, to all customer specifications)?

- ²¹⁴⁻¹ <80% ² 80-89% ³ 90-99% ⁴ 100%

51. How have your per-unit manufacturing costs (excluding purchased materials) changed over the past three years?

- ²¹⁵⁻¹ Decreased >10% ² Decreased 6-10% ³ Decreased 1-5% ⁴ No change
⁵ Increased 1-5% ⁶ Increased 6-10% ⁷ Increased >10%

52. Describe your customers' satisfaction with your overall performance.

- ³²⁻¹ Threatens to pull business because we don't match the competition
- ² Indifferent to buying our product or competitors
- ³ Preference for our products by virtue of price, quality, and delivery performance
- ⁴ Strong loyalty to our products due to ongoing trust in our organization's people and capabilities

53. By what percentage has sales per employee improved over the past three years (current year figure vs. three-years ago)?

- ²¹⁶⁻¹ <25% ² 25-50% ³ 51-75% ⁴ 76-100% ⁵ >100%

54. What is your organization's best practice for process improvement? (briefly describe)

34

World-Class Supply-Chain Management & Collaboration

Develop and manage supply chains and partnerships that provide flexibility, response time, and delivery performance that exceeds the competition

55. Rate the importance of supply-chain management and collaboration to your organization's success over the next five years:

- ³⁵⁻¹ 1=Not important ² 2 ³ 3 ⁴ 4 ⁵ 5=Highly important

56. Rate your organization's progress toward world-class supply-chain management and collaboration:

- ³⁶⁻¹ 1=No progress ² 2 ³ 3 ⁴ 4 ⁵ 5=World-class

Input Measures

57. What best describes your supply-chain strategy?

- ¹¹⁵⁻¹ No strategy
² Generic strategy with little or no functional involvement and buy-in
³ Company-specific strategy with some functional involvement and buy-in
⁴ Company-specific strategy with full functional involvement and buy-in

58. Does your organization have the *skilled supply-chain-management leadership and talent* (e.g., logistics engineers) and talent-development program to drive world-class supply-chain management into the next generation? (check one in each row)

- Leadership and talent ²¹⁷⁻¹ Yes ² No
Talent development program ²¹⁸⁻¹ Yes ² No

59. What best describes the quality of your business systems and equipment to support world-class supply-chain management?

- ¹¹⁷⁻¹ None
² Inadequate for current requirements
³ Adequate but limited to current requirements
⁴ State-of-the-art and able to provide long-term support

60. What best describes your ability to monitor supplier goods and behaviors throughout your entire supply chain?

- ²¹⁹⁻¹ No ability to monitor supply chain
² Limited ability to monitor supply chain
³ Moderate ability to monitor supply chain
⁴ Significant ability to monitor supply chain
⁵ Complete monitoring of supply chain

61. What percentage of staff time and resources is spent expediting, fire-fighting, resolving conflicts with customers and suppliers, etc. rather than strategic procurement and supply-chain planning and partnering?

- ¹¹⁸⁻¹ <5% ² 5-25% ³ 26-50% ⁴ >50%

62. What best describes your measurement system for reviewing return from supply-chain management and collaboration?

- ³⁹⁻¹ No measurement system per se or reviews
² Ad hoc monitoring of basic measures and ad hoc reviews
³ Company-specific metrics monitored regularly by operations staff
⁴ Regular monitoring and review of company-specific metrics by CEO and senior staff
⁵ Regular monitoring and review of company-specific metrics by CEO and senior staff and transparency and clarity throughout the organization

Output Measures

63. By approximately what percentage has total value of inventory throughout the supply chain for your primary product (furthest supplier to end customer) been reduced over the last three years?

- ⁴⁰⁻¹ <10% ² 10-25% ³ 26-50% ⁴ >50%

64. Which of the following best describes your organization's relationship with its suppliers?

- ²²⁰⁻¹ Buy and sell (e.g., cost and quality focus)
- ² Certification (e.g., broad qualifications established)
- ³ Cooperation (e.g., sharing product ideas, best practices)
- ⁴ Partnership (e.g., sharing resources, intellectual property, cost savings)

65. What percentage of supplier materials and components are delivered *precisely* to your specifications (e.g., quality, quantity, timing, labeling, packaging, etc.)?

- ²²¹⁻¹ <80% ² 80-89% ³ 90-99% ⁴ 100%

66. What is your organization's best practice for supply-chain management and collaboration? (briefly describe)

42

| |
|---|
| <p>World-Class Sustainability</p> <p>Design and implement waste and energy-use reductions at a level that provides superior cost performance and recognizable customer value</p> |
|---|

67. Rate the importance of sustainability to your organization's success over the next five years:

- ⁴³⁻¹ 1=Not important ² 2 ³ 3 ⁴ 4 ⁵ 5=Highly important

68. Rate your organization's progress toward world-class sustainability:

- ⁴⁴⁻¹ 1=No progress ² 2 ³ 3 ⁴ 4 ⁵ 5=World-class

Input Measures

69. What best describes your sustainability strategy?

- ¹¹⁹⁻¹ No strategy
- ² Generic strategy with little or no functional involvement and buy-in
- ³ Company-specific strategy with some functional involvement and buy-in
- ⁴ Company-specific strategy with full functional involvement and buy-in

70. Does your organization have the *skilled sustainability leadership and talent* (e.g., environmental engineers) and talent-development program to drive world-class sustainability into the next generation?

(check one in each row)

- Leadership and talent ²²²⁻¹ Yes ² No
- Talent development program ²²³⁻¹ Yes ² No

71. What best describes the quality of your business systems and equipment to support world-class sustainability?

- ¹²¹⁻¹ None
- ² Inadequate for current requirements
- ³ Adequate but limited to current requirements
- ⁴ State-of-the-art and able to provide long-term support

72. What best describes your measurement system for reviewing return from sustainability efforts?

- ⁴⁷⁻¹ No measurement system per se or reviews
- ² Ad hoc monitoring of basic measures and ad hoc reviews
- ³ Company-specific metrics monitored regularly by operations staff
- ⁴ Regular monitoring and review of company-specific metrics by CEO and senior staff
- ⁵ Regular monitoring and review of company-specific metrics by CEO and senior staff and transparency and clarity throughout the organization

Output Measures

73. What is your annual reduction in energy per unit of product output?

- ⁴⁸⁻¹ <10%
- ² 10-25%
- ³ 26-50%
- ⁴ >50%

74. What is your annual reduction in usage of non-recycled material per unit of product output?

- ⁴⁹⁻¹ <10%
- ² 10-25%
- ³ 26-50%
- ⁴ >50%

75. What percentage of your products (by sales volume) are completely recyclable/reusable?

- ⁵⁰⁻¹ <50%
- ² 50-75%
- ³ 76-89%
- ⁴ 90-99%
- ⁵ 100%

76. For what percentage of your SKUs have you calculated a carbon footprint?

- ²²⁴⁻¹ <50%
- ² 50-75%
- ³ 76-89%
- ⁴ 90-99%
- ⁵ 100%

77. What is your organization's best practice for sustainability? (briefly describe)

51

World-Class Global Engagement

Secure business advantages by having people, partnerships, and systems in place capable of engaging global markets and talents better than the competition

78. Rate the importance of global engagement to your organization's success over the next five years:

- ⁵²⁻¹ 1=Not important
- ² 2
- ³ 3
- ⁴ 4
- ⁵ 5=Highly important

79. Rate your organization's progress toward becoming a world-class global player:

- ⁵³⁻¹ 1=No progress
- ² 2
- ³ 3
- ⁴ 4
- ⁵ 5=World-class

Input Measures

80. What best describes your global strategy?

- ¹²²⁻¹ No strategy
- ² Generic strategy with little or no functional involvement and buy-in
- ³ Company-specific strategy with some functional involvement and buy-in
- ⁴ Company-specific strategy with full functional involvement and buy-in

81. Does your organization have *skilled overseas leadership and talent* and talent-development program to drive world-class global engagement into the next generation? (check one in each row)

Leadership and talent ²²⁵⁻¹ Yes ² No
Talent development program ²²⁶⁻¹ Yes ² No

82. What best describes the quality of your business systems and equipment to support world-class global engagement?

¹²⁴⁻¹ None
² Inadequate for current requirements
³ Adequate but limited to current requirements
⁴ State-of-the-art and able to provide long-term support

83. What percentage of your total direct workforce is located overseas and/or located domestically and responsible for global business activities?

⁵⁴⁻¹ 0% ² 1-25% ³ 26-50% ⁴ >50%

84. What best describes your measurement system for reviewing return from global engagement?

⁵⁵⁻¹ No measurement system per se or reviews
² Ad hoc monitoring of basic measures and ad hoc reviews
³ Company-specific metrics monitored regularly by operations staff
⁴ Regular monitoring and review of company-specific metrics by CEO and senior staff
⁵ Regular monitoring and review of company-specific metrics by CEO and senior staff and transparency and clarity throughout the organization

Output Measures

85. What percentage of sales dollar volume comes from outside the United States?

²²⁷⁻¹ <10% ² 10-24% ³ 25-49% ⁴ >50%

86. By what percentage has dollar volume of sales outside the United States changed over the past three years?

⁵⁶⁻¹ <25% ² 25-50% ³ 51-100% ⁴ >100%

87. In how many countries outside of the United States does your organization operate or partner in production facilities?

⁵⁷⁻¹ 0 ² 1-5 ³ 6-10 ⁴ >10

88. In how many countries outside of the United States does your organization have sales and/or distribution facilities?

⁵⁸⁻¹ 0 ² 1-5 ³ 6-10 ⁴ >10

89. What is your organization's best practice for attaining global engagement? (briefly describe)

Going Forward

90. To what extent does your company get support from outside resources for the following activities?

(check one in each row)

| | Never | Rarely | As needed | Ongoing guidance and support |
|--|--------------------------------|----------------------------|----------------------------|------------------------------|
| Strategic planning | 125-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Innovation/R&D | 126-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Workforce skills development | 127-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Operations improvement (e.g., lean) | 128-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Supply-chain development | 129-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Sustainability initiatives | 130-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Global sales and/or procurement | 131-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Business development | 132-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Regulatory/compliance issues | 133-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Government credits/grants | 134-1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |

91. If you have used outside resources, which of the following have positively impacted your company?

(check all that apply)

- 135 Industry association
- 136 National manufacturing association
- 137 State manufacturing associations (including MEPS)
- 138 Local/municipal manufacturing associations
- 139 Universities/colleges
- 140 Consulting firms
- 141 Other
- 142 No positive impact

92. How is senior leadership involved outside of your company? (check all that apply)

- 143 For-profit board of directors position
- 144 Leadership or board position with civic or charitable organization
- 145 Leadership or board position with industry association
- 146 Leadership or board position with national manufacturing association
- 147 Leadership or board position with state manufacturing association or MEP
- 148 Leadership or board position with local manufacturing association
- 149 Leadership, board or teaching position with university/college
- 150 No outside involvement

If you want a free customized NGM Performance Report that compares your responses to all Study respondents as well as to Study respondents similar to your organization, please complete all the information below.

Name _____

Title _____

Company _____

Address _____

City, State, ZIP _____

Email _____

Note: If you want your responses to remain anonymous, provide contact information at www.NGMStudyDataReport.com, and you will receive a non-customized Data Report of Study