



2011 Next Generation Manufacturing Study

Manufacturing must continue to transform in order to remain competitive. Leadership, strategies, and support systems must change as well to help organizations become world-class manufacturers. The *2011 Next Generation Manufacturing Study* provides a framework for understanding Next Generation Manufacturing (NGM) by identifying competitive performances and best practices for achieving 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.

Please complete this Study questionnaire to the best of your ability by June 21, 2011. You may participate either *anonymously* or *confidentially* (*explanations below*) based on the type of Study incentive you wish to receive. Mail your completed questionnaire to NGMS, P.O. Box 4330, Dublin, OH 43016, or fax to 614-389-3816. (You may also complete the Study questionnaire online at: www.NGMStudy.com).

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 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?

(i.e., the state in which you would like your responses grouped)

_____ 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? (check one)

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? (check one)

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?

(check one)

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)? (check one)

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)?

(check one)

38-1 <1%

2 1-5%

3 6-10%

4 >10%

Customer-Focused Innovation

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

13. Rate the importance of customer-focused innovation to your organization's success over the next five years: (check one)

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

14. Rate your organization's progress toward world-class customer-focused innovation: (check one)

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

_____ Input Measures _____

15. What best describes your customer-focused innovation strategy? (check one)

- 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

16. 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)

- 103-1 Insufficient talent and no development program
2 Sufficient talent but no development program
3 Insufficient talent but a development program in place
4 Sufficient talent and a development program in place

17. What best describes the quality of your business systems and equipment to support world-class customer-focused innovation? (check one)

- 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

18. What percentage of sales is invested into new-product development/R&D? (check one)

12-1 <1% 2 1-5% 3 6-10% 4 >10%

19. What best describes your measurement system for reviewing return from custom-focused innovation? (check one)

- 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

20. How many new products as a percentage of total SKUs are launched annually (count only new SKUs, not a product iteration or line extension)? (check one)

- 14-1 <5% 2 5-10% 3 11-20% 4 >20%

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

- 15-1 <5% 2 5-25% 3 26-50% 4 >50%

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

- 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? (check one)

- 106-1 <5% 2 5-10% 3 11-25% 4 >25%

24. What is your organization’s best practice for innovation? (briefly describe)

16

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

25. Rate the importance of human-capital acquisition, development and retention to your organization’s success over the next five years: (check one)

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

26. Rate your organization’s progress toward world-class human-capital acquisition, development and retention: (check one)

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

27. What best describes your human-capital-management strategy? (check one)

- 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

28. 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)

- 108-1 Insufficient talent and no development program
- 2 Sufficient talent but no development program
- 3 Insufficient talent but a development program in place
- 4 Sufficient talent and a development program in place

29. What best describes the quality of business systems and equipment to support world-class HR? (check one)

- 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

30. What percentage of employees have the technical skills, problem-solving skills, and work ethic to excel in high-performance work teams? (check one)

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

31. How many formal training hours are devoted annually to each employee? (check one)

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

32. To what degree has your organization established skill standards and aligned training with employee mastery of these skill standards? (check one)

- 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

33. What best describes your measurement system for reviewing return from human-capital acquisition, development and retention? (check one)

- 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

34. What is your value-added per employee

([sales – cost of materials] ÷ number of employees)? (check one)

- 23-1 < \$75,000 2 \$75,000-\$125,000 3 \$125,001-\$175,000 4 > \$175,000

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

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

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

25

Superior Processes/Improvement Focus

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

37. Rate the importance of process improvement to your organization's success over the next five years: (check one)

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

38. Rate your organization's progress toward world-class processes and process improvement: (check one)

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

39. What best describes your continuous-improvement (CI) strategy? (check one)

- 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

40. 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)

- 113-1 Insufficient talent and no development program
2 Sufficient talent but no development program
3 Insufficient talent but a development program in place
4 Sufficient talent and a development program in place

41. What best describes the quality of business systems and equipment to support continuous operations improvements? (check one)

- 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

42. What percentage of your workforce has been fully engaged in your organization's specific improvement method/approach? (check one)

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

43. What best describes your measurement system for reviewing return from process improvements? (check one)

- 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

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

- 31-1 <80% 2 80-90% 3 91-95% 4 96-98% 5 >98%

45. 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

46. By what percentage has productivity (i.e., value add) improved over the past three years (current year figure vs. three-years ago)? (check one)

- 33-1 <25% 2 25-50 3 51-75% 4 76-100% 5 >100%

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

Supply-Chain Management & Collaboration

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

48. Rate the importance of supply-chain management and collaboration to your organization's success over the next five years: (check one)

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

49. Rate your organization's progress toward world-class supply-chain management and collaboration: (check one)

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

_____ Input Measures _____

50. What best describes your supply-chain strategy? (check one)

- 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

51. 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)

- 116-1 Insufficient talent and no development program
2 Sufficient talent but no development program
3 Insufficient talent but a development program in place
4 Sufficient talent and a development program in place

52. What best describes the quality of business systems and equipment to support world-class supply-chain management? (check one)

- 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

53. 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? (check one)

118-1 <5% 2 5-25% 3 26-50% 4 >50%

54. What best describes your measurement system for reviewing return from supply-chain management and collaboration? (check one)

- 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

55. What best describes your end-to-end supply chain's ability to respond to unexpected customer demand for existing products? (check one)

- 67-1 Major delays communicating demand signal throughout chain and most suppliers struggle to efficiently meet demand
— standard delivery times dramatically exceeded and/or excessive inventory
2 Minor delays in communicating demand signal throughout chain and some suppliers struggle to efficiently meet demand
— standard delivery time exceeded and/or too much inventory
3 Efficient communication of demand signal throughout chain with most suppliers efficiently satisfying demand
— standard delivery times nearly met and right-sized inventories
4 Real-time communication of demand signal and entire supply chain flexible to demand spikes
— standard delivery times consistently met and just-in-time inventories

56. 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? (check one)

- 40-1 <10% 2 10-25% 3 26-50% 4 >50%

57. How is your supply chain a competitive advantage in terms of flexibility and speed to the marketplace? (check one)

- 41-1 Suppliers regularly measured on cost, quality, and delivery performance
2 Suppliers regularly measured on cost, quality, and delivery performance as well as total acquisition cost
3 Suppliers regularly measured on cost, quality, and delivery performance as well as total acquisition cost and “soft” qualities (e.g., trust, flexibility)
4 Strategic suppliers and customers are active participants in our operations, continuous improvement, and product development efforts
5 Strategic suppliers and customers are active participants in our operations, continuous improvement, and product development efforts and participate fully in strategic planning and identifying and responding to new markets

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

Sustainability

Design and implement waste and energy-use reductions at a level that provides superior cost performance and recognizable customer value

59. Rate the importance of Sustainability to your organization's success over the next five years: (check one)

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

60. Rate your organization's progress toward world-class Sustainability: (check one)

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

Input Measures

61. What best describes your sustainability strategy? (check one)

- 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

62. 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)

- 120-1 Insufficient talent and no development program
2 Sufficient talent but no development program
3 Insufficient talent but a development program in place
4 Sufficient talent and a development program in place

63. What best describes the quality of business systems and equipment to support world-class sustainability? (check one)

- 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

64. What best describes your measurement system for reviewing return from sustainability efforts? (check one)

- 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

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

(check one)

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

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

(check one)

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

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

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

68. What is your organization's best practice for sustainability?

(briefly describe)

51

Global Engagement

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

69. Rate the importance of global engagement to your organization's success over the next five years: (check one)

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

70. Rate your organization's progress toward becoming a world-class global player: (check one)

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

Input Measures

71. What best describes your global strategy? (check one)

- 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

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

- 123-1 Insufficient talent and no development program
2 Sufficient talent but no development program
3 Insufficient talent but a development program in place
4 Sufficient talent and a development program in place

73. What best describes the quality of business systems and equipment to support world-class global engagement? (check one)

- 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

74. What percentage of your total direct workforce is located overseas and/or located domestically and responsible for global business activities? (check one)

- 54-1 0% 2 1-25% 3 26-50% 4 >50%

75. What best describes your measurement system for reviewing return from global engagement? (check one)

- 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

76. By what percentage has dollar volume of sales outside the United States changed over the past three years? (check one)

- 56-1 <25% 2 25-50% 3 51-100% 4 >100%

77. In how many countries outside of the United States does your organization operate or partner in production facilities? (check one)

- 57-1 0 2 1-5 3 6-10 4 >10

78. In how many countries outside of the United States does your organization have sales and/or distribution facilities? (check one)

- 58-1 0 2 1-5 3 6-10 4 >10

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

59

GOING FORWARD

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

Strategic planning? (check one)

- 125-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Innovation/R&D? (check one)

- 126-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Workforce skills development? (check one)

- 127-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Operations improvement (e.g., lean)? (check one)

- 128-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Supply-chain development? (check one)

- 129-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Sustainability initiatives? (check one)

- 130-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Global sales and/or procurement? (check one)

- 131-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Business development? (check one)

- 132-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Regulatory/compliance issues? (check one)

- 133-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

Government credits/grants? (check one)

- 134-1 Never
2 Rarely
3 As needed
4 Ongoing guidance and support

81. 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

82. 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

83. 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.

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 statistics.

Name _____
Title _____
Company _____
Address _____
City, State, ZIP _____
Email _____