



# 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)				
4.	. Please indicate the primary product manufactured:				
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				
10. Do you anticipate a planned succession of leadership in the next five years? (check one)					
	8-1 Yes 2 Maybe 3 No				
1	1. 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%				
1:	2. 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 importa success over the				to your orga	nization's
9-1 1=Not importa	ant 2 2	3 3	4 4	₅∏ 5=HigI	hly important
14. Rate your organ innovation: (che		ress toward	world-class	s customer-f	ocused
10-1 1=No progre	ss 2 2	з 3	4 4	5 <u></u> 5=Woı	¹ld-class
		- Input Meas	ures ———		
15. What best descr	_	tomer-focus	ed innovati	on strategy?	' (check one)
₃ Company-s	ategy with little pecific strategy pecific strategy	y with some fo	unctional inv	olvement and	l 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)					
₃ Insufficient	lent but no de	velopment provelopment province velopment velopment province velopment province velopment province velopment province velopment	ogram ogram in pla		
17. What best descr support world-c					uipment to
₃ Adequate b	for current req ut limited to cu e-art and able t	irrent requirer		ort	
18. What percentage (check one)	e of sales is i	nvested into	new-produc	ct developme	ent/R&D?
12-1 < 1%	2 1-5%	, 0	з 6-10%	, 0	4 > 10%

custom-focused		_	steili ioi ie	viewing rett	
₃ Company-s ₄ Regular mo and senior s ₅ Regular mo	nitoring of basic m pecific metrics mo nitoring and revie	easures and onitored regree of comparts was of comparts was of comparts of com	d ad hoc revularly by op ny-specific	erations staf metrics by C metrics by C	EO and
	C	output Meas	ures ——		
20. How many new posterior (count only new	· -	_			
14-1 < 5%	2 5-10%		з 11-20%	<b>%</b>	4_ >20%
21. Approximately wintroduced in the iterations or line	e past three year	s (count or			•
15-1 < 5%	2 5-25%		з 26-50%	o o	4 >50%
22. What percentage	e of R&D (by exp	ense) is co	mmercializ	zed? (check	one)
105-1 <25%	2 25-50%		з 51-75%	o o	4 > 75%
23. What percentage of R&D (by expense) results in "game changing" market breakthroughs? (check one)					
106-1 < 5%	2 5-10%		з <u>11-25</u> %		4 >25%
24. What is your organization's best practice for innovation? (briefly describe)					
Engaged Peopl Secure a competitive	e/Human-Capita re performance ac recruit, hire, d	dvantage by	having sup	erior system	
25. Rate the importate to your organization		•	•	•	
17-1 1=Not import	tant 2 2	3 3	4 4	₅ <u> </u>	hly important
26. Rate your organ acquisition, deve				human-cap	oital
18-1 1=No progre	ss 2 2	₃□ 3	4 4	5 <u></u> 5=Wo	rld-class

		Input Measures -		
27. What best descri	bes your huma	an-capital-mana	gement strategy	? (check one)
₃∏ Company-sr	pecific strategy v	with some functio	volvement and bu nal involvement a I involvement and	nd buy-in
28. Does your organ recruiters, benef class human-cap	its experts) and	d talent-develop	ment program to	drive world-
₃☐ Insufficient t	lent but no deve alent but a deve	velopment progra lopment program elopment program opment program	n in place	
29. What best descri			stems and equip	ment to
	ut limited to curre	rements ent requirements provide long-term		
30. What percentage				
skills, and work				· ·
110-1 <25%	2 25-50%	₃∏ 51-75%	4 76-90%	5□ >90%
31. How many forma (check one)	l training hour	s are devoted ar	nnually to each e	mployee?
20-1 8 or fewer	2 9-20	3	21-40	4 >40
₃∏ Skill standar	ployee mastery ned skill standard rds and training rds and training	of these skill states ds alignment for a fe	candards? (check ew positions jority of positions	
33. What best descri				
human-capital ad	•	•	tention? (check of	one)
	ment system pe	er se or reviews measures and ad	hoc reviews	
	•		y by operations st	aff
₄∏ Regular mor and senior s		ew of company-s	pecific metrics by	CEO
₅∏ Regular moı	nitoring and revi		pecific metrics by	

		<ul> <li>Output Mea</li> </ul>	sures ——		
34. What is your value ([sales – cost of m	aterials] ÷ r	umber of em	• • •	,	> \$175,000
35. What is your orga voluntary and inve				•	
24-1 0% 2	] 0.1-1%	з <u>П</u> 1.1-5%	<b>%</b> 4□	5.1-10%	5□ >10%
<b>36. What is your orga</b> (briefly describe)	nization's b	est practice f	or human-d	capital develo	
					25
	Superior Pro	cesses/Impr	ovement F	ocus	
-	Record annual productivity and quality gains that exceed the competition through a companywide commitment to continuous improvement				
37. Rate the importan success over the	•	•	•	organization	's
26-1 1=Not importa	nt 2 2	з <u></u> 3	4 4	₅∏ 5=High	nly important
38. Rate your organiz improvement: (che		ress toward	world-class	s processes a	and process
27-1 1=No progress	2 2	з <u></u> 3	4 4	5 <u></u> 5=Wor	ld-class
		- Input Measu	ıres ———		
39. What best describ	es your con	tinuous-impi	rovement (	CI) strategy?	(check one)
Generic strategy with little or no functional involvement and buy-in Company-specific strategy with some functional involvement and buy-in Company-specific strategy with full functional involvement and buy-in					
40. Does your organize talent (e.g., CI exports program to drive of generation?	erts, black b continuous (	oelts, lean ex	perts) and	talent-develo	pment
₃ Insufficient ta	nt but no dev lent but a de	levelopment p velopment pro velopment pro elopment prog	gram gram in pla		

			y of business sys s improvements?	(check one)	ent to
114-1 2 3 4	Adequate		irements rent requirements provide long-term	support	
orga			orce has been fu ement method/ap	lly engaged in you proach?	r
28-1	<25%	2 25-50%	з 51-75%	4 76-99%	5□ 100%
		cribes your meas		for reviewing retu	rn from
2 3 4	Ad hoc mo Company- Regular m and senior Regular m	specific metrics r onitoring and rev staff onitoring and rev	measures and ad nonitored regularly iew of company-spiew of company-spiew of company-sp	hoc reviews  by operations staff becific metrics by CE becific metrics by CE becific metrics by CE becific metrics by CE	EO EO and
	t norconta	no of doliveries	Output Measures reach customers		
				ions)? (check one)	
31-1	<80%	2 80-90%	₃∏ 91-95%	4 96-98%	5 > 98%
32-1 2 3	Threatens Indifferent Preference and delive Strong loy	to pull business to buying our pro e for our products ry performance	because we don't loduct or competitors by virtue of price,	quality,	
_	•	•	•	add) improved ove e-years ago)? (che	
33-1	<25%	2 25-50	₃ 51-75%	4 76-100%	5 > 100%
	t is your or fly describe	•	st practice for pro	ocess improvemen	<b>t?</b>

# **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 imp. organization				_		ion to your
	35-1	nportant	2 2	з <u></u> 3	4 4	5 <u></u> 5=Hig	hly important
49	. Rate your oi managemen					s supply-cha	iin
	36-1 1=No pr	ogress	2 2	з <u></u> 3	4 4	5 <u></u> 5=Wo	rld-class
				- Input Meas	sures ———		
50	. What best d	escribes	your sup	ply-chain s	trategy? (ch	eck one)	
	₃∏ Compa	c strategy ny-speci	fic strategy	with some	functional inv	ent and buy- olvement and rement and b	d buy-in
51	. Does your o and talent (e world-class	g., logi	stics engi	neers) and t	talent-develo	pment prog	ram to drive
	2 Sufficie 3 Insuffic	nt talent ient taler	but no dev				
52	. What best dest descri						ent to
	₃∏ Adequa	ate but lir		rrent require	ments ig-term suppo	ort	
53	. What percer resolving co procuremen	nflicts v	vith custo	mers and s	uppliers, etc	. rather than	strategic
1	18-1 < 5%		2 5-25	%	з 26-50%	6	4 >50%

		-	oration? (check one)	ng return nom
2 3 4	Ad hoc monitori Company-speci Regular monitor and senior staff Regular monitori	fic metrics monitore ring and review of c ring and review of c	reviews res and ad hoc reviews red regularly by operation company-specific metric company-specific metric clarity throughout the or	ons staff cs by CEO cs by CEO and
		——— Output	Measures ———	
		-	supply chain's ability sting products? (chec	<u>-</u>
34	suppliers strug — standard de ] Minor delays in suppliers strug — standard de ] Efficient comm suppliers effici — standard de ] Real-time com to demand spil — standard de	rgle to efficiently mealivery times dramated communicating designed to efficiently mealivery time exceeds aunication of demandalivery times nearly amunication of demandalivery times nearly amunication of demandalivery times consists	cically exceeded and/or emand signal througho eet demand ed and/or too much inve nd signal throughout ch nand met and right-sized inversed inversed and signal and entire so	excessive inventory ut chain and some entory eain with most entories upply chain flexible me inventories
supp	ly chain for you		s total value of invent t (furthest supplier to s? (check one)	
40-1	:10%	2 10-25%	₃ 26-50%	4_ >50%
		chain a competitive place? (check one)	ve advantage in terms )	of flexibility and
2 3 4 5	Suppliers regulas well as tota Suppliers regulas well as tota Strategic suppliers continuous implies suppliers regular continuous implies supplies supplies supplies implies implies implies in strategic supplies in strategic	larly measured on of acquisition cost alarly measured on of acquisition cost and acquisition cost are liers and customers or overment, and propositions and customers or overment, and propositions and customers or overment, and propositions and identity acquired to acquire acquired to acquired to acquire acquired to acquired to acquire acquired to acqu	cost, quality, and deliver cost, quality, and deliver cost, quality, and deliver and "soft" qualities (e.g., as are active participants duct development effor a are active participants duct development effor attifying and responding	ery performance ery performance trust, flexibility) s in our operations, rts s in our operations, rts and participate to new markets
	is your organi boration? (brief		tice for supply-chain	management and

# 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 success over the ne			•	ation's	
43-1 1=Not important	2 2	₃ 3	4 4	₅ 5=Highly importar	٦t
60. Rate your organizati (check one)	on's prog	ress toward	world-clas	s Sustainability:	
44-1 1=No progress	2 2	3 <u></u> 3	4 4	₅⊡ 5=World-class	
		- Input Measu	ires ———		
61. What best describes	your sus	tainability st	rategy? (ch	neck one)	
	fic strateg	y with some fu	nctional inv	nent and buy-in volvement and buy-in vement and buy-in	
62. Does your organizat (e.g., environmental world-class sustaina	engineer	s) and talent-	developme	ent program to drive	
Insufficient talen  Insufficient talent  Insufficient talent  Insufficient talent  Insufficient talent	but no de nt but a de	velopment provelopment pro	gram gram in pla		
63. What best describes support world-class	•	•	-	and equipment to	
None  None  None  Adequate for control  State-of-the-art	nited to cu	irrent requirem		ort	
64. What best describes sustainability efforts	•	•	stem for r	eviewing return from	
and senior staff	ng of basion fic metrics ring and re	measures ar monitored reg view of compa	d ad hoc regularly by o	perations staff metrics by CEO	
<u> </u>	-	•	• •	metrics by CEO and the organization	

	Output Measures				
65. What is your ar (check one)	nnual reduc	tion in enerç	gy per unit	of product out	put?
48-1 < 10%	2 10	0-25%	з 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	0-25%	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 or (briefly describe)	_	's best pract	ice for sust	ainability?	
					51
		Global Eng	jagement		
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 impo	rtant 2 2	2 ₃□ 3	4	4 5 <u></u> 5=H	ighly important
70. Rate your organization's progress toward becoming a world-class global player: (check one)					
53-1 1=No progr	ess 2 2	2 3 3 3	4	4 5 <u></u> 5=W	orld-class
		—— Input M	easures —		
71. What best describes your global strategy? (check one)					
No strategy  Generic strategy with little or no functional involvement and buy-in  Company-specific strategy with full functional involvement and buy-in  Company-specific strategy with full functional involvement and buy-in					

development p		drive world-class global					
2 Sufficient 3 Insufficien							
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							
-	_	t workforce is located ov le for global business ac					
54-1 0%	2 1-25%	₃ 26-50%	4 >50%				
	cribes your measuren ment? (check one)	nent system for reviewir	ng return from				
2 Ad hoc mo 3 Company- 4 Regular m and senion 5 Regular m	specific metrics monitoring and review or staff onlitoring and review or onlitoring and review or	or reviews cures and ad hoc reviews cred regularly by operation f company-specific metric f company-specific metric d clarity throughout the org	s by CEO s by CEO and				
	——— Outp	ut Measures ————					
	ntage has dollar volui he past three years?	me of sales outside the l (check one)	United States				
56-1 <25%	2 25-50%	₃ 51-100%	4 >100%				
_	ountries outside of th ner in production fac	e United States does yo ilities?	ur organization				
57-1 0	2 1-5	₃☐ 6-10	4 >10				
	ountries outside of th /or distribution facilit	ne United States does yo ies? (check one)	ur organization				
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)					
Never  Rarely  As needed  Ongoing guidance and support					
Operations improvement (e.g., lean)? (check one)					
Never  Rarely  As needed  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)					
Never    Never   Never					
Global sales and/or procurement? (check one)					

Never    Never   Rarely   As needed   Ongoing guidance and support   Never   N
Business development? (check one)
Never    Never
Regulatory/compliance issues? (check one)
Never    Never
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)
Industry association  National manufacturing association  State manufacturing associations (including MEPs)  Local/municipal manufacturing associations  Universities/colleges  Consulting firms  Other  No positive impact
82. How is senior leadership involved outside of your company? (check all that apply)
For-profit board of directors position  Leadership or board position with civic or charitable organization  Leadership or board position with industry association  Leadership or board position with national manufacturing association  Leadership or board position with state manufacturing association or MEP  Leadership or board position with local manufacturing association  Leadership, board or teaching position with university/college  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	