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21st Century Supply Chain Survey Data

WIRED Task 2.1

Prepared by Antelope Valley College



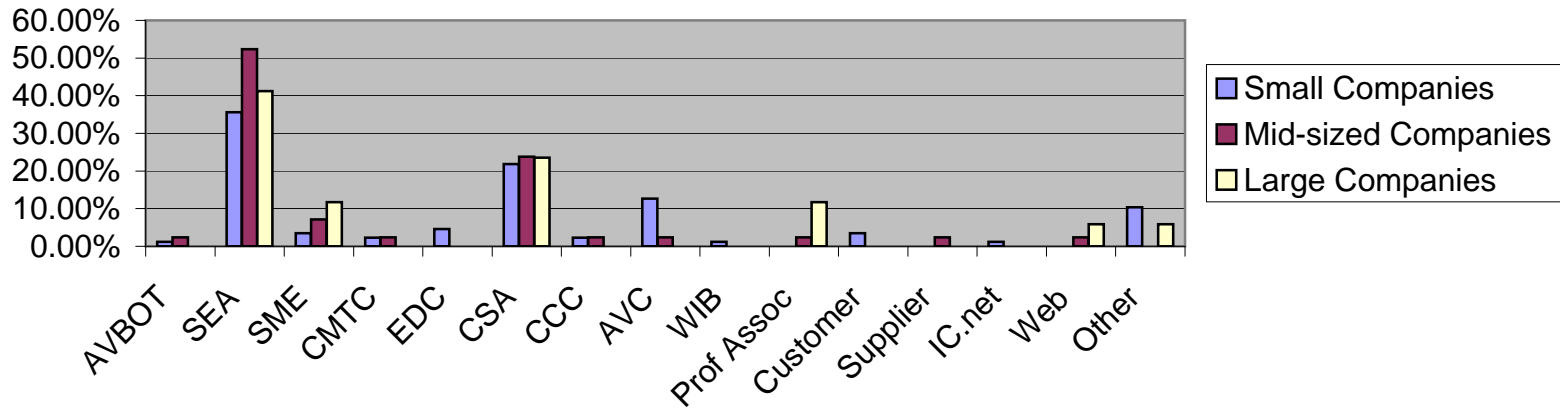
www.InnovateCalifornia.net



21st Century Supply Chain Transformation Survey Data

How were you referred to this survey?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
AVBOT Antelope Valley Board of Trade	1.15%	2.38%	0.00%	1.30%
Supplier Excellence Alliance	35.63%	52.38%	41.18%	40.26%
SME Society of Manufacturing Engineers	3.45%	7.14%	11.76%	5.84%
CMTC CA Manufacturing Tech.Consulting	2.30%	2.38%	0.00%	1.95%
Economic Development Corporation	4.60%	0.00%	0.00%	2.60%
CSA California Space Authority	21.84%	23.81%	23.53%	23.38%
California Community Colleges	2.30%	2.38%	0.00%	1.95%
AVC Antelope Valley College	12.64%	2.38%	0.00%	7.79%
Workforce Investment Board	1.15%	0.00%	0.00%	1.30%
Professional association	0.00%	2.38%	11.76%	2.60%
One of our customers	3.45%	0.00%	0.00%	1.95%
One of our suppliers	0.00%	2.38%	0.00%	0.65%
InnovateCalifornia.net	1.15%	0.00%	0.00%	0.65%
Web Search	0.00%	2.38%	5.88%	1.30%
Other (please specify)	10.34%	0.00%	5.88%	6.49%

How were you referred to this survey?

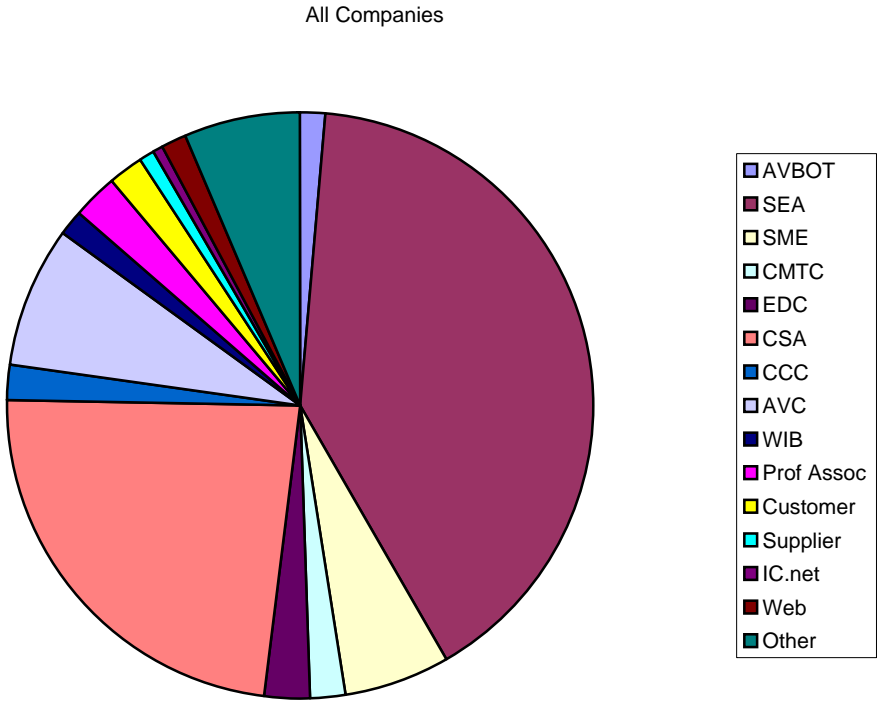


21st Century Supply Chain Transformation Survey Data

Web Search
 Economic Development Corporation
 AVC Antelope Valley College
 Supplier Excellence Alliance
 Professional association
 InnovateCalifornia.net
 WTAAC
 USC
 Western TAAC
 Don't know
 Workforce Investment Board
 CMTC California Manufacturing Technology
 Consulting
 California Community Colleges
 AVBOT Antelope Valley Board of Trade
 unknown

South Bay Economic Development Partnership
 SAS Supplier Symposium
 One of our customers
 SBEDP
 One of our suppliers

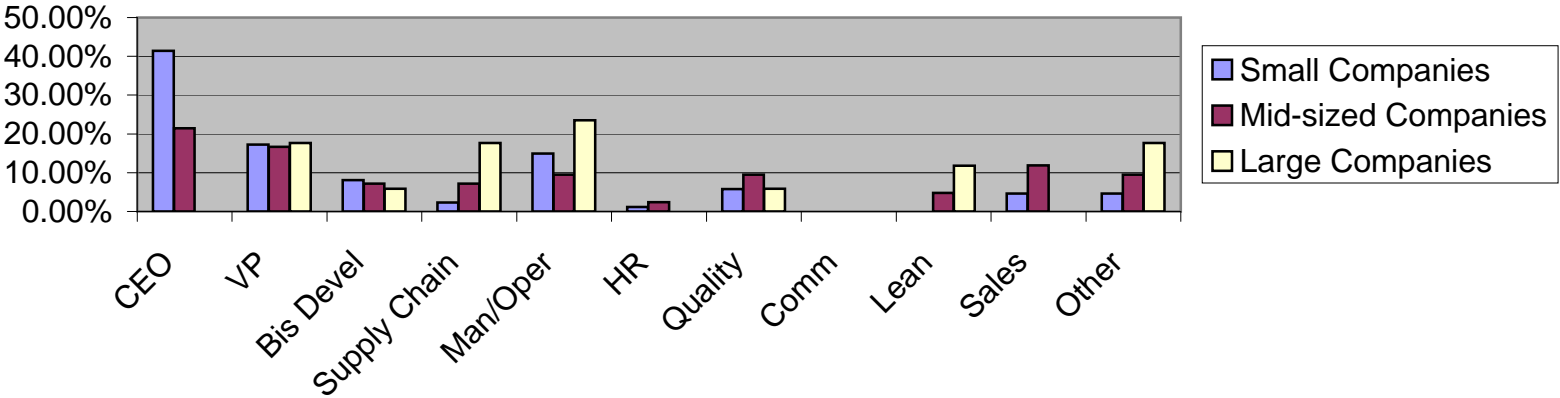
Email
 CSA California Space Authority
 SME Society of Manufacturing Engineers



21st Century Supply Chain Transformation Survey Data

What is your role in your company?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
CEO/President	41.38%	21.43%	0.00%	30.52%
Vice President/Management	17.24%	16.67%	17.65%	17.53%
Business Development	8.05%	7.14%	5.88%	7.14%
Supply Chain/Procurement	2.30%	7.14%	17.65%	5.19%
Manufacturing/Operations	14.94%	9.52%	23.53%	13.64%
Human Resources	1.15%	2.38%	0.00%	1.95%
Quality Assurance	5.75%	9.52%	5.88%	7.14%
Communications	0.00%	0.00%	0.00%	0.00%
Lean	0.00%	4.76%	11.76%	3.25%
Sales	4.60%	11.90%	0.00%	6.49%
Other (please specify)	4.60%	9.52%	17.65%	7.14%

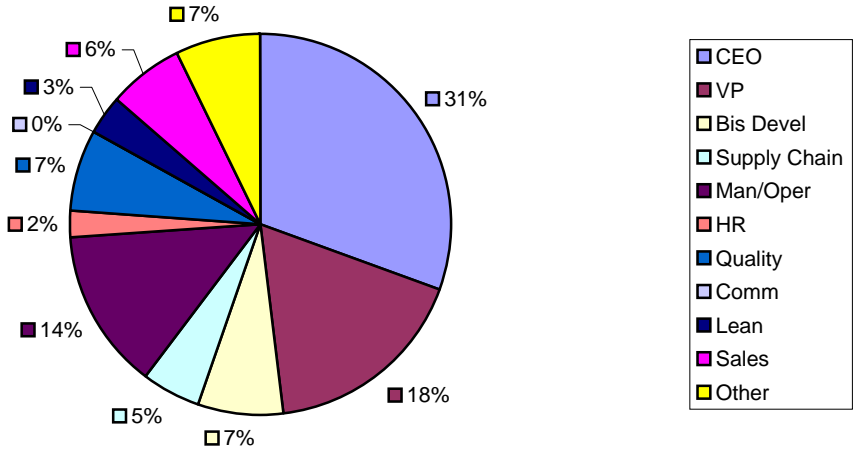
What is your role in you company?



21st Century Supply Chain Transformation Survey Data

Manufacturing/Operations
 Quality Assurance
 Advance Manufacturing
 manuf engineer
 CEO/President
 Business Development
 Vice President/Management
 Human Resources
 Engineering Sales Mgr.
 Sales
 CTO
 Lean
 Supply Chain/Procurement
 Procurement/Operations/Quality
 Technology Development Director
 Director Edu
 Applications Engineering
 Teacher, FIRST Robotics Program
 Training

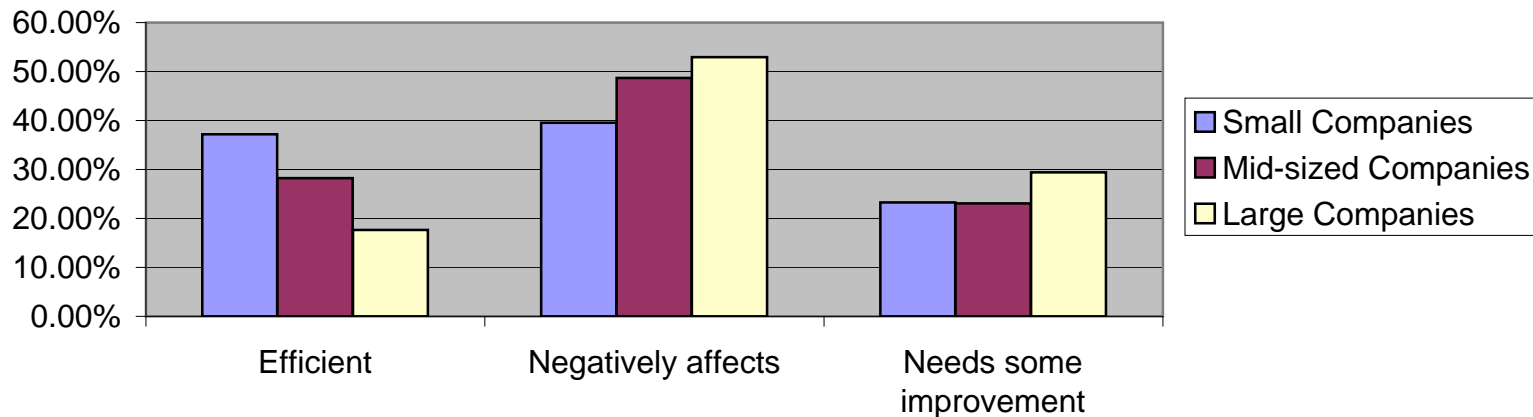
All Companies



21st Century Supply Chain Transformation Survey Data

Please indicate the most accurate current description of supply chain integration with your company's				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Integration is efficient, requirements and quality flow-downs are smooth and supply chain issues do not negatively affect cost, quality or delivery.	37.21%	28.21%	17.65%	33.11%
Supply chain issues negatively affect our cost, quality and on time delivery metrics.	39.53%	48.72%	52.94%	42.57%
Supply chain integration needs some improvement; please specify your highest concern.	23.26%	23.08%	29.41%	24.32%

Please indicate the most accurate current description of supply chain integration with your company's customers and/or suppliers:



21st Century Supply Chain Transformation Survey Data

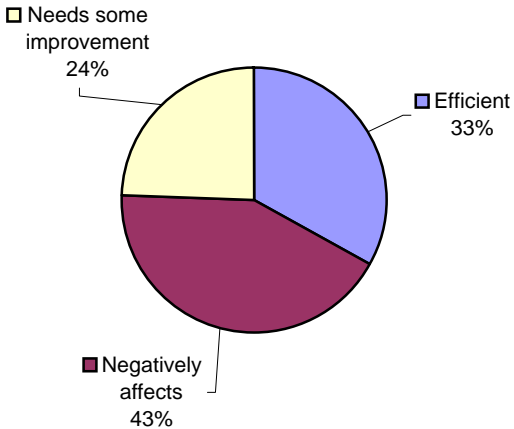
Highest Concerns

Capacity
 consistent cost and lead time
 Flow Down Requirements are incomplete/inaccurate
 Always improving
 Not getting RFQ's
 lead-time on sub-assy
 client support
 common communication and ordering
COMMUNICATION
 poor forecasting

QUALITY IS USUALLY OUR BIGGEST ISSUE WHICH IS WHY OUR PEER GROUP (7 MACHINE SHOPS) ARE POOLING OUR RESOURCES FOR A SUPPLY CHAIN MANAGER IN OUR AREA TO HELP US MANAGE OUR SUPPLIERS

sole sourced suppliers with long lead times
 Metal parts suppliers (aerospace)
 short term delivery of engines
 Single points of failure - no redundancy
 uniformity within industry in expectations re: quality
 Standard operating Procedures
 conformable parts, good drawings
 Cust side: need demand visibility. Supp side: need status visibility
 supply chain integrators have a lack of understanding about the specific products we produce
 cost and quality
 Minor issues with SOME customers: Unclear configuration-unwieldy flow-downs
 Quality and delivery
 Storing finished parts for prime assemblers
 Vertical integration
 Delivery Time
 Accurate forecasting
 communication
 Customer response time
 it is typically slow
 Better integration in work

Please indicate the most accurate current description of supply chain integration with your company's customers and/or suppliers



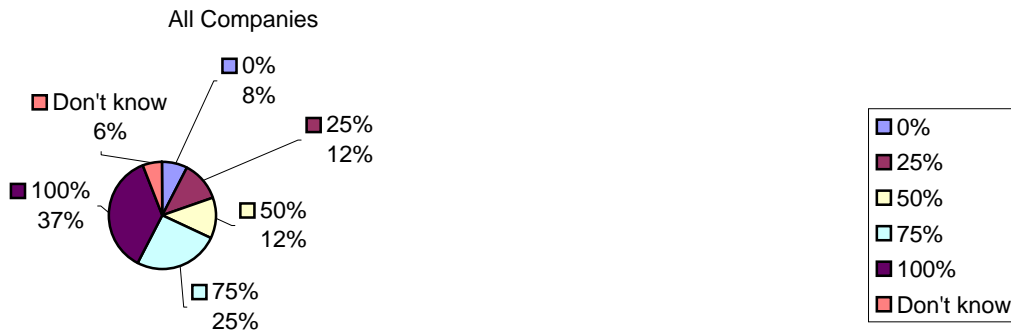
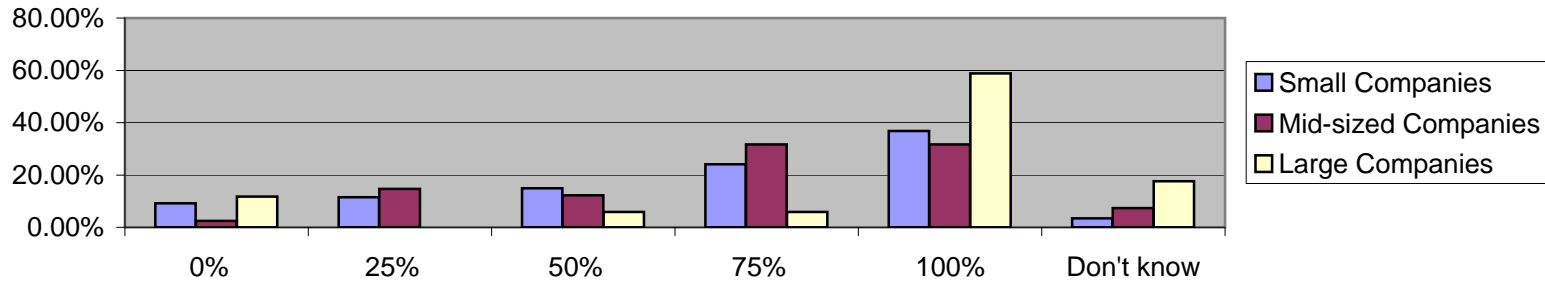
Build to forecast is required by Boeing, but they cannot provide accurate forecasts
 Inconsistent frequency of contact both upstream and downstream. Supply chain used on an as needed or as demanded basis.



21st Century Supply Chain Transformation Survey Data

Approximately what percentage of your company revenue is sales to the Aerospace industry annually?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
0%	9.20%	2.44%	11.76%	7.84%
25%	11.49%	14.63%	0.00%	11.76%
50%	14.94%	12.20%	5.88%	12.42%
75%	24.14%	31.71%	5.88%	25.49%
100%	36.78%	31.71%	58.82%	36.60%
Don't know	3.45%	7.32%	17.65%	5.88%

Approximately what percentage of your company revenue is sales to the Aerospace industry annually?



21st Century Supply Chain Transformation Survey Data

What other major industries besides Aerospace does your company serve? (Please be sure to check an answer in

Small Companies							
answer options	None	<10%	10-25%	25-50%	50-75%	75-100%	Rating Average
Automotive	33	14	7	2	0	0	1.61
Electronics	30	11	5	11	4	2	2.27
Consumer	33	10	6	0	0	0	1.45
Other	24	10	10	7	5	8	2.73

Mid-sized Companies							
answer options	None	<10%	10-25%	25-50%	50-75%	75-100%	Rating Average
Automotive	12	5	6	2	0	0	1.92
Electronics	9	10	2	2	3	0	2.23
Consumer	11	5	4	1	0	1	1.95
Other	9	8	6	3	2	1	2.45

Large Companies							
answer options	None	<10%	10-25%	25-50%	50-75%	75-100%	Rating Average
Automotive	8	3	0	1	0	0	1.5
Electronics	7	2	2	0	0	0	1.55
Consumer	8	0	0	1	1	0	1.7
Other	5	4	1	2	0	0	2

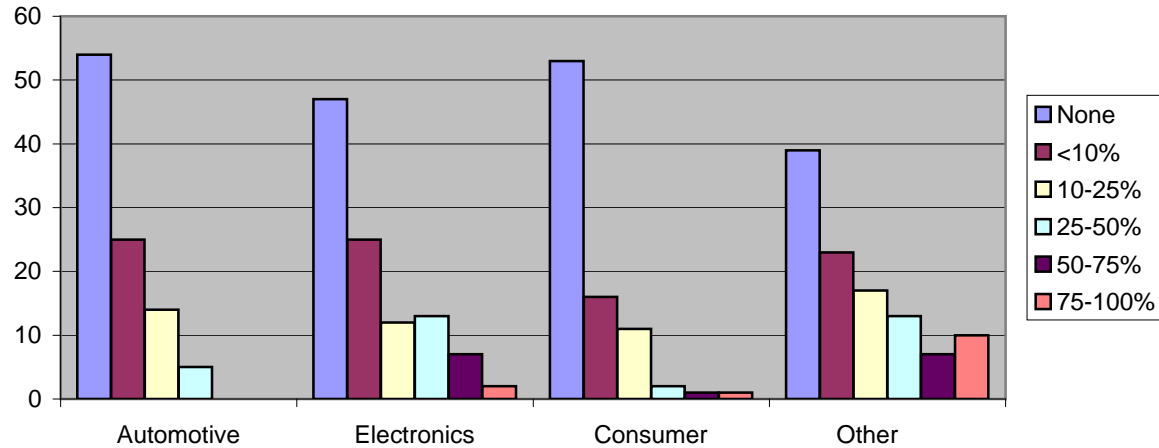
All Companies							
answer options	None	<10%	10-25%	25-50%	50-75%	75-100%	Rating Average
Automotive	54	25	14	5	0	0	1.69
Electronics	47	25	12	13	7	2	2.19
Consumer	53	16	11	2	1	1	1.63
Other	39	23	17	13	7	10	2.6

Others

Science institutes and universities
 Oil & Gas, Medical, Motorsports
 Medical Device Manufacturers
 other manufacturers (lighting fixtures,
 sound components, etc.
 General Commercial Industrial
 medical

Marine Defense, Power Generation
 Survey & Mining
 Retail Store Industry
 Industrial
 Industrial 25%, Communications
 25%
 Fluid and valve
 medical/defense
 Medical
 Optical Manufacturing Industry
 Commercial machining
 Mining Industry
 Industrial & Marine
 Space Programs
 Aluminum manufacturing industry
 Nuclear
 Power Generation
 Gov. Industrial, Sports, Inventors,
 Etc.
 Govt agencies
 safety
 Semi-Cap, Oil & Gas, Medical
 Construction
 military
 High rel industrial
 Medical and Industrial
 Federal & DoD Agencies
 industrial, medical, defense
 Medical & Defense
 Oil and Gas, Trucking
 Heavy Mining Equipment

What other major industries besides Aerospace does your company serve?



Network and Systems Solutions
 military, commercial aircraft, and
 military, industrial, cryogenic, marine,
 Subway Systems
 We are a school and a school

Construction
 General manufacturing & assorted
 n/a
Industrial commercial gaskets
 Biomedical; various others
 Semiconductor
 Medical and Oil Field
 automation
 Medical
 Shipbuilding, Steel, Petrochemical
 plastics
 Military ground equipment
 Telecommunications

Defense (Naval Shipbuilding), Industrial
 Military Contractors
 Education
 test and measurement
 aviation
 various
 ground support, entertainment
 oil and gas equipment, agricultural and
 R&D, Laser
 Heavy Construction Equipment
 aerospace

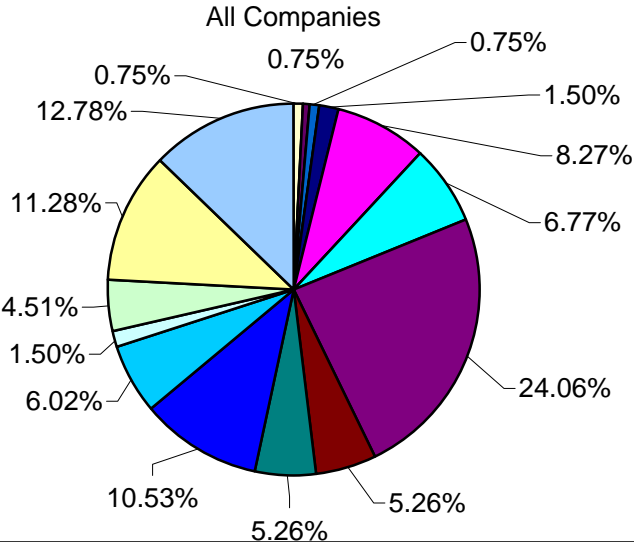
21st Century Supply Chain Transformation Survey Data

Select your Primary NAIC code (First 3 digits):				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
313 -- Textile Mills	0.00%	0.00%	0.00%	0.00%
314 -- Textile Product Mills	0.00%	0.00%	0.00%	0.00%
315 -- Apparel Manufacturing	0.00%	2.63%	0.00%	0.75%
316 -- Leather and Allied Product Manufacturing	0.00%	0.00%	0.00%	0.00%
321 -- Wood Product Manufacturing	1.33%	0.00%	0.00%	0.75%
322 -- Paper Manufacturing	0.00%	0.00%	0.00%	0.00%
323 -- Printing and Related Support Activities	1.33%	0.00%	0.00%	0.75%
324 -- Petroleum and Coal Products Manufacturing	0.00%	0.00%	0.00%	0.00%
325 -- Chemical Manufacturing	1.33%	0.00%	6.67%	1.50%
326 -- Plastics and Rubber Products Manufacturing	4.00%	13.16%	13.33%	8.27%
327 -- Nonmetallic Mineral Product Manufacturing	0.00%	0.00%	0.00%	0.00%
331 -- Primary Metal Manufacturing	6.67%	10.53%	0.00%	6.77%
332 -- Fabricated Metal Product Manufacturing	24.00%	31.58%	6.67%	24.06%
333 -- Machinery Manufacturing	8.00%	0.00%	6.67%	5.26%
334 -- Computer and Electronic Product Manufacturing	5.33%	7.89%	0.00%	5.26%
335 -- Electrical Equipment, Appliance, and Component Manufacturing	12.00%	7.89%	6.67%	10.53%
336 -- Transportation Equipment Manufacturing	9.33%	2.63%	0.00%	6.02%
337 -- Furniture and Related Product Manufacturing	0.00%	0.00%	6.67%	1.50%
339 -- Miscellaneous Manufacturing	5.33%	5.26%	0.00%	4.51%
Don't know	8.00%	10.53%	33.33%	11.28%
Other (please specify)	13.33%	7.89%	20.00%	12.78%



21st Century Supply Chain Transformation Survey Data

Others
372,437,283,990
359
EDU
repair station
423
optics
Electronics Development
Commercial passenger jets
Education & Training
Assembly and Integration
541
541380
811310



- 313 -- Textile Mills
- 314 -- Textile Product Mills
- 315 -- Apparel Manufacturing
- 316 -- Leather and Allied Product Manufacturing
- 321 -- Wood Product Manufacturing
- 322 -- Paper Manufacturing
- 323 -- Printing and Related Support Activities
- 324 -- Petroleum and Coal Products Manufacturing
- 325 -- Chemical Manufacturing
- 326 -- Plastics and Rubber Products Manufacturing
- 327 -- Nonmetallic Mineral Product Manufacturing
- 331 -- Primary Metal Manufacturing
- 332 -- Fabricated Metal Product Manufacturing
- 333 -- Machinery Manufacturing
- 334 -- Computer and Electronic Product Manufacturing
- 335 -- Electrical Equipment, Appliance, and Component Manufacturing
- 336 -- Transportation Equipment Manufacturing
- 337 -- Furniture and Related Product Manufacturing
- 339 -- Miscellaneous Manufacturing
- Don't know
- Other (please specify)



21st Century Supply Chain Transformation Survey Data

Approximately what percent of time does your company spend doing the following? (Must

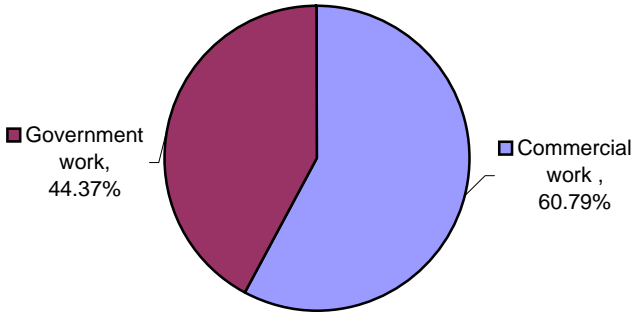
Small Companies	
answer options	Response Average
% Commercial work	63.01
% Government work	41.36

Mid-sized Companies	
answer options	Response Average
% Commercial work	54.26
% Government work	47.13

Large Companies	
answer options	Response Average
% Commercial work	68.13
% Government work	45.2

All Companies	
answer options	Response Average
% Commercial work	60.79
% Government work	44.37

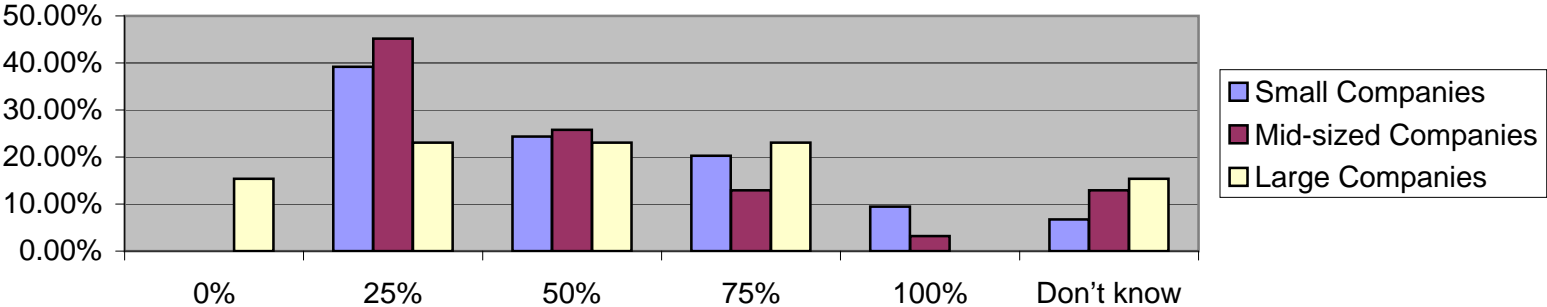
All Companies Response Average



21st Century Supply Chain Transformation Survey Data

Approximately what percentage of your company's business is conducted with customers or suppliers in the state of California?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
0%	0.00%	0.00%	15.38%	1.65%
25%	39.19%	45.16%	23.08%	38.02%
50%	24.32%	25.81%	23.08%	25.62%
75%	20.27%	12.90%	23.08%	19.01%
100%	9.46%	3.23%	0.00%	6.61%
Don't know	6.76%	12.90%	15.38%	9.09%

Approximately what percentage of your company's business is conducted with customers or suppliers in the state of California?



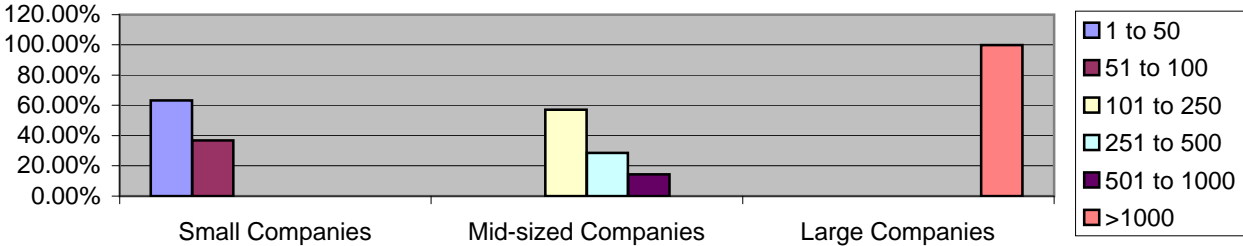
All Companies



21st Century Supply Chain Transformation Survey Data

Approximately how many employees does your company currently employ in total?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
1 to 50	63.22%	0.00%	0.00%	37.67%
51 to 100	36.78%	0.00%	0.00%	21.92%
101 to 250	0.00%	57.14%	0.00%	16.44%
251 to 500	0.00%	28.57%	0.00%	8.22%
501 to 1000	0.00%	14.29%	0.00%	4.11%
>1000	0.00%	0.00%	100.00%	11.64%

Approximately how many employees does your company currently employ in total?



All Companies



21st Century Supply Chain Transformation Survey Data

Approximately what percent of your company's revenue comes from...(Please be sure to check an answer in each row.)

Small Companies						
answer options	None	<25%	25-50%	50-75%	75-100%	Don't know
Systems Integration/final assembly	24	9	10	3	11	1
Sub assembly	19	23	12	5	3	1
Supplying parts	14	8	7	7	31	1
Supplying material	29	10	2	1	2	1
Special processing	20	24	1	2	7	1

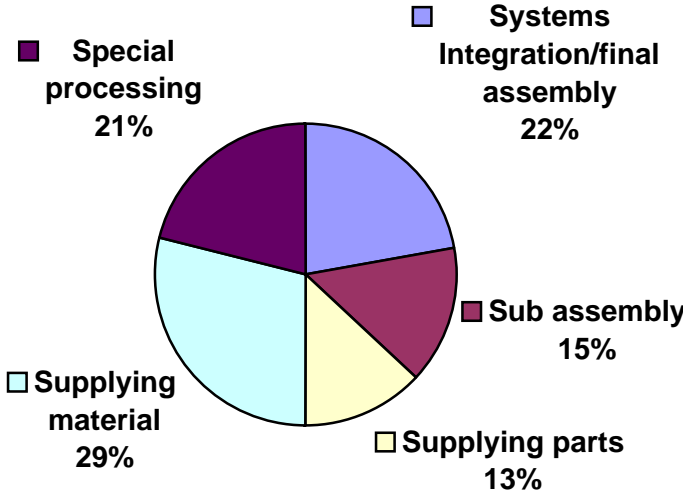
Mid-sized Companies						
answer options	None	<25%	25-50%	50-75%	75-100%	Don't know
Systems Integration/final assembly	9	6	5	3	3	2
Sub assembly	2	10	11	3	3	1
Supplying parts	3	6	4	10	8	1
Supplying material	13	5	2	0	1	1
Special processing	9	10	1	2	0	1

Large Companies						
answer options	None	<25%	25-50%	50-75%	75-100%	Don't know
Systems Integration/final assembly	3	2	0	2	5	1
Sub assembly	3	5	2	0	1	1
Supplying parts	4	4	1	2	2	1
Supplying material	5	3	1	1	2	1
Special processing	5	4	1	0	0	2

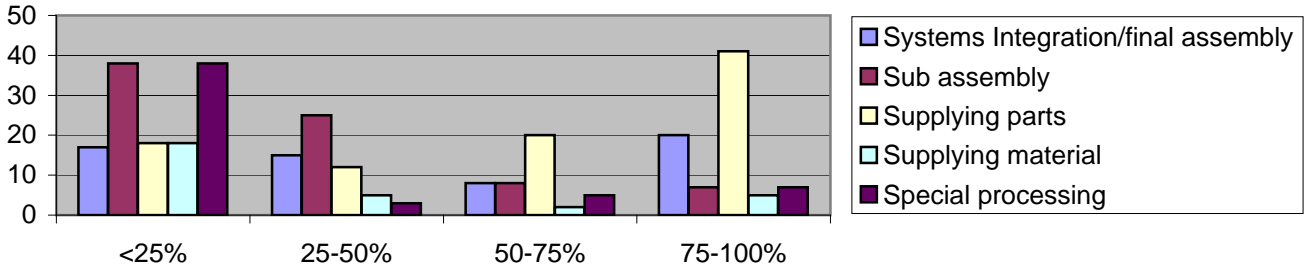
All Companies						
answer options	None	<25%	25-50%	50-75%	75-100%	Don't know
Systems Integration/final assembly	36	17	15	8	20	4
Sub assembly	24	38	25	8	7	3
Supplying parts	21	18	12	20	41	3
Supplying material	47	18	5	2	5	3
Special processing	34	38	3	5	7	4



21st Century Supply Chain Transformation Survey Data



Percent of your respondents revenue that comes from each of the following.



21st Century Supply Chain Transformation Survey Data

Please indicate the Information Technology Management systems your company uses internally, with suppliers and with customers. (Check all that apply, minimum of one in each row)

Small Companies

answer options	internally	w/ suppliers	w/ customers	Not currently using	Don't know
ERP/MRP (Enterprise Recourse Planning/Materials Resource Planning)	35	10	14	24	6
e-Procurement	9	13	32	22	5
PDM/PLM (Product Definition Management/Product Life Management)	10	4	11	42	6
MES (Manufacturing Execution System/Shop floor control)	26	1	1	34	6
CRM (Customer Relationship Management)	18	3	13	31	5
SPC (Statistical Process Control)	32	4	10	25	4
CAD (Computer-aided Design)	48	22	28	15	4
CAM (Computer-aided Manufacturing)	30	9	11	31	6

Mid-sized Companies

answer options	internally	w/ suppliers	w/ customers	ot currently usin	Don't know
ERP/MRP (Enterprise Recourse Planning/Materials Resource Planning)	29	10	11	5	0
e-Procurement	2	8	12	8	5
PDM/PLM (Product Definition Management/Product Life Management)	2	1	4	15	10
MES (Manufacturing Execution System/Shop floor control)	13	2	3	12	6
CRM (Customer Relationship Management)	8	0	8	11	6
SPC (Statistical Process Control)	27	9	7	3	2
CAD (Computer-aided Design)	29	11	21	0	1
CAM (Computer-aided Manufacturing)	14	8	10	10	5



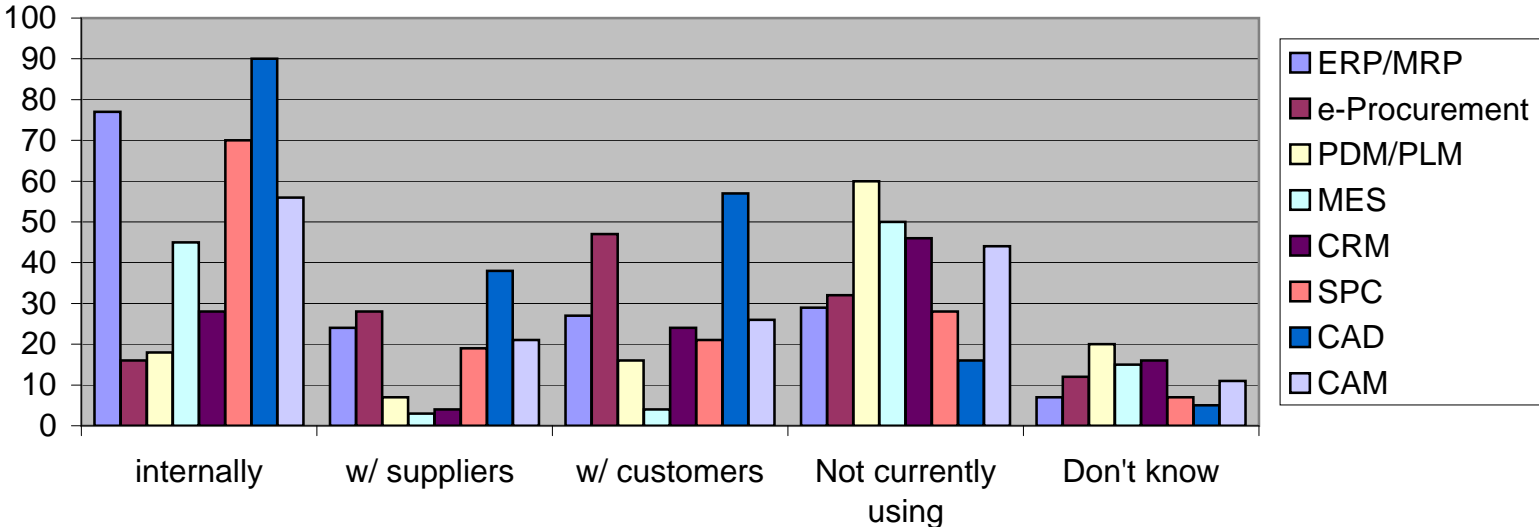
21st Century Supply Chain Transformation Survey Data

Large Companies					
answer options	internally	w/ suppliers	w/ customers	ot currently usin	Don't know
ERP/MRP (Enterprise Recourse Planning/Materials Resource Planning)	13	4	2	0	0
e-Procurement	5	7	3	2	1
PDM/PLM (Product Definition Management/Product Life Management)	6	2	1	3	3
MES (Manufacturing Execution System/Shop floor control)	6	0	0	4	2
CRM (Customer Relationship Management)	1	1	3	4	4
SPC (Statistical Process Control)	10	6	4	0	1
CAD (Computer-aided Design)	11	5	8	1	0
CAM (Computer-aided Manufacturing)	10	4	5	3	0

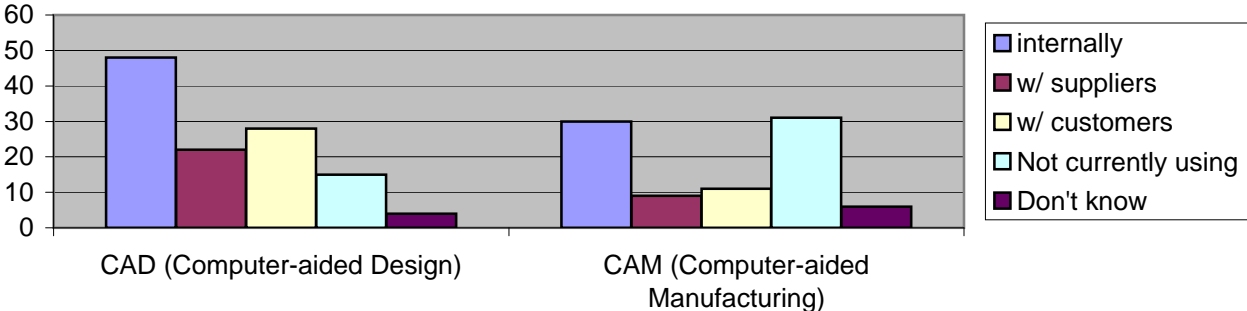
All Companies					
answer options	internally	w/ suppliers	w/ customers	ot currently usin	Don't know
ERP/MRP (Enterprise Recourse Planning/Materials Resource Planning)	77	24	27	29	7
e-Procurement	16	28	47	32	12
PDM/PLM (Product Definition Management/Product Life Management)	18	7	16	60	20
MES (Manufacturing Execution System/Shop floor control)	45	3	4	50	15
CRM (Customer Relationship Management)	28	4	24	46	16
SPC (Statistical Process Control)	70	19	21	28	7
CAD (Computer-aided Design)	90	38	57	16	5
CAM (Computer-aided Manufacturing)	56	21	26	44	11



Please indicate the Information Technology Management systems your company uses internally, with suppliers and with customers.

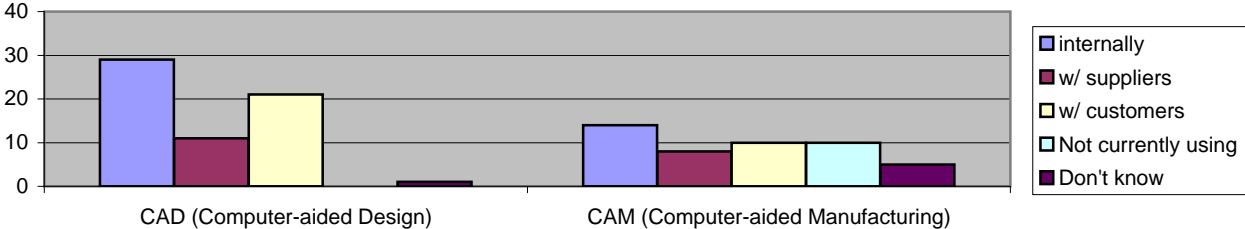


Small Companies

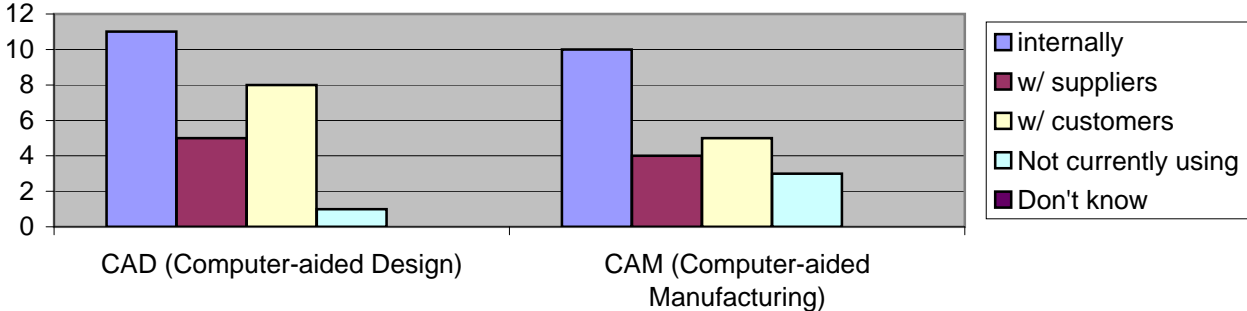


21st Century Supply Chain Transformation Survey Data

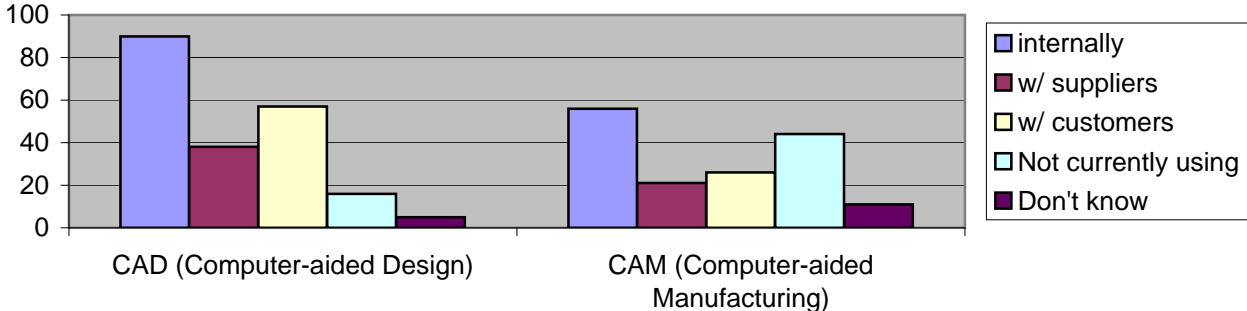
Mid-sized Companies



Large Companies



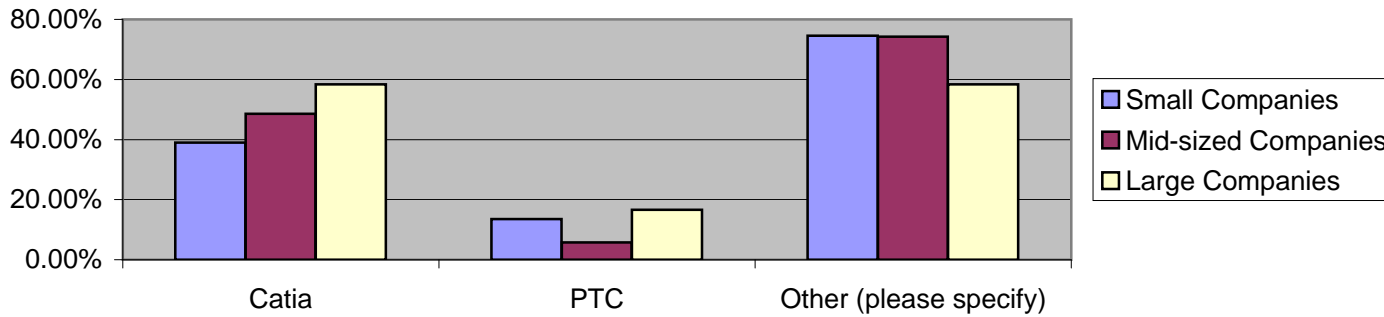
All Companies



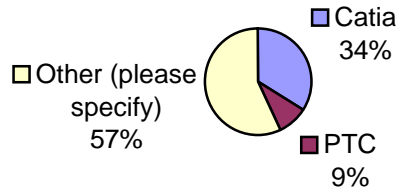
21st Century Supply Chain Transformation Survey Data

If you are using CAD/CAM, what programs does your company use? (Check all that apply)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Catia	38.98%	48.57%	58.33%	43.52%
PTC	13.56%	5.71%	16.67%	12.04%
Other (please specify)	74.58%	74.29%	58.33%	73.15%

If you are using CAD/CAM, what programs does your company use?



All Companies



21st Century Supply Chain Transformation Survey Data

Others List

Algor
Alibre
AutoCAD
Autodesk Inventor
CabCAD
CADCODE
Cadence
cadkey
Esprit
Genesis
Geo Path
GibbsCam
IGI
Keycreator
Mastercam
Mentor
ncl
NX (UGS Product)
Orcad
part maker
ProE
Solid Works
STK
SURFCAM
Turbocad
Unigraphics

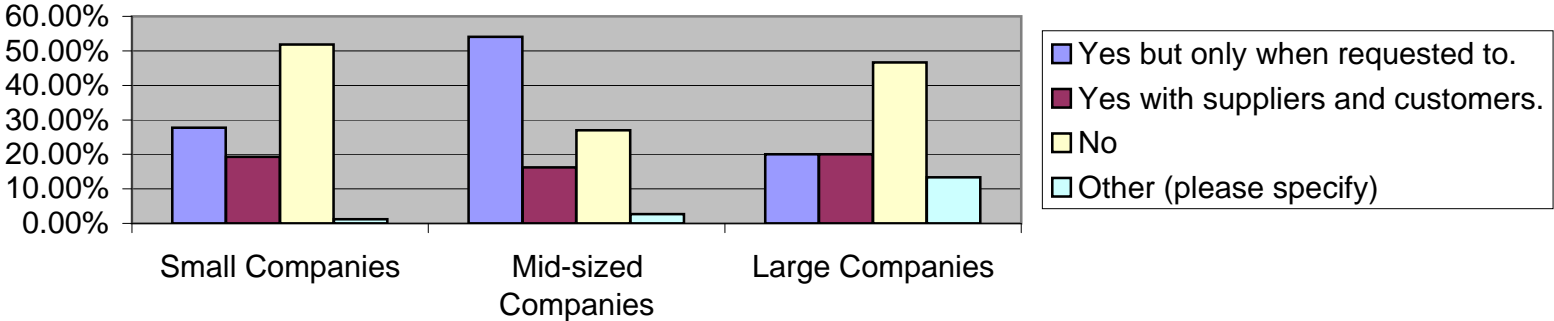


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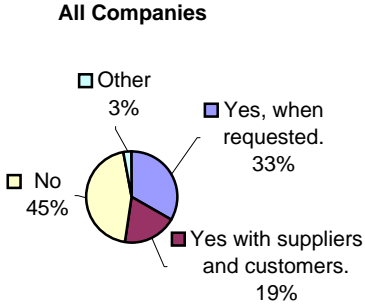


Does your company use Exostar, the Aerospace & Defense Global trading Exchange?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Yes but only when requested to.	27.71%	54.05%	20.00%	33.33%
Yes with suppliers and customers.	19.28%	16.22%	20.00%	18.84%
No	51.81%	27.03%	46.67%	44.93%
Other (please specify)	1.20%	2.70%	13.33%	2.90%

Does your company use Exostar, the Aerospace & Defense Global trading Exchange?



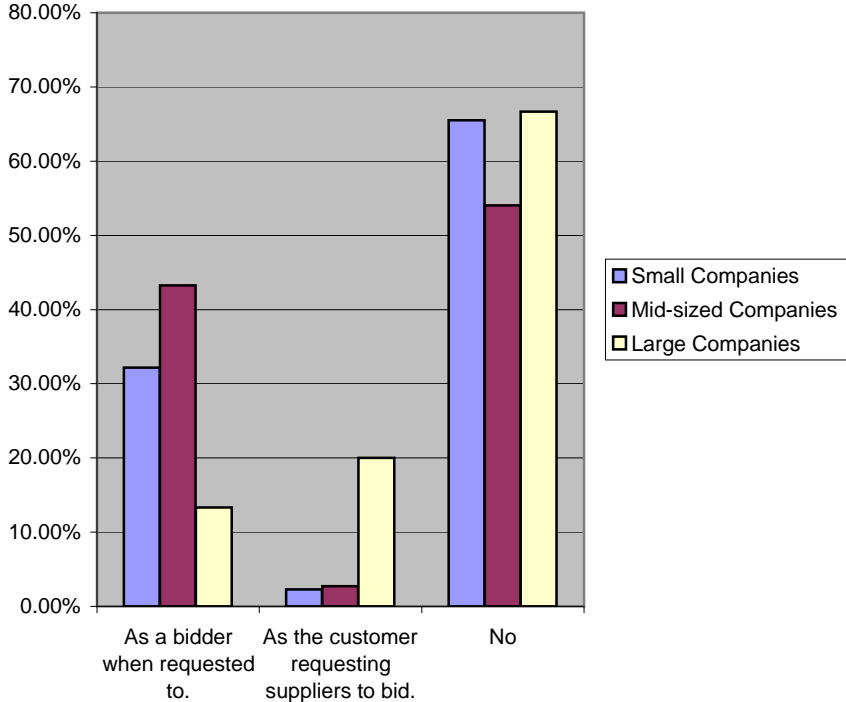
Others
with Customers
dont know
Trial basis only



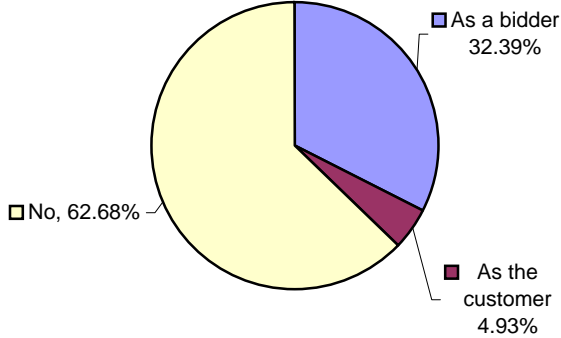
21st Century Supply Chain Transformation Survey Data

Has your company participated in an electronic reverse auction?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
As a bidder when requested to.	32.18%	43.24%	13.33%	32.39%
As the customer requesting suppliers to bid.	2.30%	2.70%	20.00%	4.93%
No	65.52%	54.05%	66.67%	62.68%

Has your company participated in an electronic reverse auction?



All Companies



21st Century Supply Chain Transformation Survey Data

Please be sure to check an answer for each of the following questions.				
Small Companies				
answer options	Yes	No	Needs improvement	Don't know
Does your company have a documented corporate strategy?	47	19	18	1
Does the corporate strategy include a supply chain strategy?	26	46	8	5
Is it communicated to all employees?	34	38	10	1
Does your company sell or buy products internationally?	63	22	0	0
Has your company identified its core competencies and unique value in the supply chain?	59	16	7	3
Does your company have experience controlling proprietary customer information?	78	7	0	0
Is your company cleared to do classified government work?	27	45	6	6
Is your company ITAR (International Traffic in Arms Regulations) compliant?	49	25	0	10
Does your company use global sourcing and logistics?	27	52	2	4
Does your company have contingency plans in place for loss of people, IT and supply chain disruption?	35	28	18	3
Do your key suppliers have contingency plans in place for loss of people, IT and supply chain disruption?	11	14	13	46
Does your company have specific processes in place to prevent counterfeit parts from getting to the customer?	45	26	5	8
Does your company have an effective Injury and Illness Prevention Program as required by state OSHA standards (Title 8, California Code of Regulations, Section 3203)?	67	9	5	4



21st Century Supply Chain Transformation Survey Data

Mid-sized Companies				
answer options	Yes	No	Needs improvement	Don't know
Does your company have a documented corporate strategy?	32	0	5	1
Does the corporate strategy include a supply chain strategy?	22	6	7	3
Is it communicated to all employees?	23	6	8	1
Does your company sell or buy products internationally?	32	5	0	1
Has your company identified its core competencies and unique value in the supply chain?	32	1	3	2
Does your company have experience controlling proprietary customer information?	34	2	2	0
Is your company cleared to do classified government work?	21	11	0	5
Is your company ITAR (International Traffic in Arms Regulations) compliant?	26	8	0	3
Does your company use global sourcing and logistics?	16	13	7	1
Does your company have contingency plans in place for loss of people, IT and supply chain disruption?	24	5	7	2
Do your key suppliers have contingency plans in place for loss of people, IT and supply chain disruption?	10	2	9	16
Does your company have specific processes in place to prevent counterfeit parts from getting to the customer?	18	8	6	5
Does your company have an effective Injury and Illness Prevention Program as required by state OSHA standards (Title 8, California Code of Regulations, Section 3203)?	30	2	3	2



21st Century Supply Chain Transformation Survey Data

Large Companies				
answer options	Yes	No	Needs improvement	Don't konw
Does your company have a documented corporate strategy?	17	0	0	0
Does the corporate strategy include a supply chain strategy?	17	0	0	0
Is it communicated to all employees?	9	2	4	2
Does your company sell or buy products internationally?	17	0	0	0
Has your company identified its core competencies and unique value in the supply chain?	14	0	0	3
Does your company have experience controlling proprietary customer information?	17	0	0	0
Is your company cleared to do classified government work?	14	1	0	2
Is your company ITAR (International Traffic in Arms Regulations) compliant?	15	0	0	2
Does your company use global sourcing and logistics?	14	2	0	0
Does your company have contingency plans in place for loss of people, IT and supply chain disruption?	14	0	2	1
Do your key suppliers have contingency plans in place for loss of people, IT and supply chain disruption?	10	1	2	4
Does your company have specific processes in place to prevent counterfeit parts from getting to the customer?	12	1	0	4
Does your company have an effective Injury and Illness Prevention Program as required by state OSHA standards (Title 8, California Code of Regulations, Section 3203)?	17	0	0	0



21st Century Supply Chain Transformation Survey Data

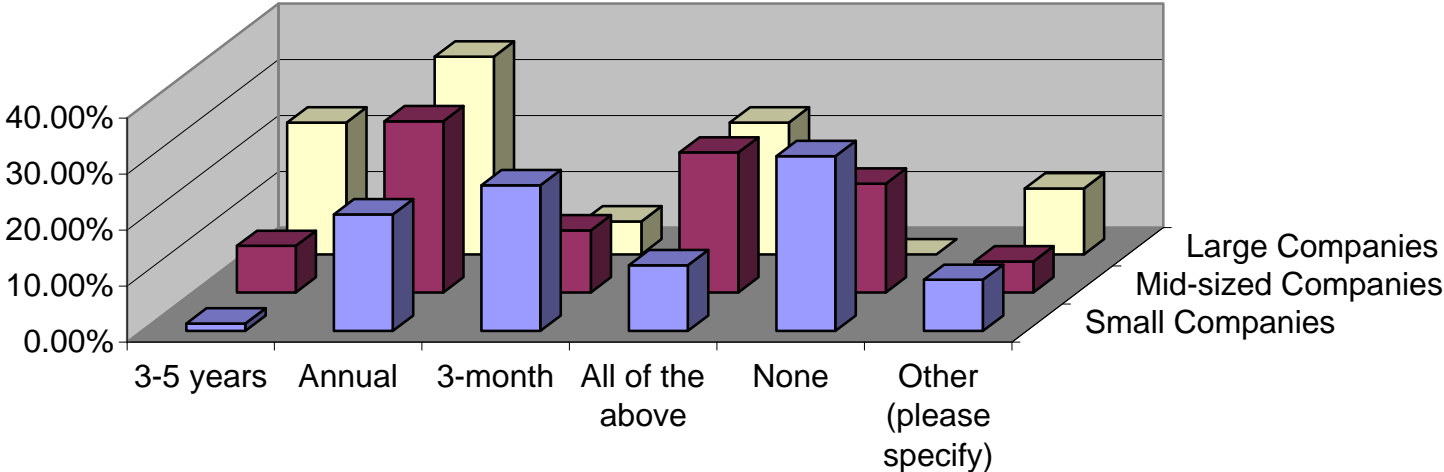
All Companies				
answer options	Yes	No	Needs improvement	Don't know
Does your company have a documented corporate strategy?	96	19	24	3
Does the corporate strategy include a supply chain strategy?	65	53	15	9
Is it communicated to all employees?	66	47	22	4
Does your company sell or buy products internationally?	113	28	0	1
Has your company identified its core competencies and unique value in the supply chain?	106	17	10	9
Does your company have experience controlling proprietary customer information?	130	9	2	1
Is your company cleared to do classified government work?	62	57	6	15
Is your company ITAR (International Traffic in Arms Regulations) compliant?	91	33	1	15
Does your company use global sourcing and logistics?	57	68	9	6
Does your company have contingency plans in place for loss of people, IT and supply chain disruption?	74	33	27	7
Do your key suppliers have contingency plans in place for loss of people, IT and supply chain disruption?	31	17	24	68
Does your company have specific processes in place to prevent counterfeit parts from getting to the customer?	76	35	11	18
Does your company have an effective Injury and Illness Prevention Program as required by state OSHA standards (Title 8, California Code of Regulations, Section 3203)?	115	11	8	7



21st Century Supply Chain Transformation Survey Data

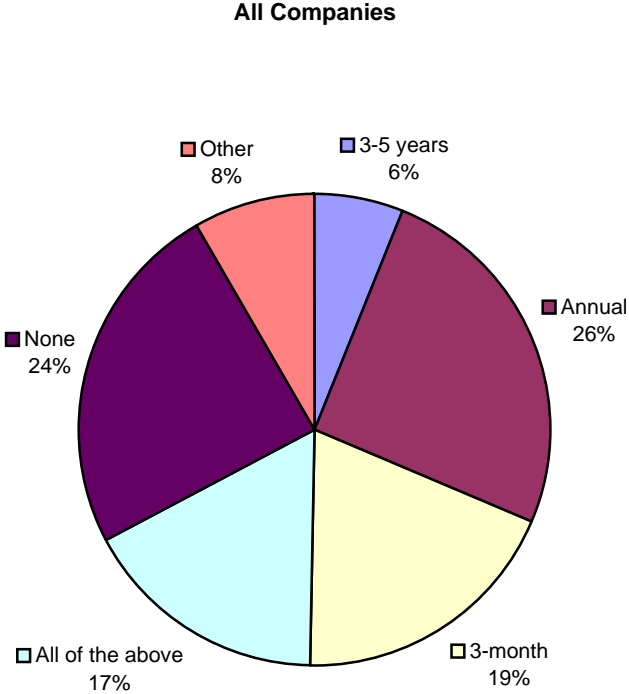
What type of Supply Chain planning for materials does your company perform?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
3-5 years	1.30%	8.33%	23.53%	6.11%
Annual	20.78%	30.56%	35.29%	25.19%
3-month	25.97%	11.11%	5.88%	19.08%
All of the above	11.69%	25.00%	23.53%	16.79%
None	31.17%	19.44%	0.00%	24.43%
Other (please specify)	9.09%	5.56%	11.76%	8.40%

What type of Supply Chain planning for materials does your company perform?



21st Century Supply Chain Transformation Survey Data

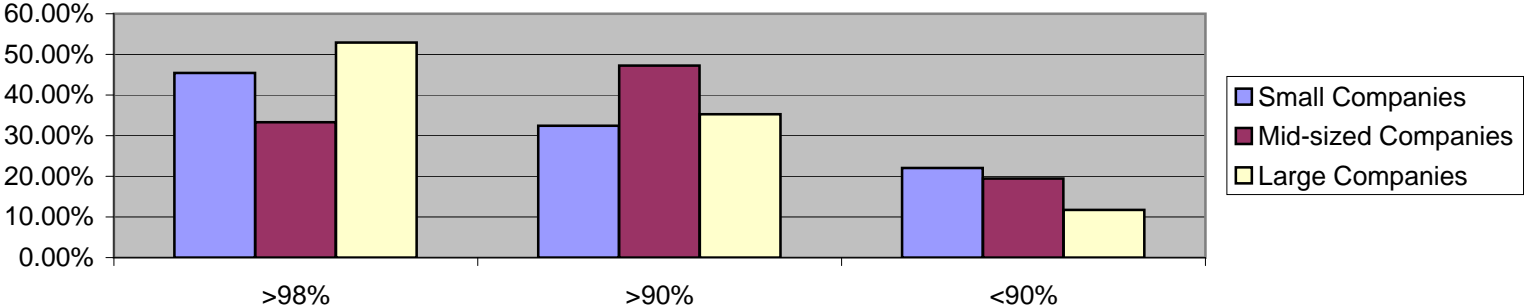
Others
 don't know
 Per contract
 monthly
 As required - project based operation
 Annual and 3 month plan
 Contingent on Program awards
 not sure what the question is asking
 we are a special processing facility
 as required



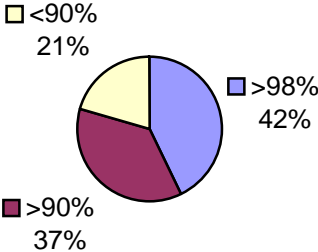
21st Century Supply Chain Transformation Survey Data

Approximately how well is inventory accuracy controlled by your company?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
>98%	45.45%	33.33%	52.94%	42.75%
>90%	32.47%	47.22%	35.29%	36.64%
<90%	22.08%	19.44%	11.76%	20.61%

Approximately how well is inventory accuracy controlled by your company?



All Companies

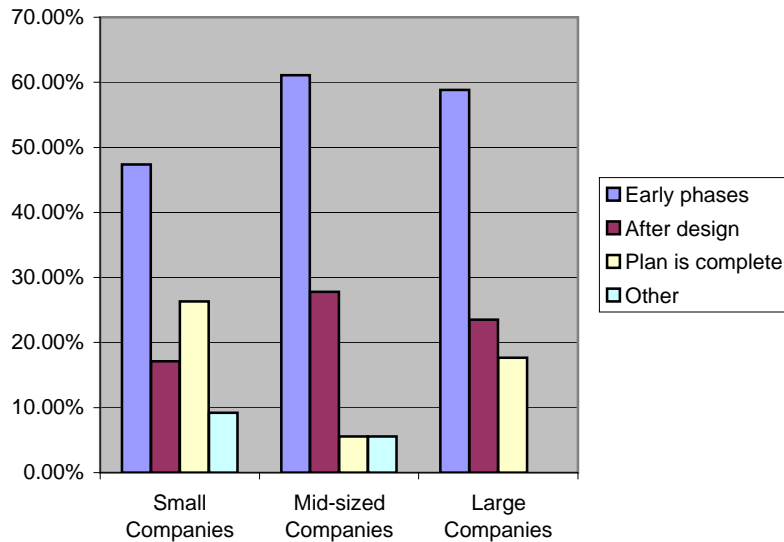


21st Century Supply Chain Transformation Survey Data

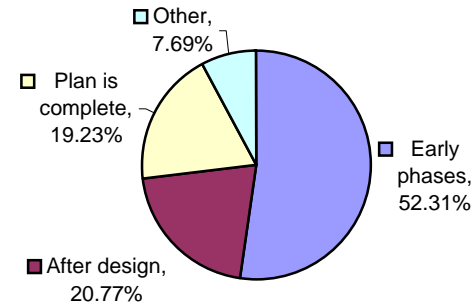
At what point in your company's product development cycle does your supply chain organization and suppliers usually get involved to collaborate?

answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Early phases of product development (design and/or requirement).	47.37%	61.11%	58.82%	52.31%
After design is complete, during the production planning cycle.	17.11%	27.78%	23.53%	20.77%
When production plan is complete and part orders are required.	26.32%	5.56%	17.65%	19.23%
Other (please specify)	9.21%	5.56%	0.00%	7.69%

At what point in your company's product development cycle does your supply chain organization and suppliers usually get involved to collaborate?



At what point in your company's product development cycle does your supply chain organization and suppliers usually get involved to collaborate?



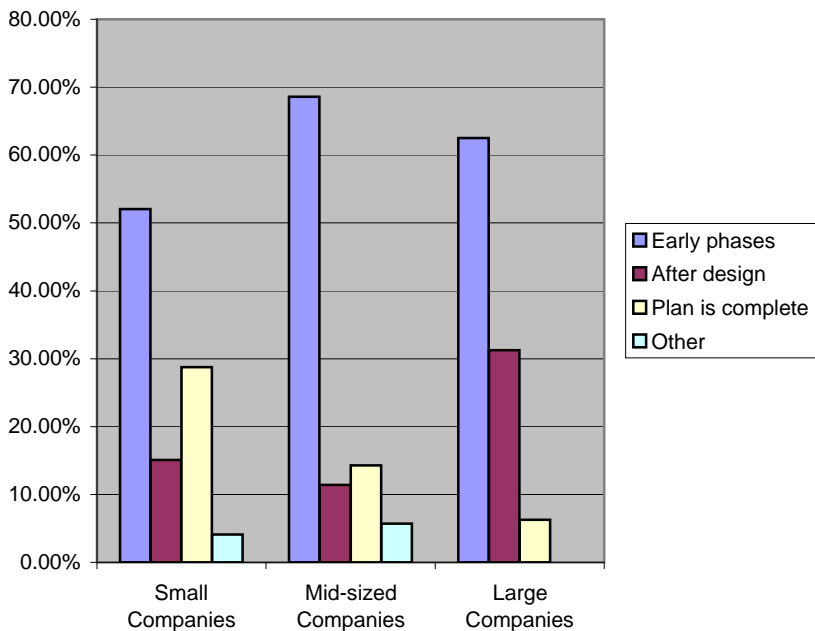
Others

We are a process provider
 blank
 depends on project
 N/A
 NO DIRECT DESIGN WORK
 not developing parts
 N/A
 n/a
 none

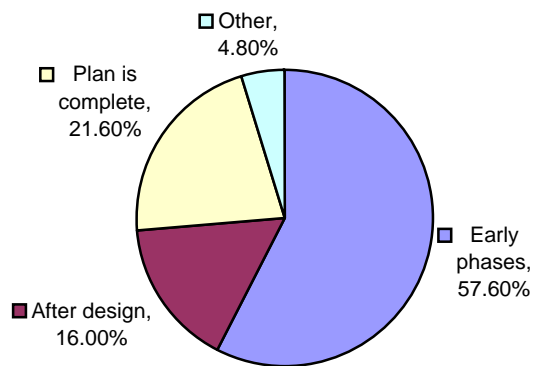
21st Century Supply Chain Transformation Survey Data

At what point in your customer's product development cycle is your company invited to participate?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Early phases of product development (design and/or requirement).	52.05%	68.57%	62.50%	57.60%
After design is complete, during the production planning cycle.	15.07%	11.43%	31.25%	16.00%
When production plan is complete and part orders are required.	28.77%	14.29%	6.25%	21.60%
Other (please specify)	4.11%	5.71%	0.00%	4.80%

At what point in your customer's product development cycle is your company invited to participate?



At what point in your customer's product development cycle is your company invited to participate?



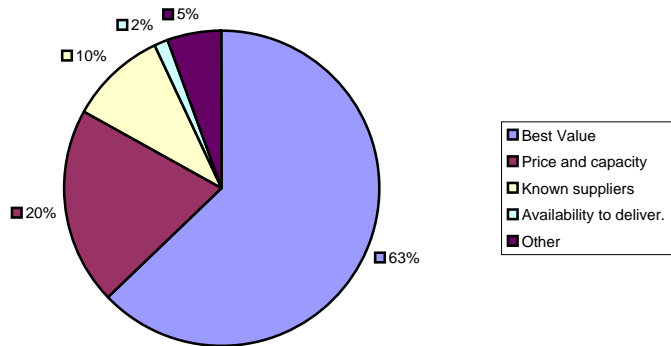
Others
 all of the above
 N/A
 Varies by customer



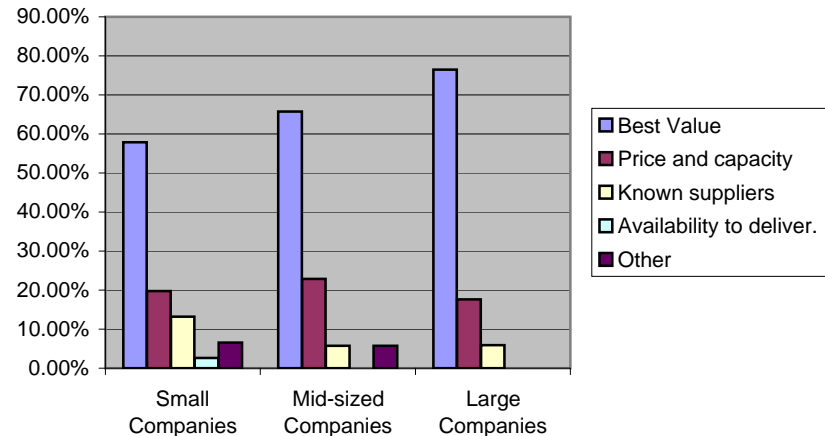
21st Century Supply Chain Transformation Survey Data

What process does your company usually use to select suppliers?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Best Value (Competitive selection process based on multiple factors including total cost, quality, delivery, stability).	57.89%	65.71%	76.47%	62.79%
Competitive selection which factors primarily price and capacity.	19.74%	22.86%	17.65%	20.16%
Usually select known suppliers without competitive bids from others.	13.16%	5.71%	5.88%	10.08%
Availability to deliver.	2.63%	0.00%	0.00%	1.55%
Other (please specify)	6.58%	5.71%	0.00%	5.43%

All Companies



What process does your company usually use to select suppliers?

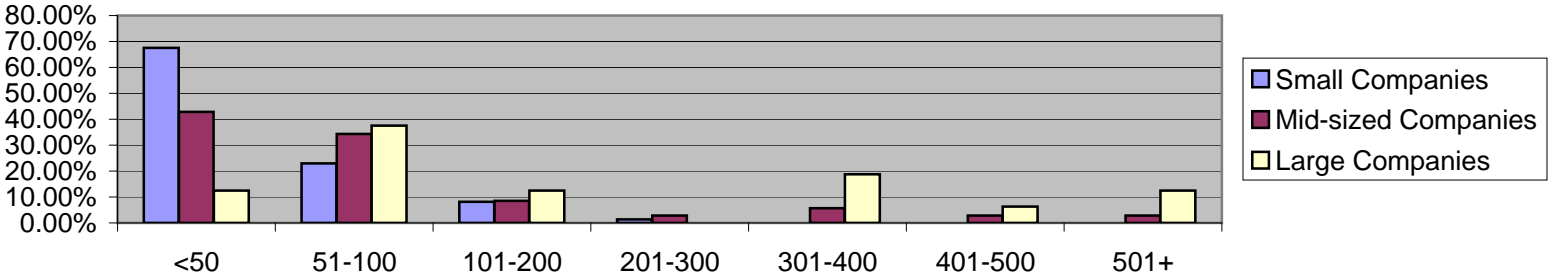


Others
 depends on specific circumstances
 all the above depending on specific order-often
 OEM directed procurement
 Approved suppliers
 only one vendor for product line
 n/a; we provide a service
 As a distributor, we utilize customer specified
 approved sources.
 Our goal is best value but often times there is
 only one source for special processes

21st Century Supply Chain Transformation Survey Data

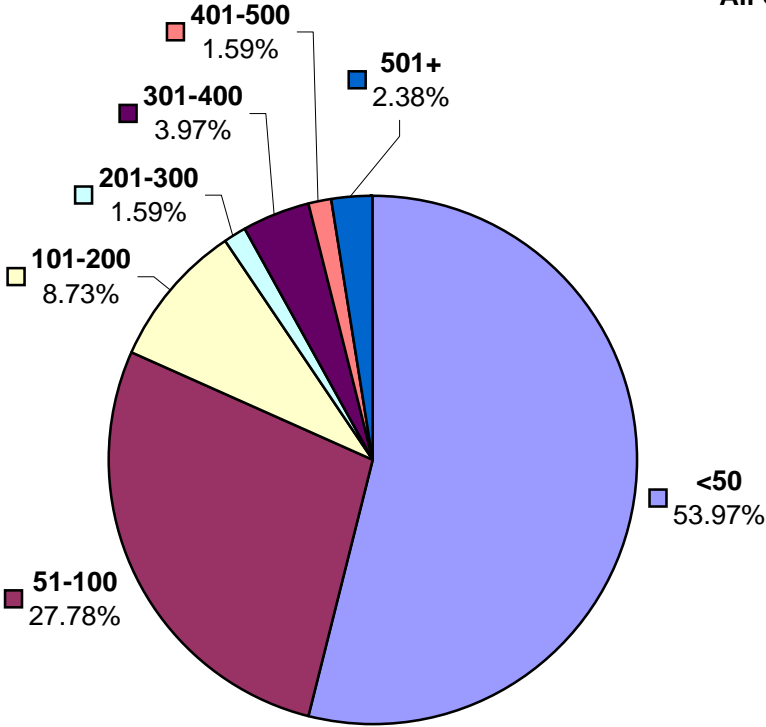
Approximately how many active suppliers/vendors does your company have in California?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
<50	67.57%	42.86%	12.50%	53.97%
51-100	22.97%	34.29%	37.50%	27.78%
101-200	8.11%	8.57%	12.50%	8.73%
201-300	1.35%	2.86%	0.00%	1.59%
301-400	0.00%	5.71%	18.75%	3.97%
401-500	0.00%	2.86%	6.25%	1.59%
501+	0.00%	2.86%	12.50%	2.38%

Approximately how many active suppliers/vendors does your company have in California?



21st Century Supply Chain Transformation Survey Data

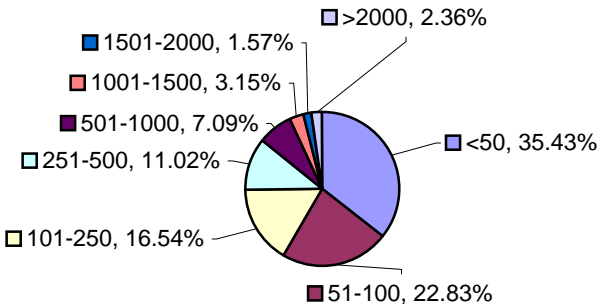
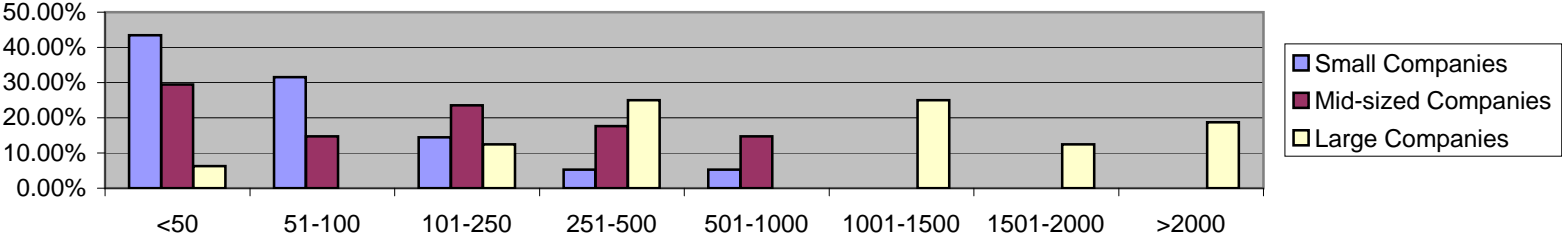
All Companies



21st Century Supply Chain Transformation Survey Data

Approximately how many active suppliers/vendors does your company have in the United States?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
<50	43.42%	29.41%	6.25%	35.43%
51-100	31.58%	14.71%	0.00%	22.83%
101-250	14.47%	23.53%	12.50%	16.54%
251-500	5.26%	17.65%	25.00%	11.02%
501-1000	5.26%	14.71%	0.00%	7.09%
1001-1500	0.00%	0.00%	25.00%	3.15%
1501-2000	0.00%	0.00%	12.50%	1.57%
>2000	0.00%	0.00%	18.75%	2.36%

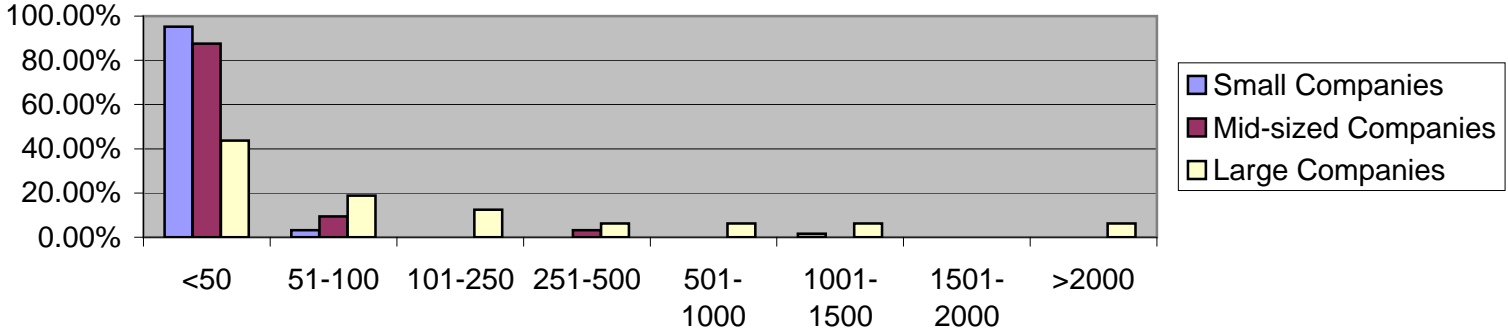
Approximately how many active suppliers/vendors does your company have in the United States?



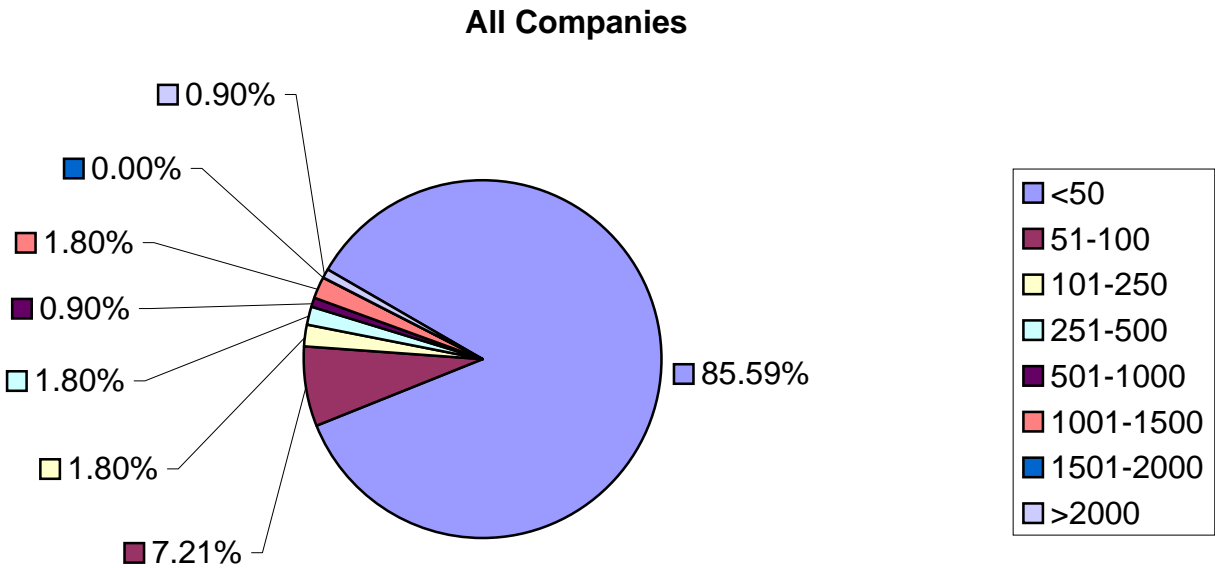
21st Century Supply Chain Transformation Survey Data

Approximately how many active suppliers/vendors does your company have globally outside of the United States?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
<50	95.16%	87.50%	43.75%	85.59%
51-100	3.23%	9.38%	18.75%	7.21%
101-250	0.00%	0.00%	12.50%	1.80%
251-500	0.00%	3.12%	6.25%	1.80%
501-1000	0.00%	0.00%	6.25%	0.90%
1001-1500	1.61%	0.00%	6.25%	1.80%
1501-2000	0.00%	0.00%	0.00%	0.00%
>2000	0.00%	0.00%	6.25%	0.90%

Approximately how many active suppliers/vendors does your company have globally outside of the United States?



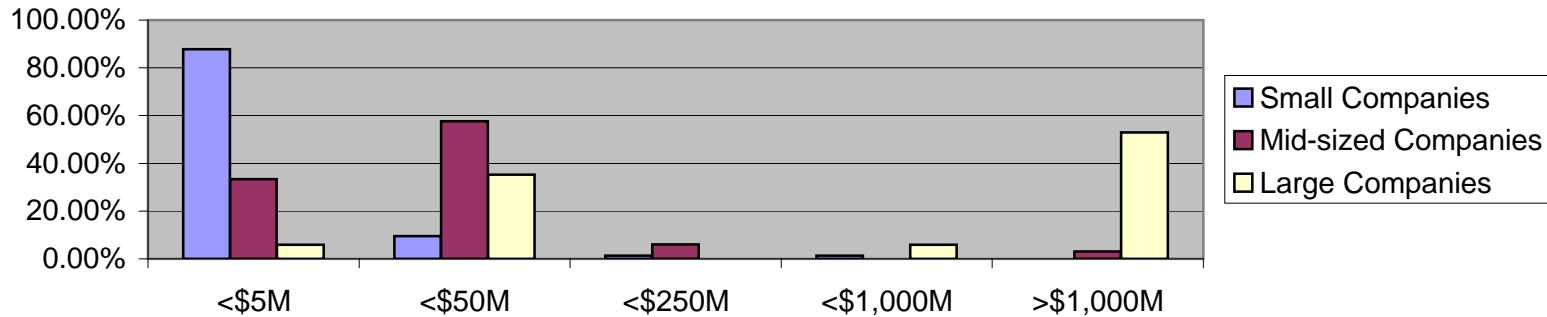
21st Century Supply Chain Transformation Survey Data



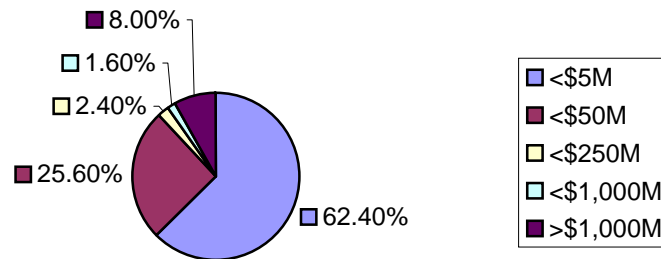
21st Century Supply Chain Transformation Survey Data

Approximately how much does your company spend in material procurement annually?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
<\$5M	87.84%	33.33%	5.88%	62.40%
<\$50M	9.46%	57.58%	35.29%	25.60%
<\$250M	1.35%	6.06%	0.00%	2.40%
<\$1,000M	1.35%	0.00%	5.88%	1.60%
>\$1,000M	0.00%	3.03%	52.94%	8.00%

Approximately how much does your company spend in material procurement annually?



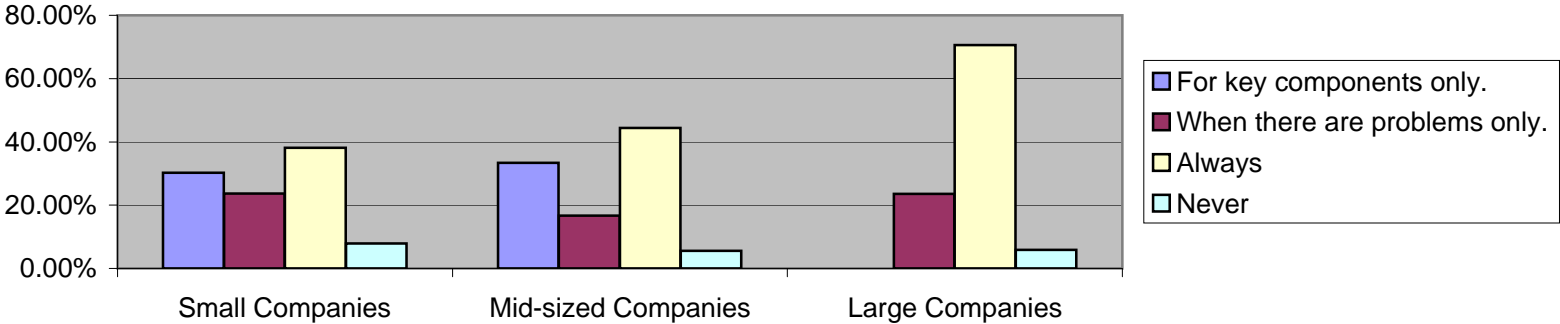
All Companies



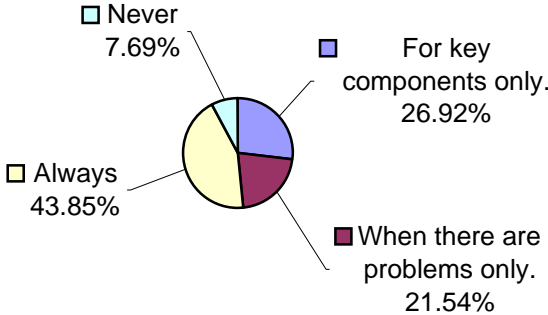
21st Century Supply Chain Transformation Survey Data

Does your company manage suppliers?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
For key components only.	30.26%	33.33%	0.00%	26.92%
When there are problems only.	23.68%	16.67%	23.53%	21.54%
Always	38.16%	44.44%	70.59%	43.85%
Never	7.89%	5.56%	5.88%	7.69%

Does your company manage suppliers?



All Companies

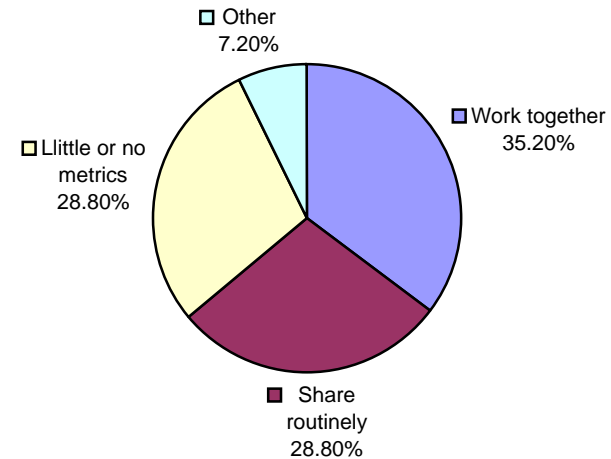
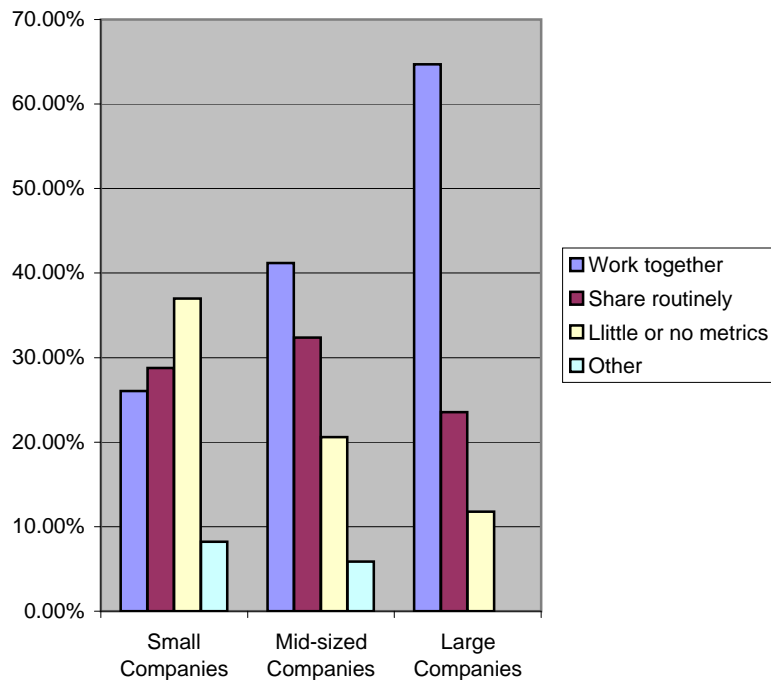


21st Century Supply Chain Transformation Survey Data

If so, how are suppliers managed by your company?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
We measure suppliers on cost, quality, and delivery and work together with key suppliers to help them improve.	26.03%	41.18%	64.71%	35.20%
We measure suppliers on cost, quality, and delivery and share that information routinely with them.	28.77%	32.35%	23.53%	28.80%
Little or no metrics are used to manage suppliers.	36.99%	20.59%	11.76%	28.80%
Other (please specify)	8.22%	5.88%	0.00%	7.20%

All Companies

If so, how are suppliers managed by your company?

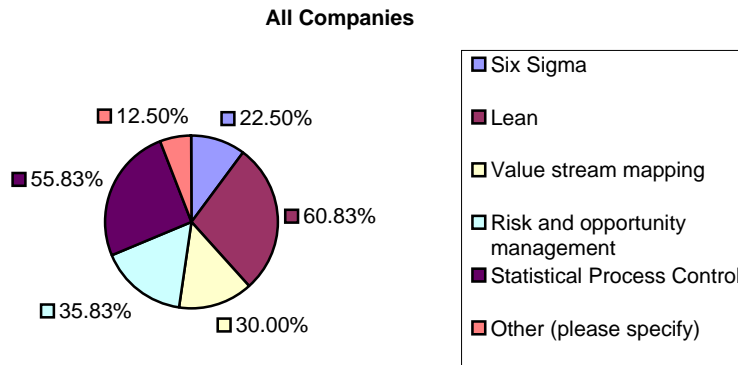
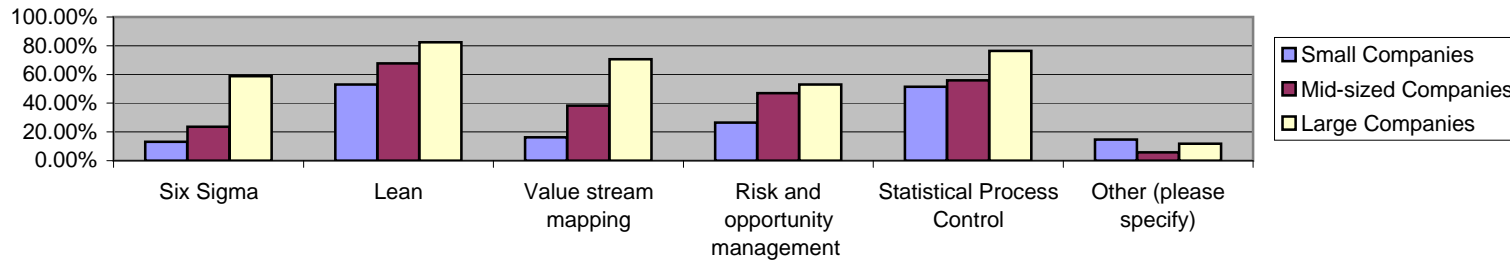


Others
 depends on specific circumstances
 Quality driven metrics
 Prime approvals
 N/A
 Constant (rolling) evaluation
 iso9001-2000

21st Century Supply Chain Transformation Survey Data

What improvement processes are used by your company? (Check all that apply, minimum of one)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Six Sigma	13.24%	23.53%	58.82%	22.50%
Lean	52.94%	67.65%	82.35%	60.83%
Value stream mapping	16.18%	38.24%	70.59%	30.00%
Risk and opportunity management	26.47%	47.06%	52.94%	35.83%
Statistical Process Control	51.47%	55.88%	76.47%	55.83%
Other (please specify)	14.71%	5.88%	11.76%	12.50%

What improvement processes are used by your company?



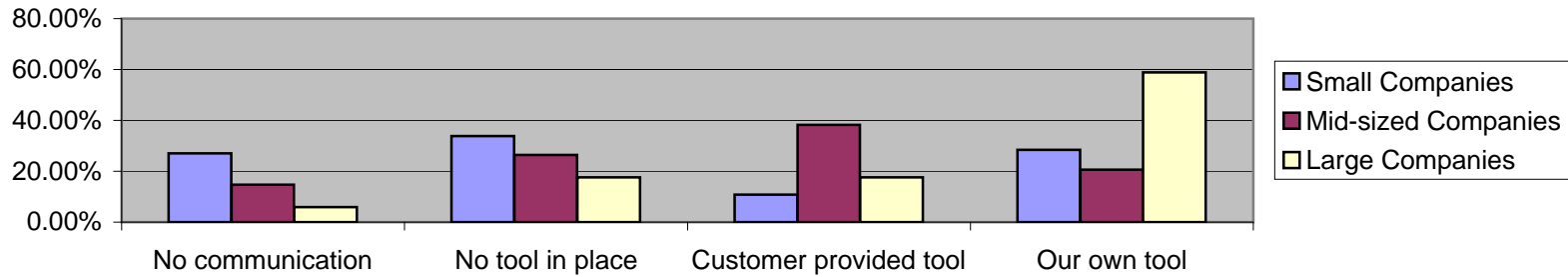
Others
 Internal QSM
 aspects of others as well
 Internal
 n/A
 none
 on time delivery, quality of material-documentation and
 6S
 Threats
 Continuous Improvement
 none
 We are beginning to implement AS 9100
 None
 none
 Trial & Error
 Digital Data Migration Processes



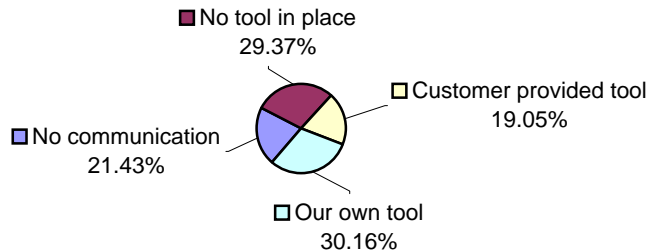
21st Century Supply Chain Transformation Survey Data

Does your company use a specific tool to periodically communicate performance and quality metrics to your customers?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
No communication of performance.	27.03%	14.71%	5.88%	21.43%
Communicate performance but no tool in place.	33.78%	26.47%	17.65%	29.37%
Communicate performance using a customer provided tool.	10.81%	38.24%	17.65%	19.05%
Communicate performance using our own tool.	28.38%	20.59%	58.82%	30.16%

Does your company use a specific tool to periodically communicate performance and quality metrics to your customers?



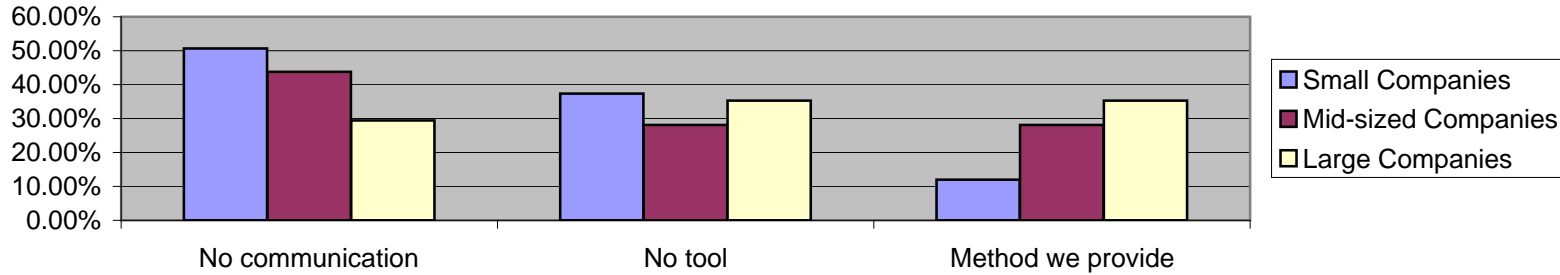
All Companies



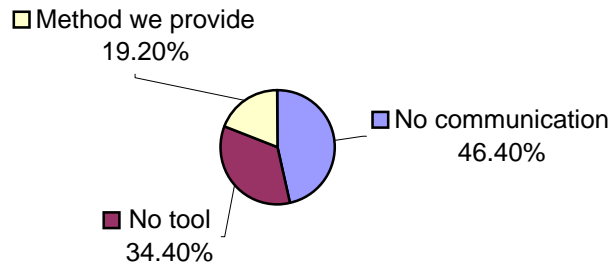
21st Century Supply Chain Transformation Survey Data

Do your suppliers use a specific tool to periodically communicate performance and quality metrics to your company?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
No communication of performance.	50.67%	43.75%	29.41%	46.40%
Communicate performance but no tool in place.	37.33%	28.12%	35.29%	34.40%
Communicate performance using a communication method that we provide.	12.00%	28.12%	35.29%	19.20%

Do your suppliers use a specific tool to periodically communicate performance and quality metrics to your company?



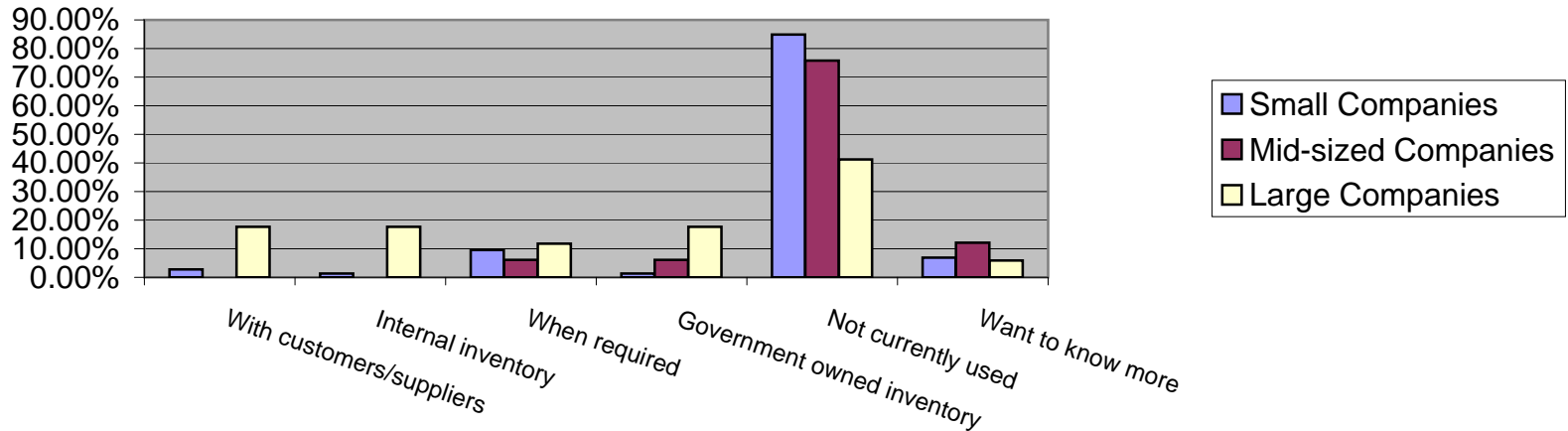
All Companies



21st Century Supply Chain Transformation Survey Data

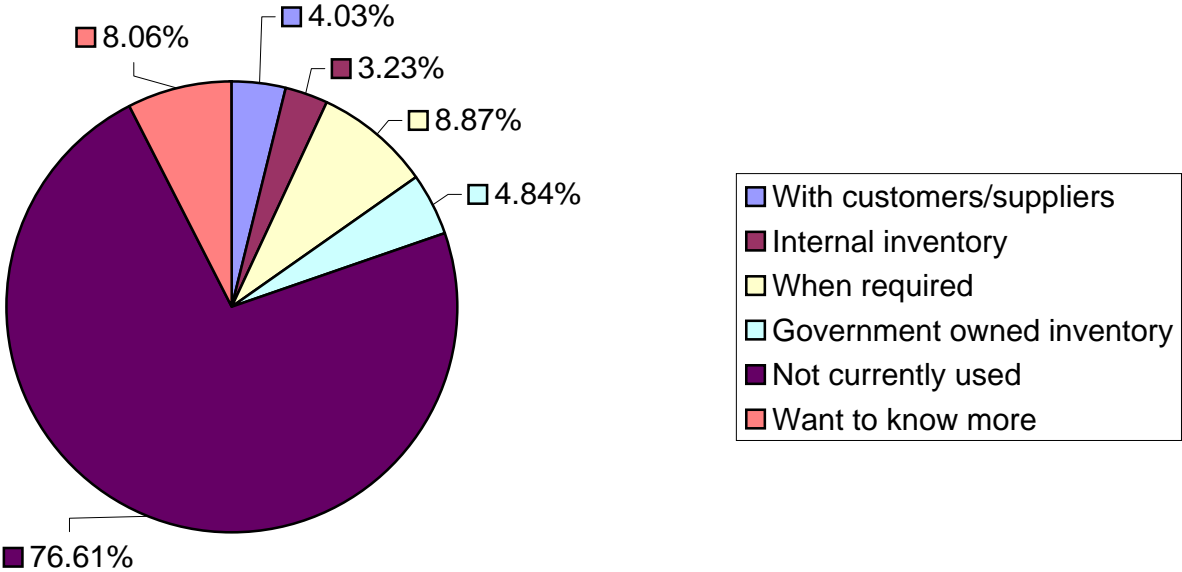
Please indicate which most accurately describes your company's current use of RFID (Radio Frequency Identification) technology for inventory tracking and logistics?(Check all that apply, minimum of one)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
RFID is currently used for tracking most parts internally and with customers/suppliers.	2.74%	0.00%	17.65%	4.03%
RFID is currently used only for tracking internal inventory.	1.37%	0.00%	17.65%	3.23%
RFID is currently only used for tracking inventory with customers and/or suppliers, when required by them.	9.59%	6.06%	11.76%	8.87%
RFID is used for tracking government owned equipment and inventory.	1.37%	6.06%	17.65%	4.84%
RFID is not currently used.	84.93%	75.76%	41.18%	76.61%
Want to know more about RFID.	6.85%	12.12%	5.88%	8.06%

Please indicate which most accurately describes your company's current use of RFID (Radio Frequency Identification) technology for inventory tracking and logistics?



21st Century Supply Chain Transformation Survey Data

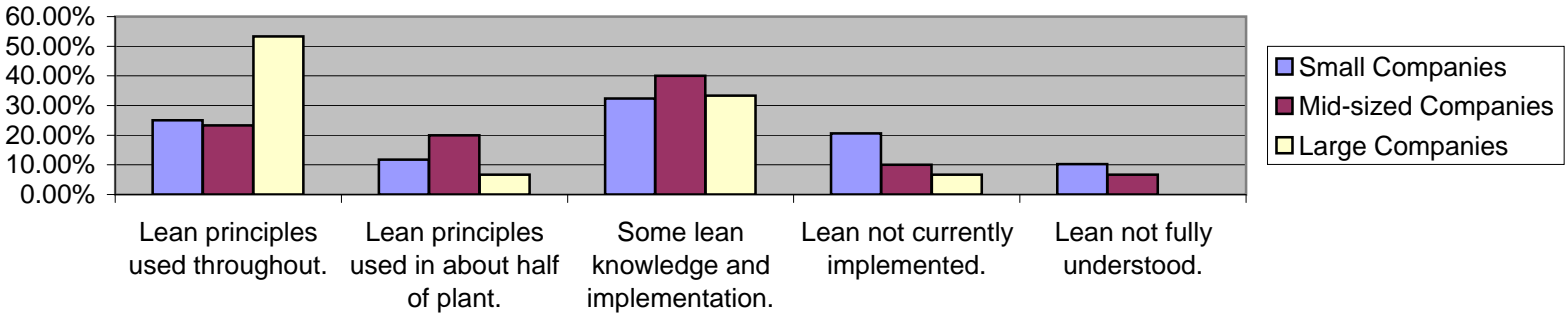
All Companies



21st Century Supply Chain Transformation Survey Data

How much are lean principles used by your company in manufacturing areas?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Lean principles used throughout.	25.00%	23.33%	53.33%	28.32%
Lean principles used in about half of plant.	11.76%	20.00%	6.67%	13.27%
Some lean knowledge and implementation.	32.35%	40.00%	33.33%	34.51%
Lean not currently implemented.	20.59%	10.00%	6.67%	15.93%
Lean not fully understood.	10.29%	6.67%	0.00%	7.96%

How much are lean principles used by your company in manufacturing areas?



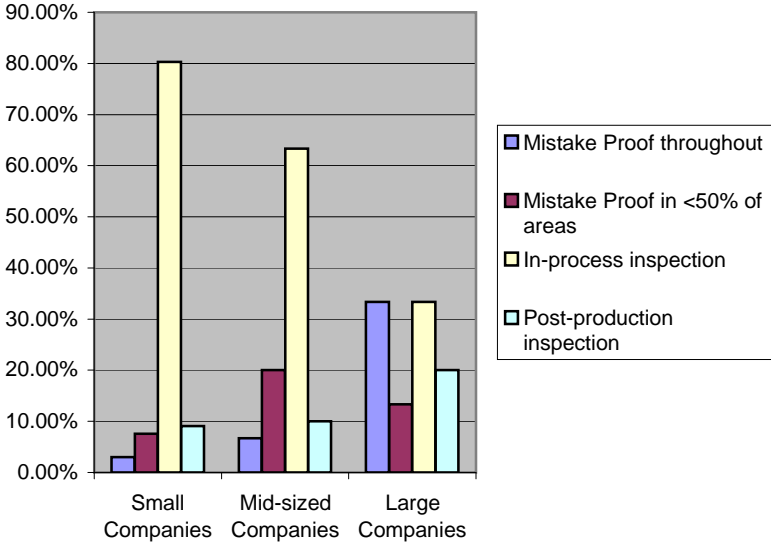
All Companies



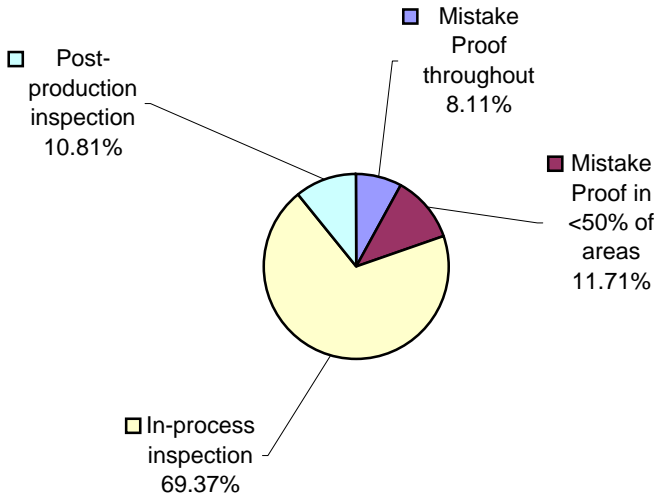
21st Century Supply Chain Transformation Survey Data

What manufacturing process controls are used by your company?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Mistake Proof (Poke-yoke) and/or SPC used throughout.	3.03%	6.67%	33.33%	8.11%
Mistake Proof (Poke-yoke) and/or SPC used in <50% of areas.	7.58%	20.00%	13.33%	11.71%
In-process inspection is used to check quality.	80.30%	63.33%	33.33%	69.37%
Post-production inspection is only method used to check quality.	9.09%	10.00%	20.00%	10.81%

What manufacturing process controls are used by your company?



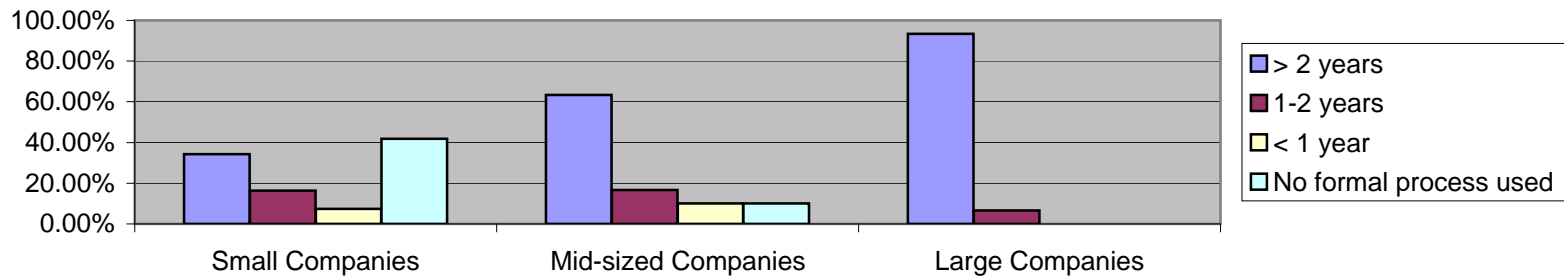
All Companies



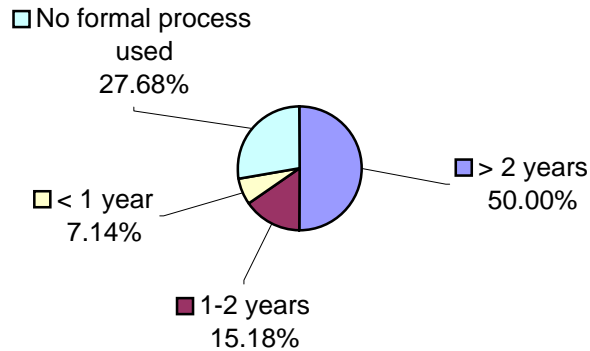
21st Century Supply Chain Transformation Survey Data

Approximately how long has your company used a continuous improvement method such as Six Sigma or lean?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
> 2 years	34.33%	63.33%	93.33%	50.00%
1-2 years	16.42%	16.67%	6.67%	15.18%
< 1 year	7.46%	10.00%	0.00%	7.14%
No formal continuous improvement process	41.79%	10.00%	0.00%	27.68%

Approximately how long has your company used a continuous improvement method such as Six Sigma or lean?



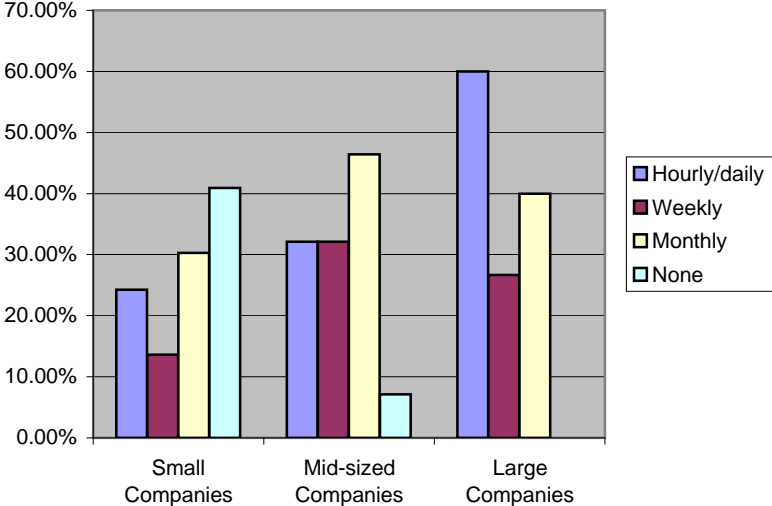
All Companies



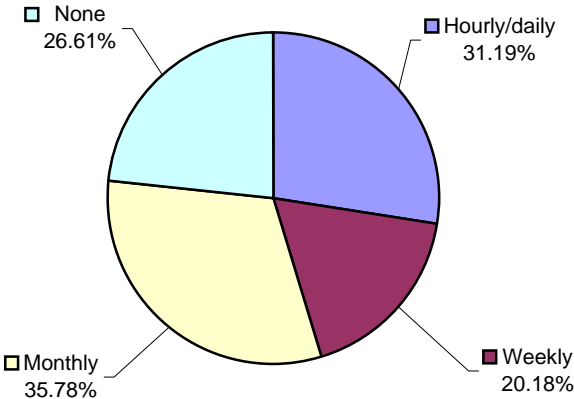
21st Century Supply Chain Transformation Survey Data

How are performance metrics used by your company in manufacturing to drive improvements?(Check all that apply, minimum of one)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Hourly and daily visual controls and metrics are used by the production line teams to manage production, quality, and inventory.	24.24%	32.14%	60.00%	31.19%
Weekly performance metrics are shared with the production line teams by management.	13.64%	32.14%	26.67%	20.18%
Monthly performance metrics are shared with the production line teams by management.	30.30%	46.43%	40.00%	35.78%
No performance metrics are shared.	40.91%	7.14%	0.00%	26.61%

How are performance metrics used by your company in manufacturing to drive improvements?



All Companies



21st Century Supply Chain Transformation Survey Data

Please put in rank order according to your company's priority of supply chain metrics. (Please be sure to check an answer in each column.)

Small Companies					
answer options	Highest priority 1	2	3	4	Lowest priority 5
On time delivery to customers	50	11	1	0	0
On time deliver by suppliers	2	23	27	8	1
Customer return rate/Cost of poor quality	13	18	12	14	4
Inventory turn	0	3	8	12	42
Order fulfillment lead time	1	10	15	25	13

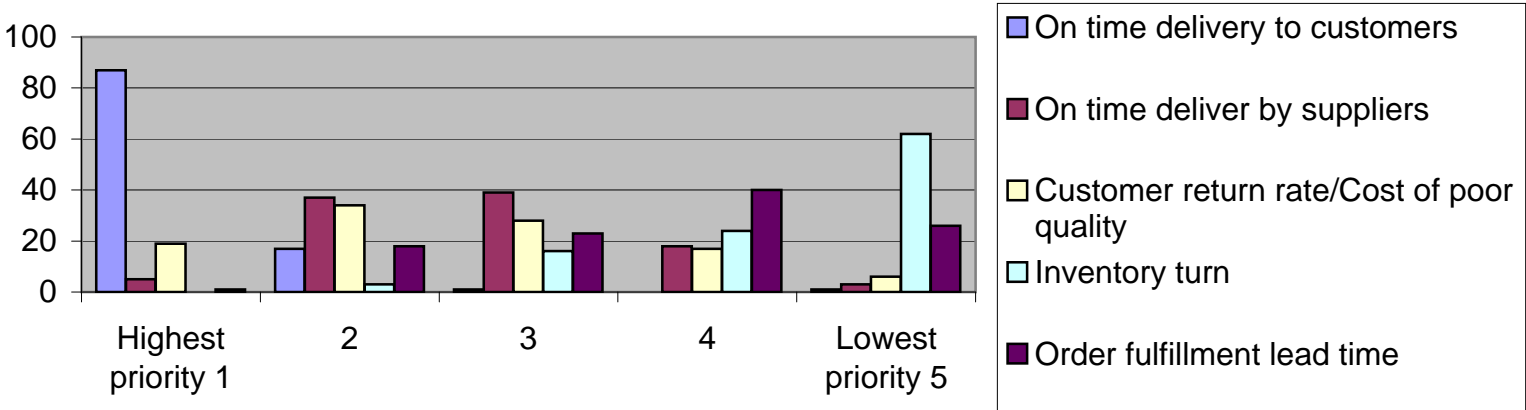
Mid-sized Companies					
answer options	Highest priority 1	2	3	4	Lowest priority 5
On time delivery to customers	25	4	0	0	1
On time deliver by suppliers	2	9	7	8	1
Customer return rate/Cost of poor quality	4	11	11	1	2
Inventory turn	0	0	6	8	13
Order fulfillment lead time	0	6	6	10	8

Large Companies					
answer options	Highest priority 1	2	3	4	Lowest priority 5
On time delivery to customers	12	2	0	0	0
On time deliver by suppliers	1	5	5	2	1
Customer return rate/Cost of poor quality	2	5	5	2	0
Inventory turn	0	0	2	4	7
Order fulfillment lead time	0	2	2	5	5

All Companies					
answer options	Highest priority 1	2	3	4	Lowest priority 5
On time delivery to customers	87	17	1	0	1
On time deliver by suppliers	5	37	39	18	3
Customer return rate/Cost of poor quality	19	34	28	17	6
Inventory turn	0	3	16	24	62
Order fulfillment lead time	1	18	23	40	26



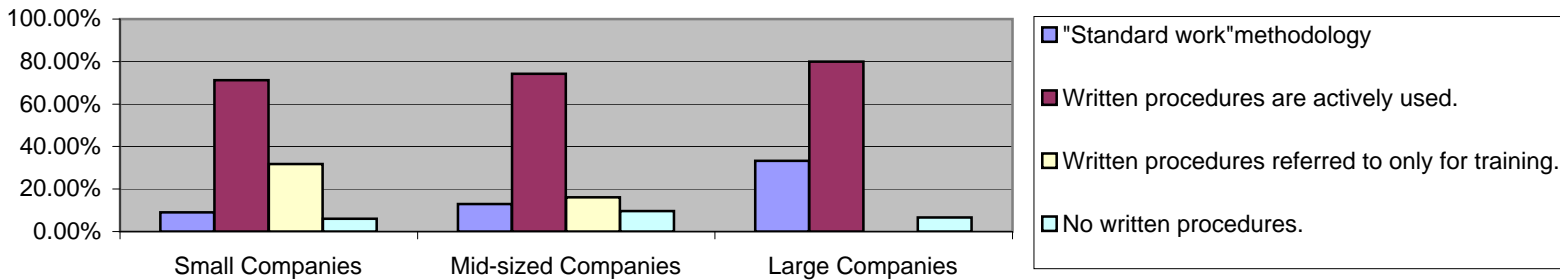
Please put in rank order according to your company's priority of supply chain metrics.



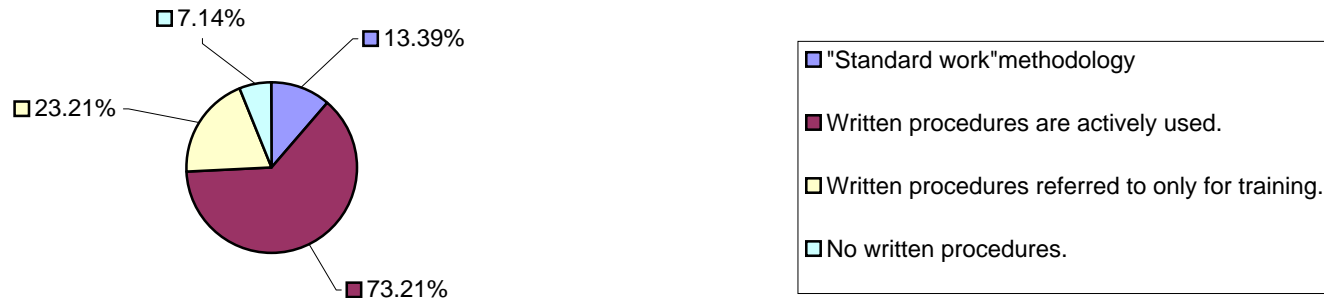
21st Century Supply Chain Transformation Survey Data

How are procedures used by your company in manufacturing to assure good quality?(Check all that apply, minimum of one)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
The "standard work" methodology has been implemented (e.g. Nissan/Toyota).	9.09%	12.90%	33.33%	13.39%
Written procedures are actively used.	71.21%	74.19%	80.00%	73.21%
Written procedures are in place and referred to only for training.	31.82%	16.13%	0.00%	23.21%
No written manufacturing procedures are in place.	6.06%	9.68%	6.67%	7.14%

How are procedures used by your company in manufacturing to assure good quality?



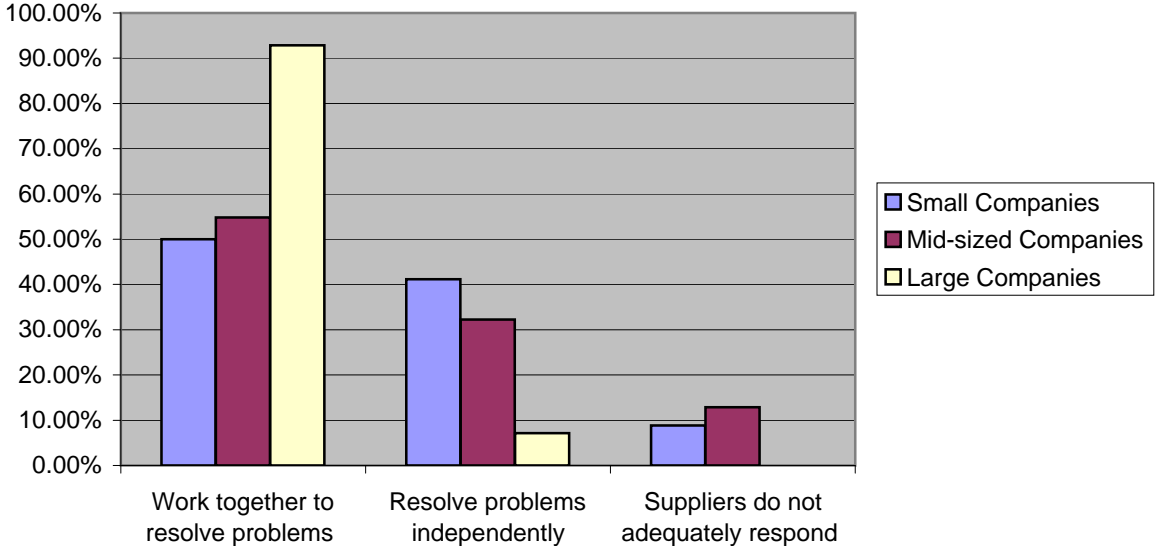
All Companies



21st Century Supply Chain Transformation Survey Data

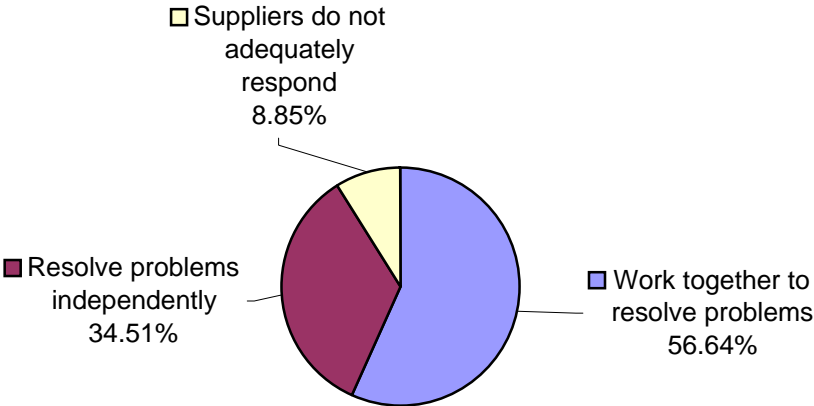
How does your company manage supplier quality issues?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Supplier quality issues are documented and analyzed. The company and suppliers work closely together to resolve problems and improve quality.	50.00%	54.84%	92.86%	56.64%
Supplier quality issues are documented. Suppliers are sent information and expected to resolve problems independently.	41.18%	32.26%	7.14%	34.51%
Suppliers do not adequately respond to quality problems.	8.82%	12.90%	0.00%	8.85%

How does your company manage supplier quality issues?



21st Century Supply Chain Transformation Survey Data

All Companies

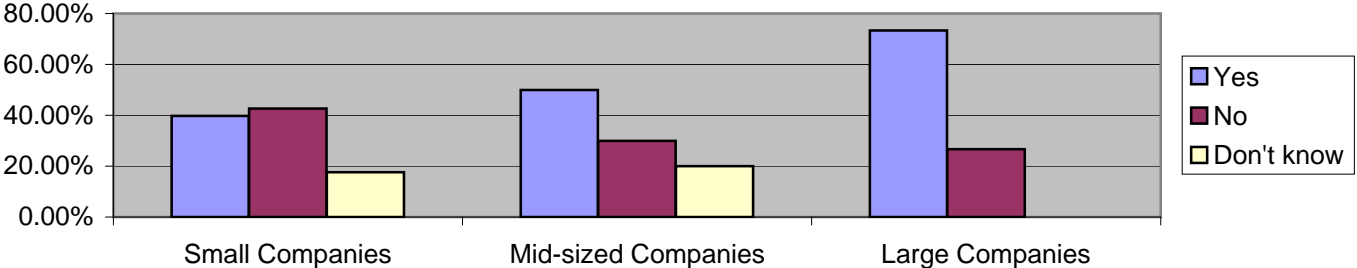


21st Century Supply Chain Transformation Survey Data

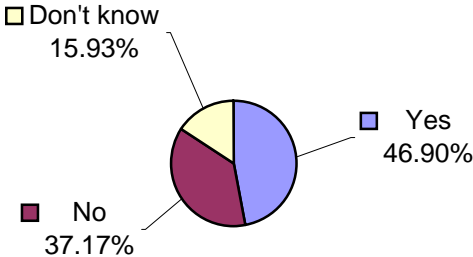
Does manufacturing lay out its product lines to align best with the TAKT time (the rate at which your customers buy your products)?

answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Yes	39.71%	50.00%	73.33%	46.90%
No	42.65%	30.00%	26.67%	37.17%
Don't know	17.65%	20.00%	0.00%	15.93%

Does manufacturing lay out its product lines to align best with the TAKT time (the rate at which your customers buy your products)?



All Companies



21st Century Supply Chain Transformation Survey Data

**Which of the following Quality Management System Certification does your company...
(Please be sure to check an answer in each row.)**

Small Companies			
answer options	have?	need?	Not applicable
AS9100	29	21	7
ISO 14001	1	12	23
ISO 9001:2001	35	10	9
TS 16949	0	4	33
Mil-Q-9858	16	5	24
Mil-I-45208	22	5	20
MIL-PRF 38534	3	3	29

Mid-sized Companies			
answer options	have?	need?	Not applicable
AS9100	19	2	3
ISO 14001	2	2	13
ISO 9001:2001	22	2	1
TS 16949	1	1	14
Mil-Q-9858	10	0	9
Mil-I-45208	13	0	6
MIL-PRF 38534	3	0	14

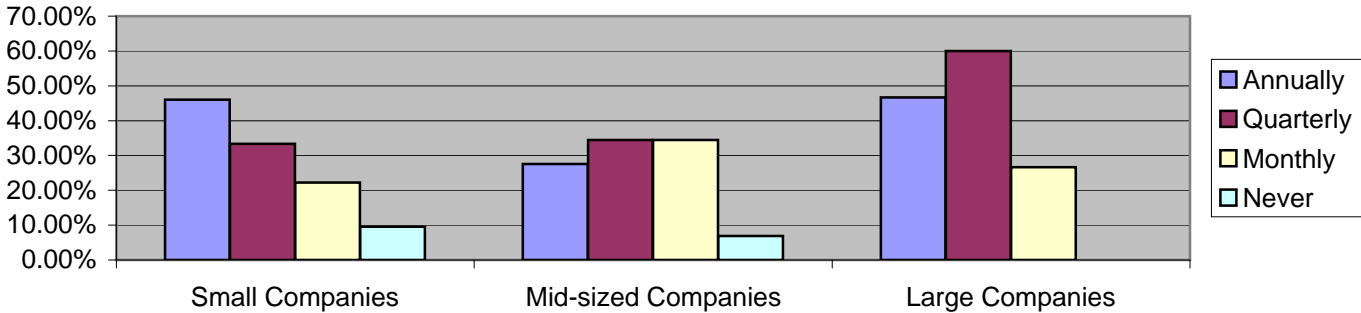
Large Companies			
answer options	have?	need?	Not applicable
AS9100	11	0	2
ISO 14001	8	0	3
ISO 9001:2001	13	0	1
TS 16949	3	0	8
Mil-Q-9858	4	0	7
Mil-I-45208	4	0	7
MIL-PRF 38534	3	0	7

All Companies			
answer options	have?	need?	Not applicable
AS9100	59	23	12
ISO 14001	11	14	39
ISO 9001:2001	70	12	11
TS 16949	4	5	55
Mil-Q-9858	30	5	40
Mil-I-45208	39	5	33
MIL-PRF 38534	9	3	50

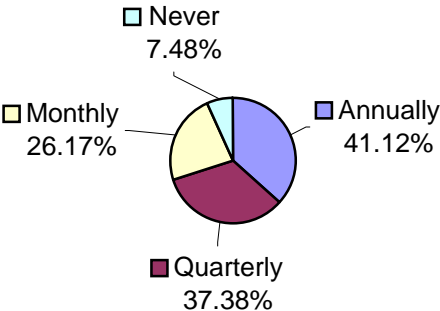
21st Century Supply Chain Transformation Survey Data

How often does your company do quality self audits?(Check all that apply, minimum of one)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Annually	46.03%	27.59%	46.67%	41.12%
Quarterly	33.33%	34.48%	60.00%	37.38%
Monthly	22.22%	34.48%	26.67%	26.17%
Never	9.52%	6.90%	0.00%	7.48%

How often does your company do quality self audits?



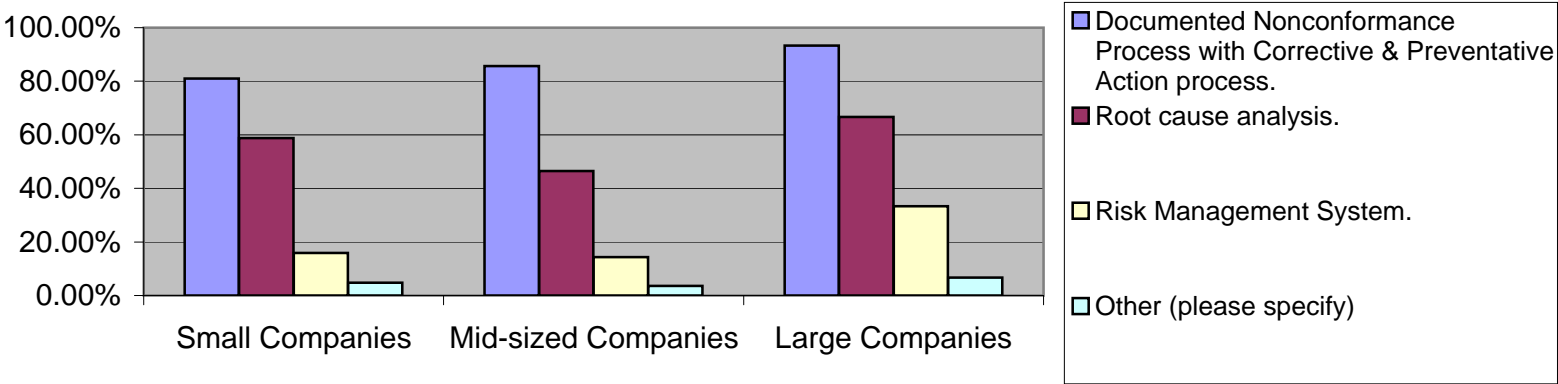
All Companies



21st Century Supply Chain Transformation Survey Data

What is your company's Nonconformance Management process?(Check all that apply, minimum of one)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Documented Nonconformance Process with Corrective & Preventative Action process.	80.95%	85.71%	93.33%	83.96%
Root cause analysis.	58.73%	46.43%	66.67%	56.60%
Risk Management System.	15.87%	14.29%	33.33%	17.92%
Other (please specify)	4.76%	3.57%	6.67%	4.72%

What is your company's Nonconformance Management process?



21st Century Supply Chain Transformation Survey Data

Does your company have NADCAP Certification in these areas?(Please be sure to check an answer in each row.)

Small Companies			
answer options	Yes	No (But needed)	No (Not Applicable)
NDT	6	6	47
Material Testing	4	8	48
Heat Treat	5	4	50
Welding	3	3	51
Brazing	3	2	52
Chemical Processing	4	4	50
Platings	4	4	50
Coatings	3	4	51
Soldering	5	2	51

Mid-sized Companies			
answer options	Yes	No(But needed)	No(Not Applicable)
NDT	6	2	19
Material Testing	3	3	19
Heat Treat	4	2	19
Welding	6	2	17
Brazing	1	3	21
Chemical Processing	2	2	21
Platings	1	2	21
Coatings	1	2	21
Soldering	1	2	21

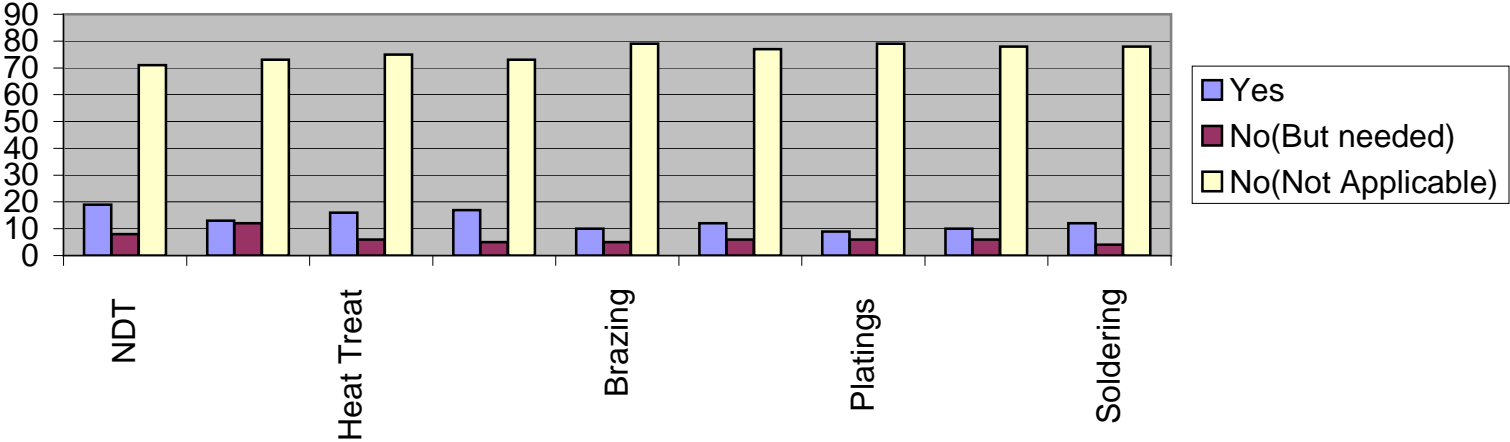
Large Companies			
answer options	Yes	No(But needed)	No(Not Applicable)
NDT	7	0	5
Material Testing	6	1	6
Heat Treat	7	0	6
Welding	8	0	5
Brazing	6	0	6
Chemical Processing	6	0	6
Platings	4	0	8
Coatings	6	0	6
Soldering	6	0	6



21st Century Supply Chain Transformation Survey Data

All Companies			
answer options	Yes	No(But needed)	No(Not Applicable)
NDT	19	8	71
Material Testing	13	12	73
Heat Treat	16	6	75
Welding	17	5	73
Brazing	10	5	79
Chemical Processing	12	6	77
Platings	9	6	79
Coatings	10	6	78
Soldering	12	4	78

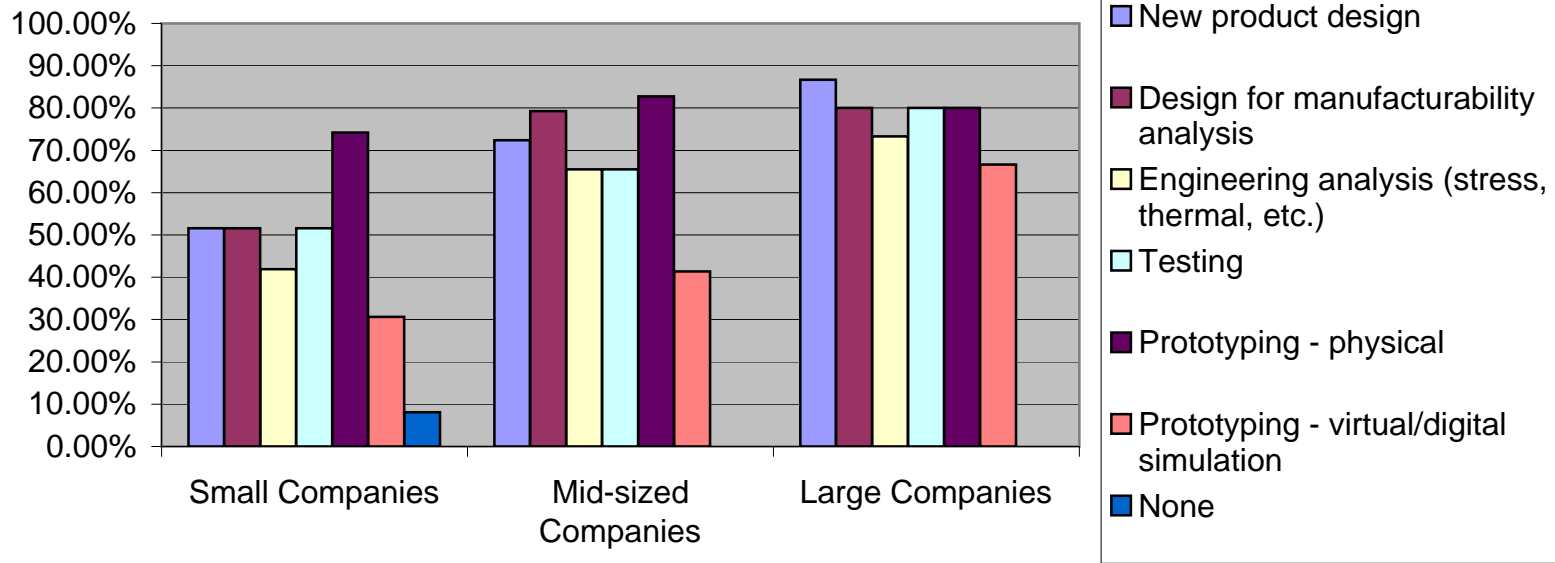
Does your company have NADCAP Certification in these areas?



21st Century Supply Chain Transformation Survey Data

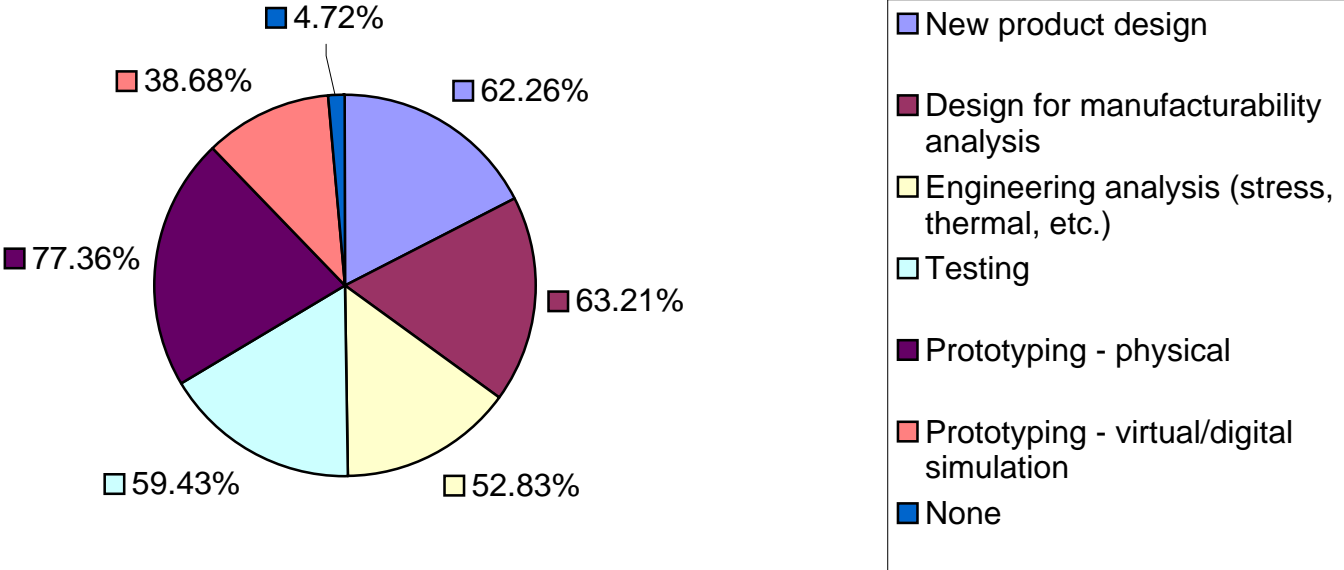
What capabilities exist in your company? (Check all that apply, minimum of one)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
New product design	51.61%	72.41%	86.67%	62.26%
Design for manufacturability analysis	51.61%	79.31%	80.00%	63.21%
Engineering analysis (stress, thermal, etc.)	41.94%	65.52%	73.33%	52.83%
Testing	51.61%	65.52%	80.00%	59.43%
Prototyping - physical	74.19%	82.76%	80.00%	77.36%
Prototyping - virtual/digital simulation	30.65%	41.38%	66.67%	38.68%
None	8.06%	0.00%	0.00%	4.72%

What capabilities exist in your company?



21st Century Supply Chain Transformation Survey Data

All Companies



21st Century Supply Chain Transformation Survey Data

How often does your company collaborate with suppliers in each of these functions?(Please be sure to check an answer in each row.)

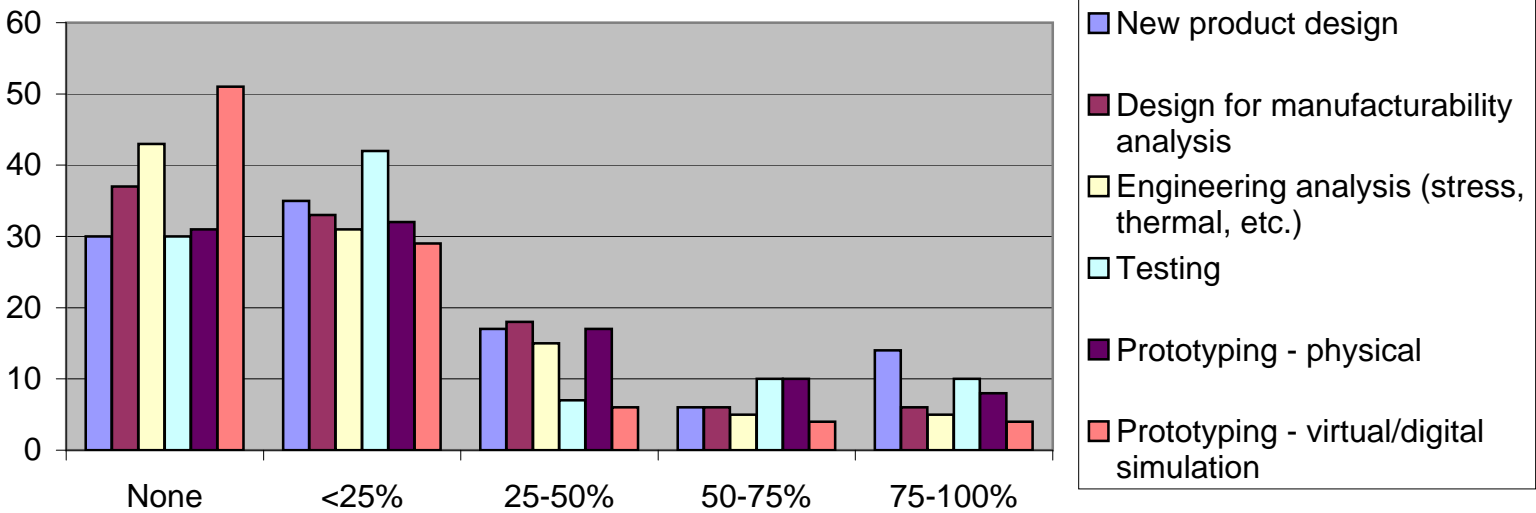
Small Companies					
answer options	None	<25%	25-50%	50-75%	75-100%
New product design	25	18	7	3	7
Design for manufacturability analysis	30	16	7	3	3
Engineering analysis (stress, thermal, etc.)	33	15	7	2	1
Testing	22	24	4	5	5
Prototyping - physical	25	18	6	3	5
Prototyping - virtual/digital simulation	38	13	2	1	2

Mid-sized Companies					
answer options	None	<25%	25-50%	50-75%	75-100%
New product design	4	12	7	3	2
Design for manufacturability analysis	5	12	8	2	0
Engineering analysis (stress, thermal, etc.)	8	13	4	1	1
Testing	6	13	3	1	2
Prototyping - physical	4	10	8	4	1
Prototyping - virtual/digital simulation	11	11	2	1	0

Large Companies					
answer options	None	<25%	25-50%	50-75%	75-100%
New product design	1	5	3	0	5
Design for manufacturability analysis	2	5	3	1	3
Engineering analysis (stress, thermal, etc.)	2	3	4	2	3
Testing	2	5	0	4	3
Prototyping - physical	2	4	3	3	2
Prototyping - virtual/digital simulation	2	5	2	2	2

All Companies					
answer options	None	<25%	25-50%	50-75%	75-100%
New product design	30	35	17	6	14
Design for manufacturability analysis	37	33	18	6	6
Engineering analysis (stress, thermal, etc.)	43	31	15	5	5
Testing	30	42	7	10	10
Prototyping - physical	31	32	17	10	8
Prototyping - virtual/digital simulation	51	29	6	4	4

How often does your company collaborate with suppliers in each of these functions?



21st Century Supply Chain Transformation Survey Data

How often does your company collaborate with customers in each of these functions?(Please be sure to check an answer in each row.)

Small Companies					
answer options	None	<25%	25-50%	50-75%	75-100%
New product design	14	23	8	3	14
Design for manufacturability analysis	18	26	7	3	8
Engineering analysis (stress, thermal, etc.)	26	19	7	1	7
Testing	19	24	5	5	9
Prototyping - physical	14	24	9	4	10
Prototyping - virtual/digital simulation	35	14	3	3	4

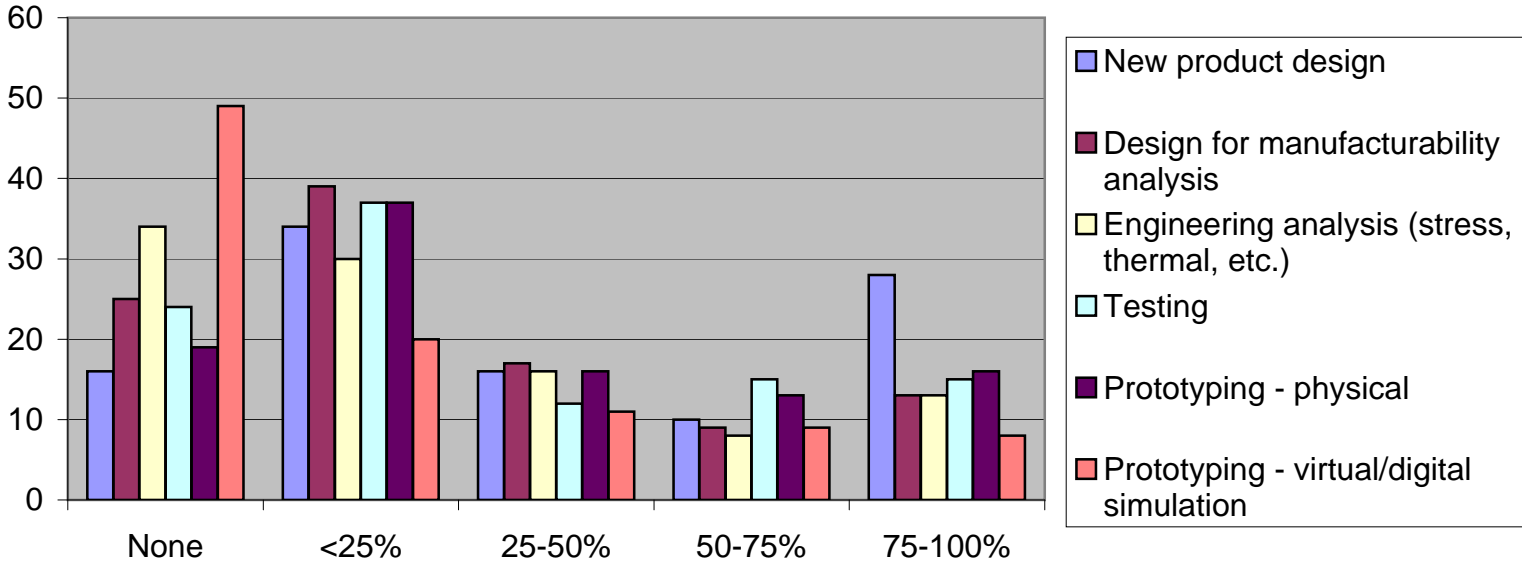
Mid-sized Companies					
answer options	None	<25%	25-50%	50-75%	75-100%
New product design	2	9	6	5	6
Design for manufacturability analysis	5	9	7	3	3
Engineering analysis (stress, thermal, etc.)	7	9	6	2	3
Testing	4	10	4	7	2
Prototyping - physical	3	11	5	5	2
Prototyping - virtual/digital simulation	10	4	6	3	1

Large Companies					
answer options	None	<25%	25-50%	50-75%	75-100%
New product design	0	2	2	2	8
Design for manufacturability analysis	2	4	3	3	2
Engineering analysis (stress, thermal, etc.)	1	2	3	5	3
Testing	1	3	3	3	4
Prototyping - physical	2	2	2	4	4
Prototyping - virtual/digital simulation	4	2	2	3	3

All Companies					
answer options	None	<25%	25-50%	50-75%	75-100%
New product design	16	34	16	10	28
Design for manufacturability analysis	25	39	17	9	13
Engineering analysis (stress, thermal, etc.)	34	30	16	8	13
Testing	24	37	12	15	15
Prototyping - physical	19	37	16	13	16
Prototyping - virtual/digital simulation	49	20	11	9	8



How often does your company collaborate with customers in each of these functions?

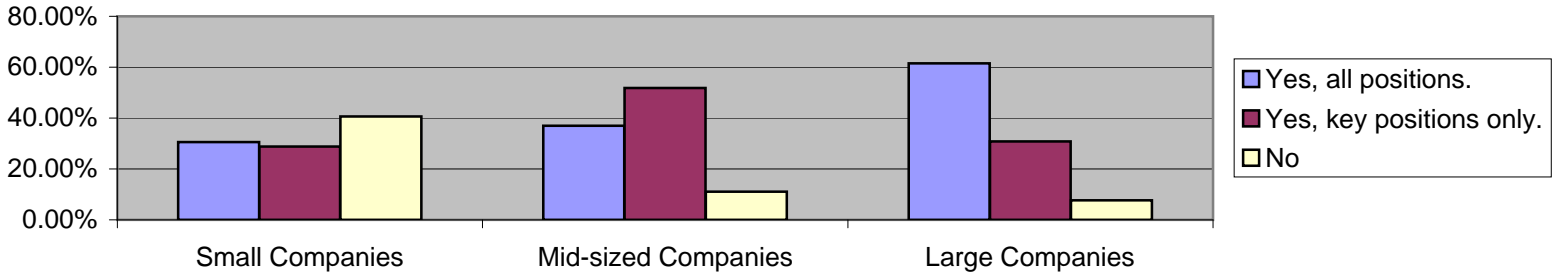


21st Century Supply Chain Transformation Survey Data

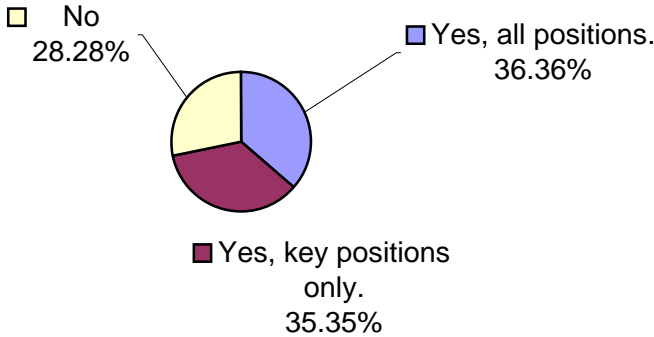
Does your company have a workforce development plan that has defined skill requirements, assessment, gaps analysis, and training for all positions?

answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Yes, all positions.	30.51%	37.04%	61.54%	36.36%
Yes, key positions only.	28.81%	51.85%	30.77%	35.35%
No	40.68%	11.11%	7.69%	28.28%

Does your company have a workforce development plan that has defined skill requirements, assessment, gaps analysis, and training for all positions?



All Companies

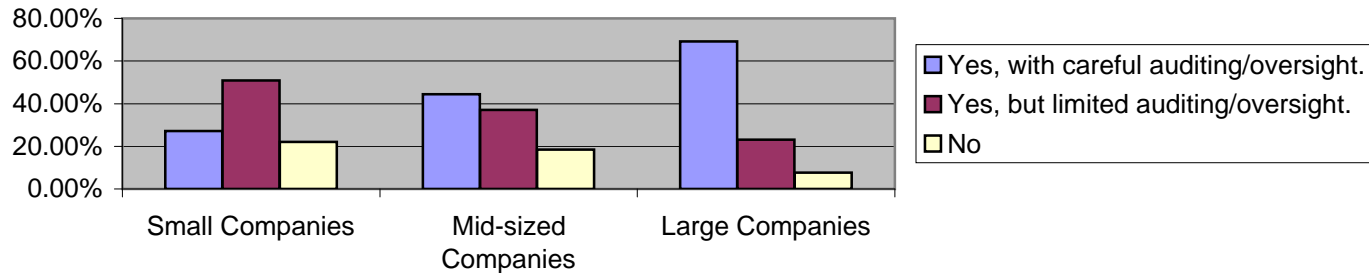


21st Century Supply Chain Transformation Survey Data

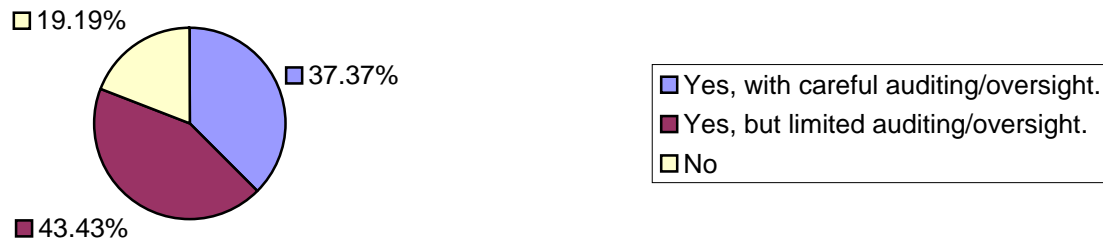
Are there training and procedures to control high risk activities at your company (e.g. lock out/tag out, confined space entry, excavation/ trenching, work at heights, work requiring hazardous energy control, high voltage electrical work, work involving scaffolding or steel erection)?

answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Yes, with careful auditing/oversight.	27.12%	44.44%	69.23%	37.37%
Yes, but limited auditing/oversight.	50.85%	37.04%	23.08%	43.43%
No	22.03%	18.52%	7.69%	19.19%

Are there training and procedures to control high risk activities at your company?



All Companies

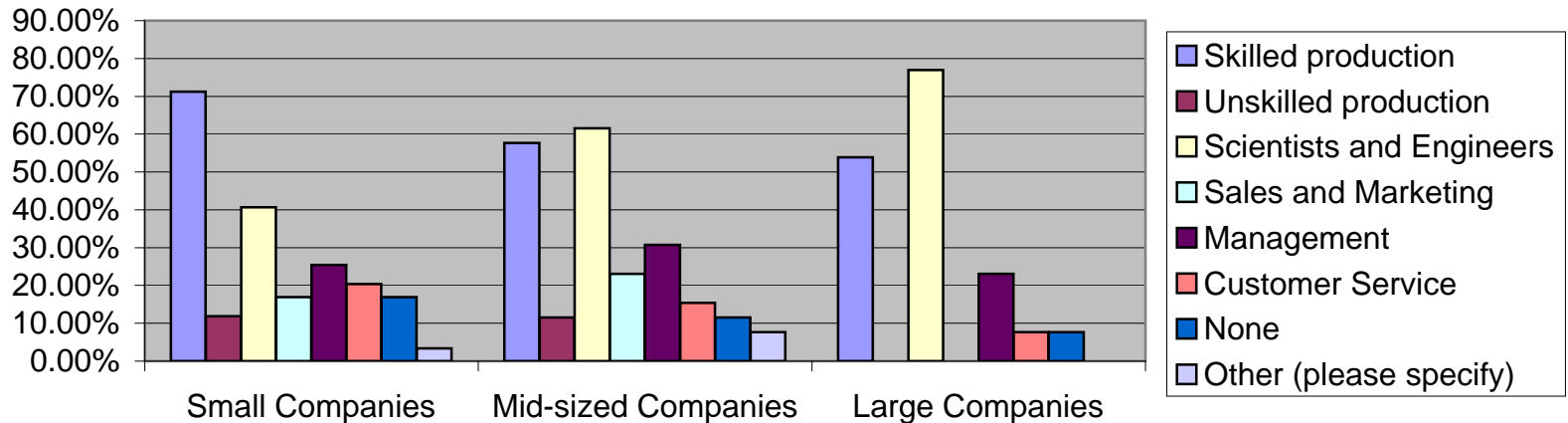


21st Century Supply Chain Transformation Survey Data

Where do you anticipate a shortage of employees to occur within your company in the next five years? (Check all that apply, minimum of one)

answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Skilled production	71.19%	57.69%	53.85%	65.31%
Unskilled production	11.86%	11.54%	0.00%	10.20%
Scientists and Engineers	40.68%	61.54%	76.92%	51.02%
Sales and Marketing	16.95%	23.08%	0.00%	16.33%
Management	25.42%	30.77%	23.08%	26.53%
Customer Service	20.34%	15.38%	7.69%	17.35%
None	16.95%	11.54%	7.69%	14.29%
Other (please specify)	3.39%	7.69%	0.00%	4.08%

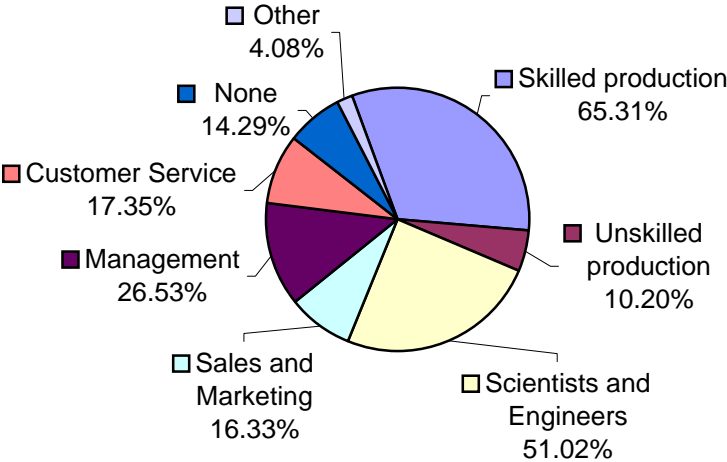
Where do you anticipate a shortage of employees to occur within your company in the next five years?



Others
 High Tech Machinist-3,4,5axis
 Skilled technology Instructors
 Field installation and start up personnel
 tool designers, inspectors, program
 mangement



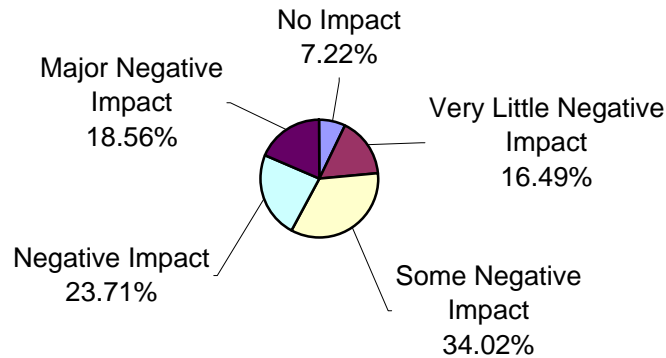
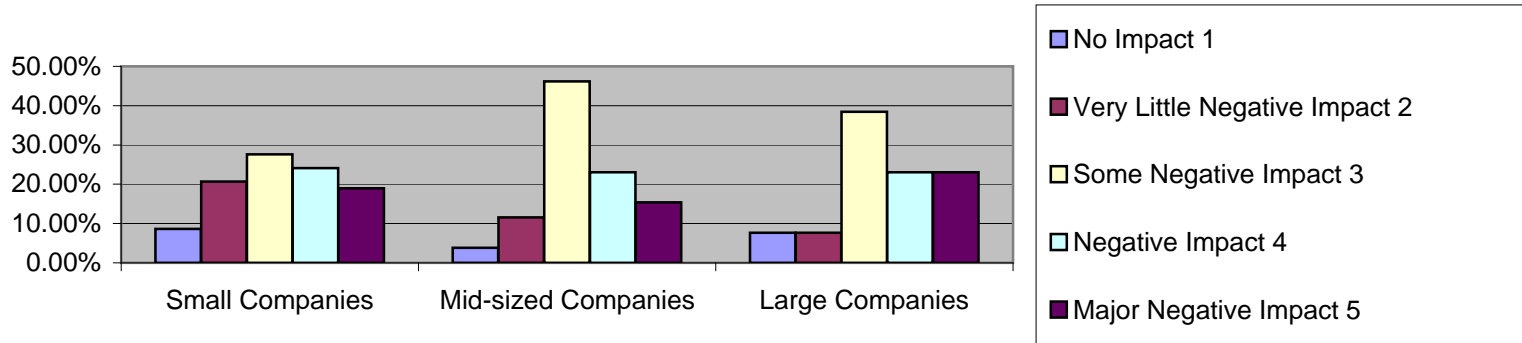
21st Century Supply Chain Transformation Survey Data



21st Century Supply Chain Transformation Survey Data

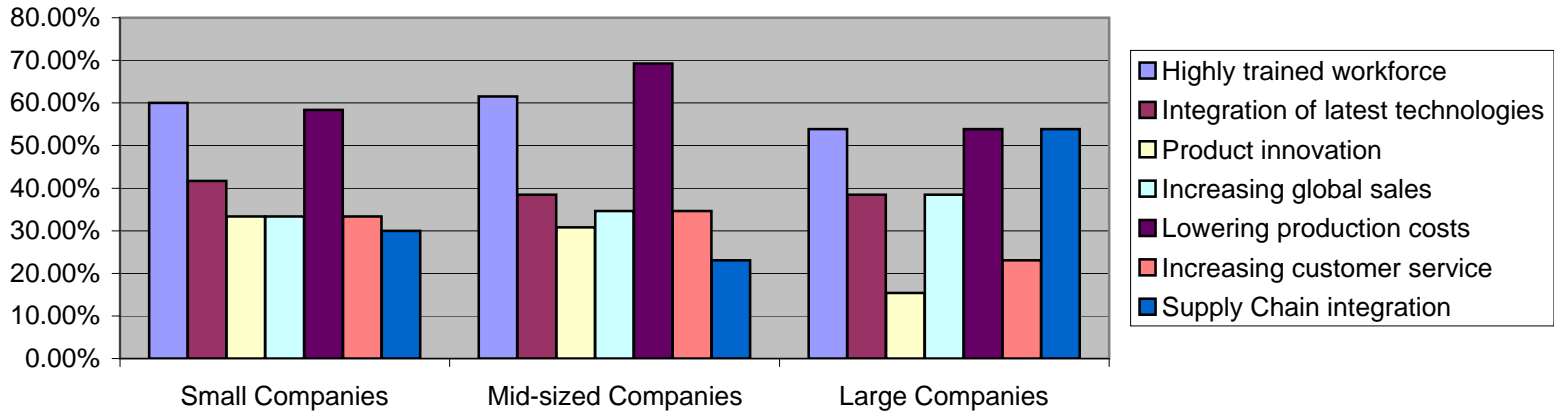
At what level does the shortage of skilled employees affect your company's ability to meet customer needs?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
No Impact 1	8.62%	3.85%	7.69%	7.22%
Very Little Negative Impact 2	20.69%	11.54%	7.69%	16.49%
Some Negative Impact 3	27.59%	46.15%	38.46%	34.02%
Negative Impact 4	24.14%	23.08%	23.08%	23.71%
Major Negative Impact 5	18.97%	15.38%	23.08%	18.56%

At what level does the shortage of skilled employees affect your company's ability to meet customer needs?

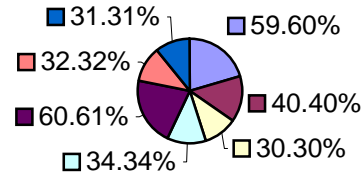


21st Century Supply Chain Transformation Survey Data

Which of the following are the most important to your company's success in the next three years? (Select up to three)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Highly trained workforce	60.00%	61.54%	53.85%	59.60%
Integration of latest technologies	41.67%	38.46%	38.46%	40.40%
Product innovation	33.33%	30.77%	15.38%	30.30%
Increasing global sales	33.33%	34.62%	38.46%	34.34%
Lowering production costs	58.33%	69.23%	53.85%	60.61%
Increasing customer service	33.33%	34.62%	23.08%	32.32%
Supply Chain integration	30.00%	23.08%	53.85%	31.31%



All Companies

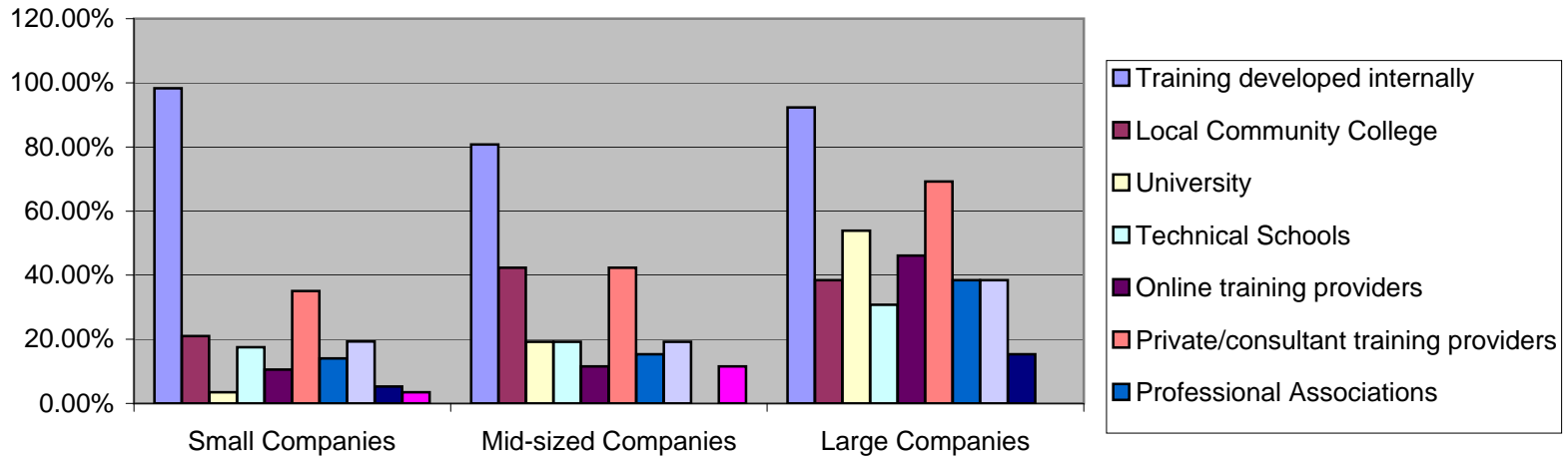


- Highly trained workforce
- Integration of latest technologies
- Product innovation
- Increasing global sales
- Lowering production costs
- Increasing customer service
- Supply Chain integration

21st Century Supply Chain Transformation Survey Data

How does your company currently meet training needs?(Check all that apply, minimum of one)

answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Training developed internally	98.25%	80.77%	92.31%	92.71%
Local Community College	21.05%	42.31%	38.46%	29.17%
University	3.51%	19.23%	53.85%	14.58%
Technical Schools	17.54%	19.23%	30.77%	19.79%
Online training providers	10.53%	11.54%	46.15%	15.62%
Private/consultant training providers	35.09%	42.31%	69.23%	41.67%
Professional Associations	14.04%	15.38%	38.46%	17.71%
State funded training programs/ETP funds	19.30%	19.23%	38.46%	21.88%
Federally funded training programs	5.26%	0.00%	15.38%	5.21%
Other (please specify)	3.51%	11.54%	0.00%	5.21%

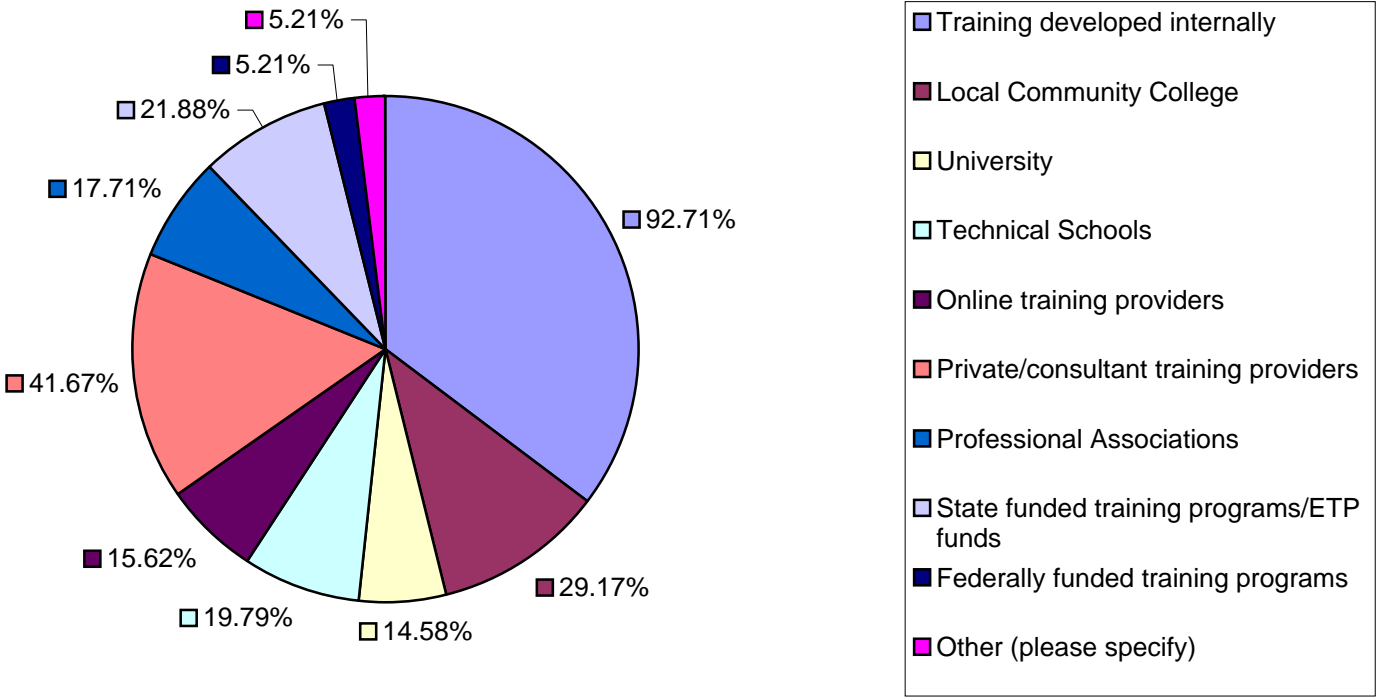


Others
 WTAAC
 Customer furnished assistance
 Self paced Professional Development
 Courses and conferences
 Experience



21st Century Supply Chain Transformation Survey Data

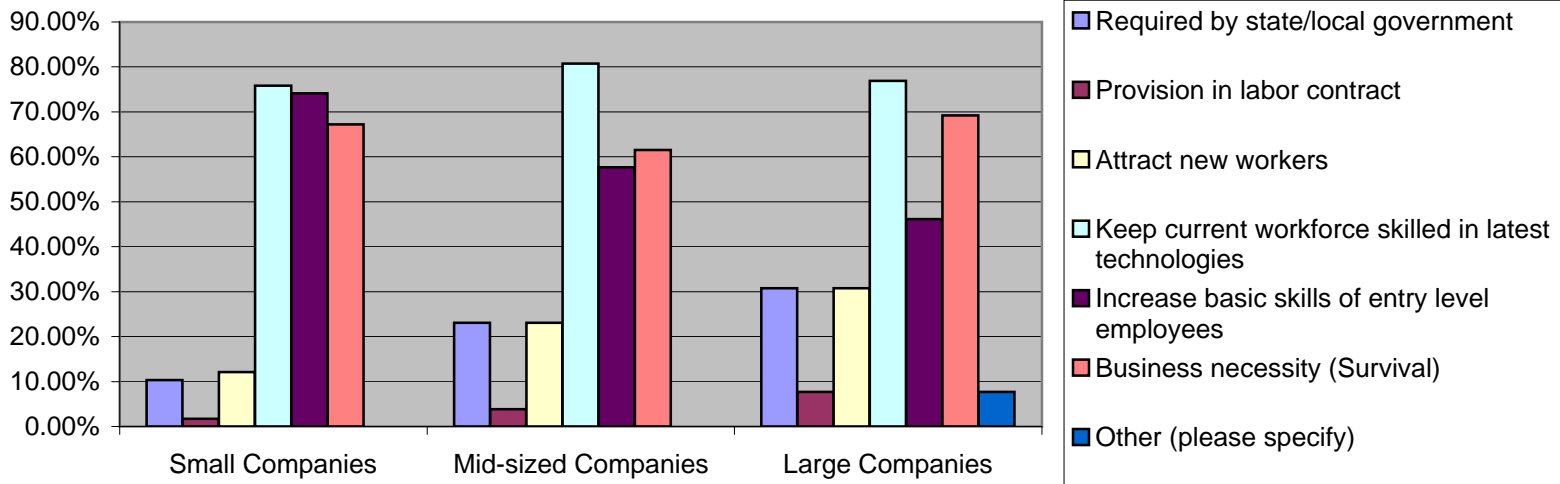
All Companies



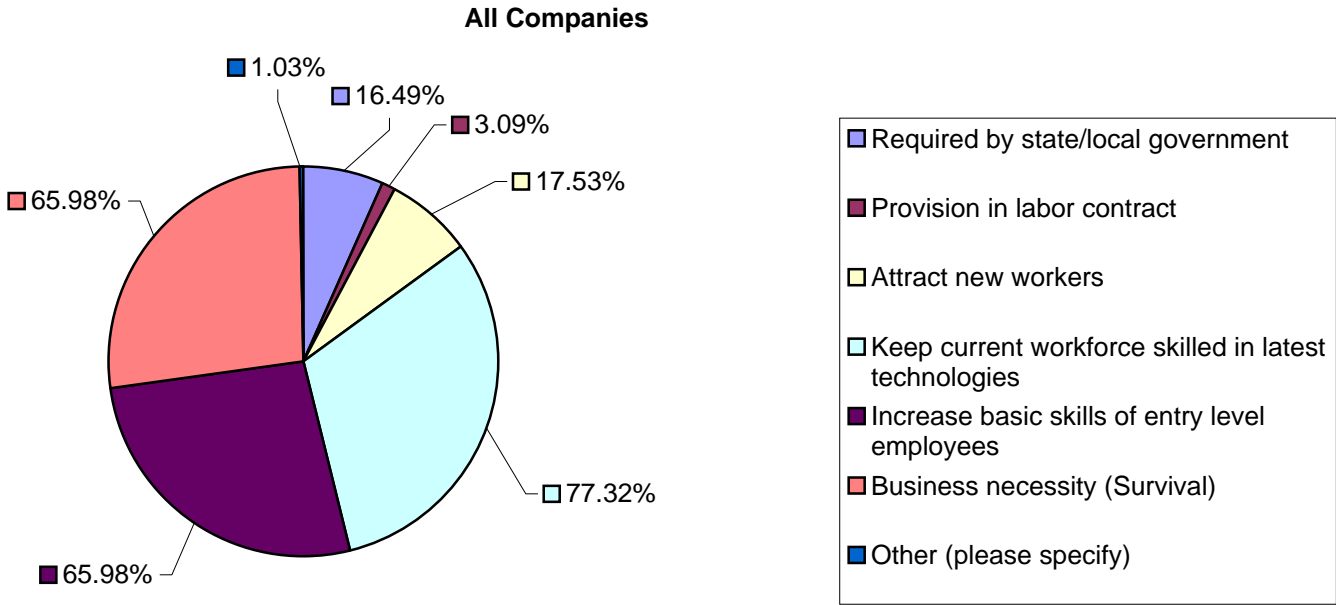
21st Century Supply Chain Transformation Survey Data

What are the predominate reasons your company provides training to your employees currently?(Select up to three)				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Required by state/local government	10.34%	23.08%	30.77%	16.49%
Provision in labor contract	1.72%	3.85%	7.69%	3.09%
Attract new workers	12.07%	23.08%	30.77%	17.53%
Keep current workforce skilled in latest technologies	75.86%	80.77%	76.92%	77.32%
Increase basic skills of entry level employees	74.14%	57.69%	46.15%	65.98%
Business necessity (Survival)	67.24%	61.54%	69.23%	65.98%
Other (please specify)	0.00%	0.00%	7.69%	1.03%

What are the predominate reasons your company provides training to your employees currently?



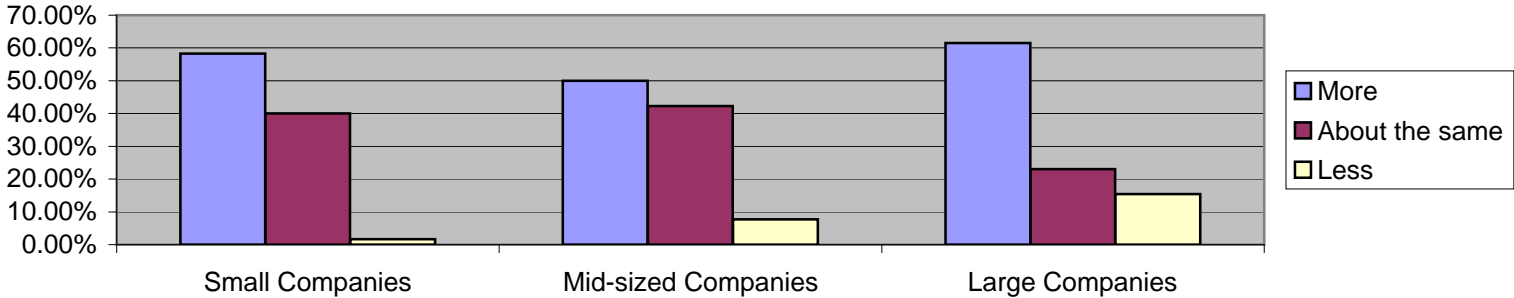
21st Century Supply Chain Transformation Survey Data



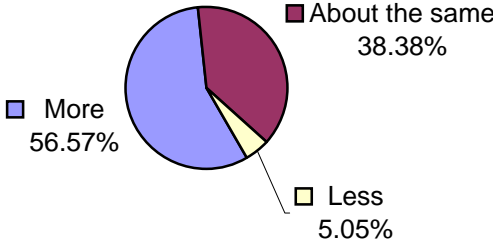
21st Century Supply Chain Transformation Survey Data

Does your company spend more, less or about the same on training as it did five years ago.				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
More	58.33%	50.00%	61.54%	56.57%
About the same	40.00%	42.31%	23.08%	38.38%
Less	1.67%	7.69%	15.38%	5.05%

Does your company spend more, less or about the same on training as it did five years ago.



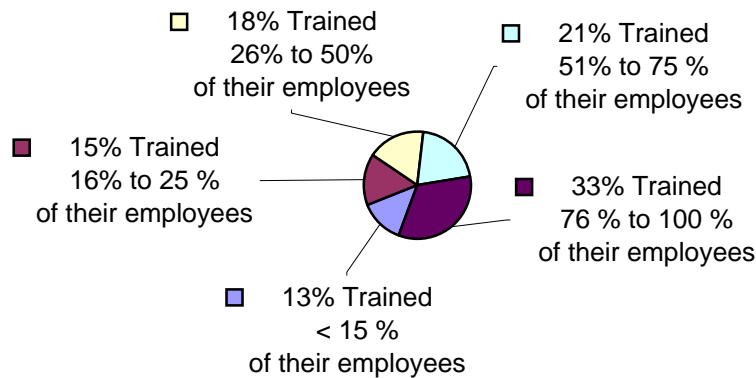
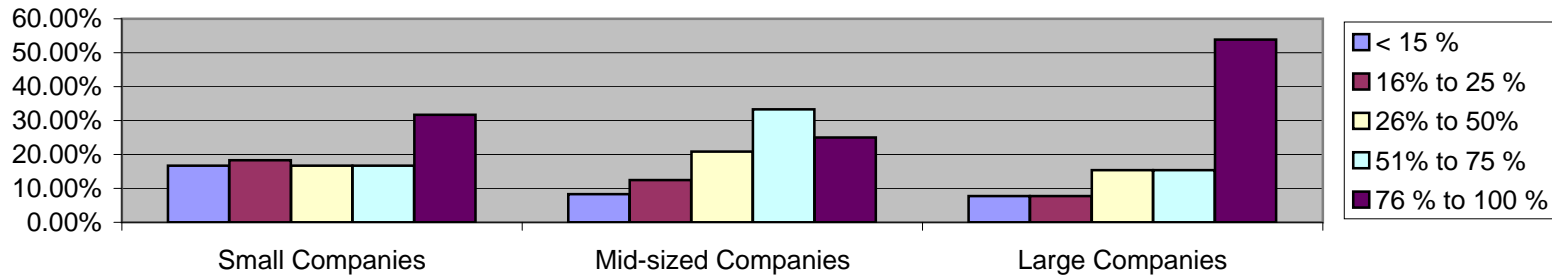
All Companies



21st Century Supply Chain Transformation Survey Data

Approximately what percent of your employees receive training provided by your company each year?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
< 15 %	16.67%	8.33%	7.69%	13.40%
16% to 25 %	18.33%	12.50%	7.69%	15.46%
26% to 50%	16.67%	20.83%	15.38%	17.53%
51% to 75 %	16.67%	33.33%	15.38%	20.62%
76 % to 100 %	31.67%	25.00%	53.85%	32.99%

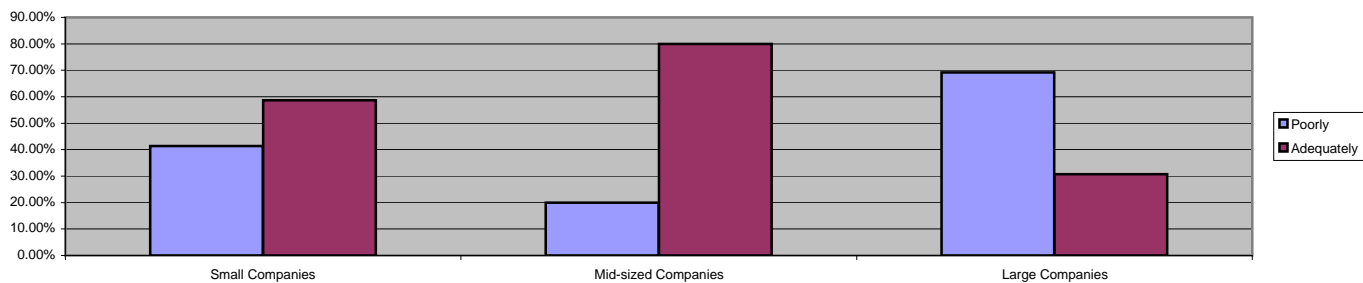
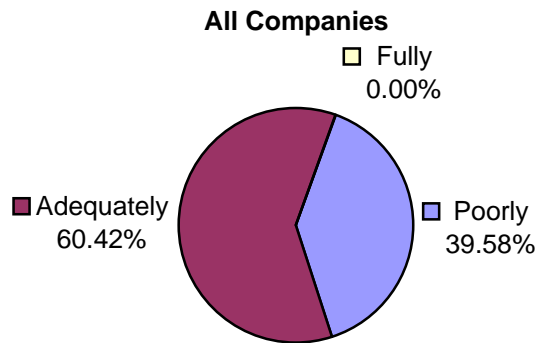
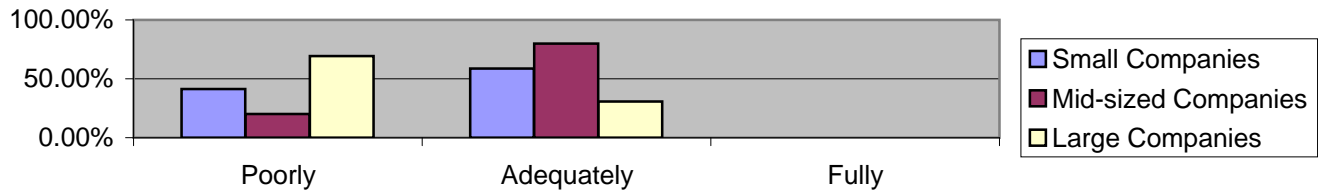
Approximately what percent of your employees receive training provided by your company each year?



21st Century Supply Chain Transformation Survey Data

How prepared for an entry-level job with your company are applicants with a certificate from a community college?				
answer options	Small Companies	Mid-sized Companies	Large Companies	All Companies
Poorly	41.38%	20.00%	69.23%	39.58%
Adequately	58.62%	80.00%	30.77%	60.42%
Fully	0.00%	0.00%	0.00%	0.00%

How prepared for an entry-level job with your company are applicants with a certificate from a community college?



21st Century Supply Chain Transformation Survey Data

Indicate how important training in the following areas is for your company in the next 3 years? (Please be sure to check an answer in each

Small Companies							
answer options	Not important 1	Somewhat important 2	Neutral 3	Important 4	Very important 5	N/A	Rating Average
Logistics and transportation best practices	22	14	9	0	2	7	1.85
Purchasing and procurement best practices	6	18	5	18	6	3	3
Manufacturing best practices	4	4	4	16	24	4	4
Finance and accounting management best practices	4	11	14	16	7	4	3.21
Sales and marketing best practices	5	8	9	21	11	2	3.46
Information technology best practices	4	5	16	12	18	1	3.64
Forecasting and time series analysis	9	10	11	14	5	7	2.92
Engineering modeling and testing	11	7	5	12	13	7	3.19
Design modeling	12	7	7	14	9	6	3.02
Crimping, Cabling, and Harnessing	21	9	6	3	2	15	1.93

Mid-sized Companies							
answer options	Not important 1	Somewhat important 2	Neutral 3	Important 4	Very important 5	N/A	Rating Average
Logistics and transportation best practices	2	8	6	4	1	1	2.71
Purchasing and procurement best practices	2	2	4	8	9	0	3.8
Manufacturing best practices	1	1	1	8	13	1	4.29
Finance and accounting management best practices	1	2	9	6	7	0	3.64
Sales and marketing best practices	1	2	5	8	9	0	3.88
Information technology best practices	0	1	8	10	6	0	3.84
Forecasting and time series analysis	1	2	9	9	4	0	3.52
Engineering modeling and testing	0	0	6	11	6	2	4
Design modeling	0	0	7	11	6	1	3.96
Crimping, Cabling, and Harnessing	8	1	6	1	1	8	2.18



21st Century Supply Chain Transformation Survey Data

Large Companies							
answer options	Not important 1	Somewhat important 2	Neutral 3	Important 4	Very important 5	N/A	Rating Average
Logistics and transportation best practices	0	5	3	4	1	0	3.08
Purchasing and procurement best practices	0	1	0	6	6	0	4.31
Manufacturing best practices	0	0	1	2	9	1	4.67
Finance and accounting management best practices	1	1	0	6	5	0	4
Sales and marketing best practices	0	1	0	5	7	0	4.38
Information technology best practices	0	0	1	4	7	1	4.5
Forecasting and time series analysis	0	1	4	4	4	0	3.85
Engineering modeling and testing	0	0	2	3	6	2	4.36
Design modeling	0	0	3	2	6	2	4.27
Crimping, Cabling, and Harnessing	1	3	3	0	2	4	2.89

All Companies							
answer options	Not important 1	Somewhat important 2	Neutral 3	Important 4	Very important 5	N/A	Rating Average
Logistics and transportation best practices	24	27	18	8	4	8	2.27
Purchasing and procurement best practices	8	21	9	32	21	3	3.41
Manufacturing best practices	5	5	6	26	46	6	4.17
Finance and accounting management best practices	6	14	23	28	19	4	3.44
Sales and marketing best practices	6	11	14	34	27	2	3.71
Information technology best practices	4	6	25	26	31	2	3.8
Forecasting and time series analysis	10	13	24	27	13	7	3.23
Engineering modeling and testing	11	7	13	26	25	11	3.57
Design modeling	12	7	17	27	21	9	3.45
Crimping, Cabling, and Harnessing	30	13	15	4	5	27	2.12



21st Century Supply Chain Transformation Survey Data

Indicate how important training in the following space related areas is for your company in the next 3 years?(Please be sure to check an answer in each row.)

Small Companies							
answer options	Not important 1	Somewhat important 2	Neutral 3	Important 4	Very important 5	N/A	Rating Average
Designing Systems for Space Radiation Environments	18	6	8	4	0	20	1.94
Initial General Space Hardware Training	18	2	10	3	1	22	2.03
Launch Vehicle Environments, Loads and Testing	19	2	8	5	2	20	2.14
Performance, Reliability, Redundancy for Space Products	14	6	8	7	3	18	2.45
Remote sensing for Earth Science Applications	22	3	6	2	0	23	1.64
Space Environment - Implications for Spacecraft Design	19	3	4	7	2	21	2.14
Space Environment and Spacecraft Environmental Hazards	20	3	5	5	2	21	2.03
Space Systems Fundamentals	16	4	7	4	3	22	2.24
Space Vehicle Mechanisms: Elements of Successful Design	17	3	6	4	4	22	2.26
Spacecraft Connector Mate and Demate	22	1	6	1	1	25	1.65
Spacecraft Thermal Control	19	4	4	4	2	23	1.97



21st Century Supply Chain Transformation Survey Data

Mid-sized Companies							
answer options	Not important 1	Somewhat important 2	Neutral 3	Important 4	Very important 5	N/A	Rating Average
Designing Systems for Space Radiation Environments	8	2	2	2	1	9	2.07
Initial General Space Hardware Training	8	0	4	3	1	8	2.31
Launch Vehicle Environments, Loads and Testing	7	0	1	5	3	7	2.81
Performance, Reliability, Redundancy for Space Products	4	1	4	5	3	7	3.12
Remote sensing for Earth Science Applications	9	0	2	2	1	10	2
Space Environment - Implications for Spacecraft Design	8	0	2	4	2	8	2.5
Space Environment and Spacecraft Environmental Hazards	8	0	2	3	2	9	2.4
Space Systems Fundamentals	8	1	2	3	2	8	2.38
Space Vehicle Mechanisms: Elements of Successful Design	7	1	2	6	1	7	2.59
Spacecraft Connector Mate and Demate	6	1	4	3	1	9	2.47
Spacecraft Thermal Control	7	0	4	3	1	9	2.4



21st Century Supply Chain Transformation Survey Data

Large Companies							
answer options	Not important 1	Somewhat important 2	Neutral 3	Important 4	Very important 5	N/A	Rating Average
Designing Systems for Space Radiation Environments	3	1	1	3	2	3	3
Initial General Space Hardware Training	3	1	0	5	1	3	3
Launch Vehicle Environments, Loads and Testing	4	1	0	3	2	2	2.8
Performance, Reliability, Redundancy for Space Products	3	1	0	2	3	4	3.11
Remote sensing for Earth Science Applications	3	2	2	0	2	4	2.56
Space Environment - Implications for Spacecraft Design	3	0	2	2	2	4	3
Space Environment and Spacecraft Environmental Hazards	3	0	1	3	2	4	3.11
Space Systems Fundamentals	3	0	1	3	2	4	3.11
Space Vehicle Mechanisms: Elements of Successful Design	3	0	1	2	3	4	3.22
Spacecraft Connector Mate and Demate	3	0	3	2	2	3	3
Spacecraft Thermal Control	2	0	3	2	2	4	3.22



21st Century Supply Chain Transformation Survey Data

All Companies							
answer options	Not important 1	Somewhat important 2	Neutral 3	Important 4	Very important 5	N/A	Rating Average
Designing Systems for Space Radiation Environments	29	9	11	9	3	32	2.15
Initial General Space Hardware Training	29	3	14	11	3	33	2.27
Launch Vehicle Environments, Loads and Testing	30	3	9	13	7	29	2.42
Performance, Reliability, Redundancy for Space Products	21	8	12	14	9	29	2.72
Remote sensing for Earth Science Applications	34	5	10	4	3	37	1.88
Space Environment - Implications for Spacecraft Design	30	3	8	13	6	33	2.37
Space Environment and Spacecraft Environmental Hazards	31	3	8	11	6	34	2.29
Space Systems Fundamentals	27	5	10	10	7	34	2.41
Space Vehicle Mechanisms: Elements of Successful Design	27	4	9	12	8	33	2.5
Spacecraft Connector Mate and Demate	31	2	13	6	4	37	2.11
Spacecraft Thermal Control	28	4	11	9	5	36	2.28

