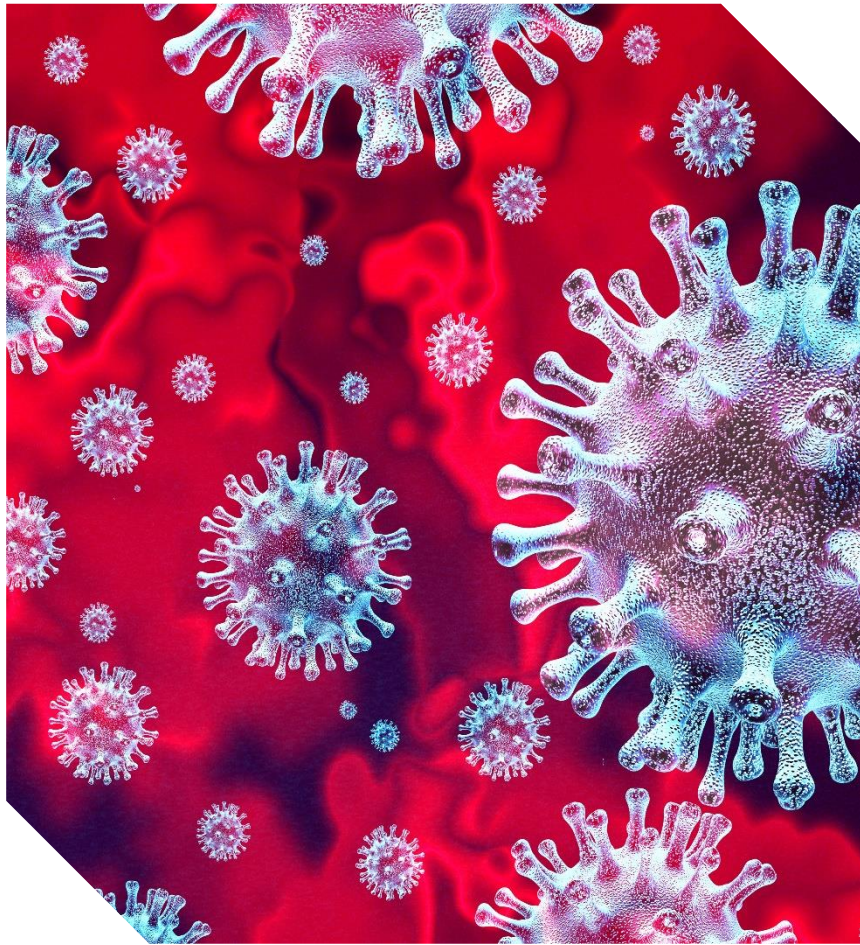




2020 COVID-19 Future
Outlook Study

Executive Summary
April 2020





About the COVID-19 Future Outlook Study

With the COVID-19 pandemic continuing to sweep across the United States, there has been much speculation about its long-term impact on the manufacturing industry and the industry's ability to recover. To gauge the impact COVID-19 will have on the manufacturing industry, SME Media surveyed more than 700 manufacturing professionals to understand how their companies will begin to recover post-COVID-19.

Study Methodology

The sample selection for the 2020 COVID-19 Future Outlook Study was taken from the SME database, selected on an nth name basis. Respondents from the United States were chosen; any respondents who were retired or primarily students were removed. Respondents were also required to have an email address on file with SME. No other sampling criteria was used. Data was cleaned to ensure accuracy.

Tabulations were generated using a statistical package, SPSS. Questions receiving fewer than 30 responses were not included in the report due to low sample size. Sample sizes of 30 respondents or greater are generally considered to be statistically reliable, meaning if the study were to be run again with a different random sample, results would not differ significantly.

Throughout the report, results of statistical significance are presented to illustrate data that is significantly significant at a 95 percent confidence level. This confidence level means there is reasonable support that the results are actually different and not different due to error or variance in the data. Testing results illustrate data points that are different enough that they fall outside the margin of error. That is, if the study were to be conducted multiple times with the same population, these data points would still be statistically different 95 percent of the time.



Manufacturing During COVID-19

Almost all respondents stated that their company was still operating in some capacity, with half of respondents stating that their companies were still fully active, while another two-in-five indicated that they were operating at partial capacity. Only eight percent of respondents stated that their company was completely shut down (or not at all operational).

Respondents in the automotive industry were significantly more likely than the study average to be completely shut down (or not at all operational), while those in the education/academic industry were significantly more likely than the study average to be operating at partial capacity. Smaller companies are most likely to still be fully functional. Companies with 26-100 employees are 50 percent more likely to be fully operational than companies with more than 2,500 employees.

Trade publications, industry associations, broadcast/cable television and online were the most trusted sources for COVID-19 manufacturing news. Slightly fewer than half of respondents indicated that trade publications and industry associations are their most trusted media sources for COVID-19 manufacturing news (47 and 45 percent, respectively). Respondents in the defense industry indicated that trade publications are their trusted source significantly more than other industries, while the education/academic industry utilizes industry associations significantly more than other industries. One-third of respondents indicated they use government sources for trusted manufacturing industry COVID-19 information, while fewer than one-in-five use social media, satellite/FM/AM radio, newspapers (national or local) and magazines.

Manufacturing After COVID-19

The manufacturing industry remains highly optimistic. Over two-thirds of respondents (68 percent) stating they are very/somewhat optimistic the industry will recover to its level of production pre-COVID-19 by the end of 2020, with one-third being very optimistic. Only one-quarter of respondents specified they are somewhat/very unoptimistic that the manufacturing industry will recover by the end of 2020.

Respondents also stated the COVID-19 pandemic will shift how their companies operate in the future. For example, half of respondents (52 percent) indicated that their companies will be allowing some employees to regularly work remotely. Companies with 1,000 or more employees are significantly more likely to allow employees to work remotely in the future, while companies with 100 employees or fewer are not. Another example is that over half of respondents (57 percent) indicated their company will be putting in place a disaster-readiness plan for catastrophic circumstances.

Two-in-five respondents (39 percent) indicated that their companies will initiate cross-training to help workers take on new job roles. This is especially true in the aerospace and defense industries, which are 16 percent and 25 percent, respectively, higher than the study average to do so and companies that have 26 to 100 employees are significantly higher than the study average to do so.

COVID-19 has introduced much ambiguity to many companies in terms of their focus, post pandemic. Almost one-third (31 percent) of respondents indicated they don't know or are unsure of what their company focus will be post-COVID-19, followed by expanding (20 percent), filling open positions (13 percent), and training employees (9 percent). Companies with 26 to 100 employees are significantly more likely to focus on expanding than the study average, while companies with 101 to 250 employees are significantly more likely to focus on filling open positions and training employees.



CHART 1: Company Primary Focus During Recovery Post COVID-19

	25 employees or less	26 to 100 employees	101 to 250 employees	251 to 500 employees	501 to 1,000 employees	1,001 to 2,500 employees	More than 2,500 employees	Study Average
Don't know/Unsure	28%	31%	29%	24%	37%	31%	33%	30%
Expanding	24%	28%	15%	15%	16%	22%	14%	21%
Filling open position	12%	12%	22%	15%	21%	6%	13%	14%
Training employees	6%	7%	16%	13%	3%	16%	12%	9%
Contracting	13%	8%	1%	11%	8%	0%	7%	8%
Retooling	4%	3%	4%	11%	3%	3%	5%	5%

Respondents indicated that during their recovery after COVID-19, their companies will investigate current procedures and look for ways to expand their current product offerings and/or diversifying their product portfolios. Half of respondents indicated that during the recovery phase of COVID-19, they expect their companies to adjust operational procedures, except for companies with 25 employees or fewer. These companies are significantly less likely than the study average to do so. Instead, companies with 25 employees or fewer are significantly more likely to investigate new industries for their current products and diversify their product portfolio than larger companies. Larger companies, with more than 1,000 employees, are significantly less likely to investigate new industries for their products. Fewer than one-in-ten respondents (6 percent) indicated that their company was planning to close a plant/site/location post COVID-19.

Technology Investments After COVID-19

Three-in-five respondents (62 percent) indicated that their companies plan on investing in at least one technology post-COVID-19, with most companies planning on investing in two technologies.

CHART 2: Planned Technology Investment by Industry

	Aircraft/Aerospace	Automotive	Consumer Products	Defense	Electronics/Computers	Industrial and Commercial Machinery	Medical/Surgical/Dental	Education/Academic	Study Average
5G Network & Infrastructure	12%	8%	8%	20%	33%	7%	5%	20%	12%
AI & Machine Learning	18%	14%	16%	17%	17%	11%	8%	16%	13%
AR/VR	7%	8%	0%	13%	10%	3%	5%	16%	7%
Digital Security	16%	11%	11%	40%	20%	16%	16%	37%	19%
Robotics	29%	35%	32%	27%	23%	24%	18%	22%	25%
IIOT Solutions	9%	10%	8%	7%	23%	10%	3%	12%	9%
Video & Cloud Services	16%	17%	18%	13%	10%	23%	18%	53%	23%
Wireless Connectivity	15%	19%	21%	20%	17%	16%	21%	41%	21%
Blockchain	3%	0%	0%	3%	3%	1%	0%	6%	2%
Distributed Manufacturing	4%	8%	21%	20%	27%	13%	3%	12%	10%
Additive Manufacturing/3D Printing	36%	25%	21%	23%	33%	17%	21%	35%	25%
Other	9%	8%	13%	3%	13%	6%	3%	8%	8%
Don't know/Unsure	3%	2%	5%	3%	10%	4%	0%	2%	3%
None of the above	32%	32%	21%	30%	17%	37%	45%	18%	31%

Respondents from the aircraft/aerospace industry indicated their companies are significantly more likely than the study average to invest in additive manufacturing/3D printing post-COVID-19, while companies in the industrial and commercial machinery industry are significantly less likely to do the same. Digital security is an area where companies in the defense and education/academic industries are significantly more likely

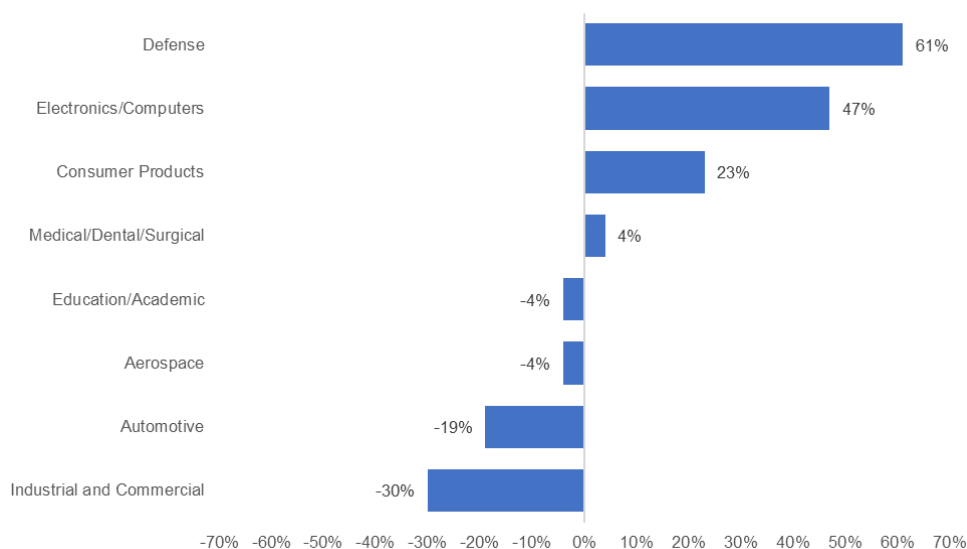


than the study average to invest, 71 percent and 64 percent more, respectively. Companies in the electronics/computers industry indicated they are over 90 percent likely to invest in 5G network and infrastructure post-COVID-19. Companies with 25 employees or fewer are significantly less likely to invest in robotics than the study average, while companies with more than 2,500 employees are significantly more likely to invest in digital security and IIoT solutions.

Rethinking Production & Supply Chains

Respondents also indicated that post-COVID-19, many companies will rethink their production and supply chain operations. One-quarter of respondents indicated that their company plans to reshore production to the U.S., with only five percent of respondents indicating that their company plans to outsource more production. In particular, the defense industry is more than 60 percent more likely to reshore production to the U.S. post-COVID-19, significantly higher than the study average.

GRAPH 1: Industries More/Less Likely to Reshore Production to U.S.

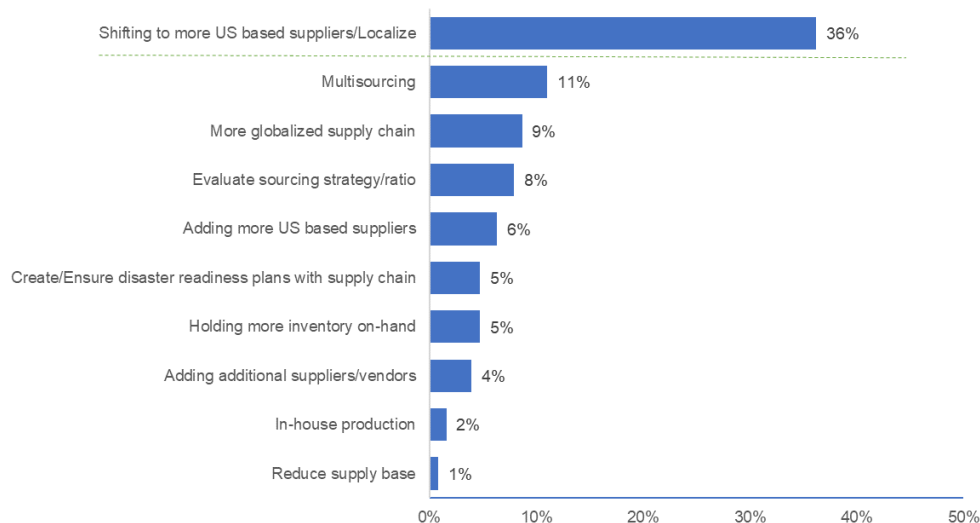


Some industries, such as industrial/commercial and automotive are much less likely than the study average to reshore production to the U.S., while some industries like medical/dental/surgical, education/academic and aerospace are likely to only make small changes to their production.

About half of respondents indicated that they are unsure if their company will adjust their supply chain sourcing. However, one-quarter of respondents indicated their company is already planning to adjust their supply chain sourcing post pandemic. Similar to the production side of the house, the defense industry is significantly more likely than the study average to adjust supply chain sourcing. Unlike the defense industry, the aerospace industry is significantly less likely to adjust its supply chain sourcing post pandemic.



GRAPH 2: Primary Ways Companies Will Be Adjusting Their Supply Chain



Among respondents that indicated their companies will be adjusting how they strategically source for their supply chain, one-third said that their company will be shifting to more U.S.-based suppliers/localizing their supply chain. Respondents from the electronics/computers industry indicated that they are 110 percent more likely to investigate multi-sourcing than the study average, while the government/military is almost 150 percent more likely than the average to hold more inventory on hand than before the COVID-19 pandemic. The industrial and commercial industry is 171 percent more likely to add additional suppliers/vendors than the average post-COVID-19 pandemic and respondents from the petroleum industry are 150 percent more likely than the study average to create/ensure a disaster readiness plan with their supply chain.



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ABOUT SME MEDIA

SME Media is a leading source for news and in-depth technical information about advancing manufacturing in North America. Our content is delivered to more than 400,000 manufacturing professionals through a fully integrated media portfolio, which makes information available in print, online, through email, mobile apps and social media networks, as well as webinars and podcasts. We also provide special reports through lead-capturing downloads. Our customized solutions allow you to reach exclusive, targeted prospects derived from SME database members, including 379,000+ email addresses and 1,432,000+ direct mail addresses.

ABOUT SME

SME connects manufacturing professionals, academia and communities, sharing knowledge and resources to build inspired, educated and prosperous manufacturers and enterprises. With more than 85 years of experience and expertise in events, media, membership, training and development, and also through the SME Education Foundation, SME is committed to promoting manufacturing technology, developing a skilled workforce and attracting future generations to advance manufacturing.

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