



BUILD ELECTRONICS BETTER

THE IMPACT OF THE CORONAVIRUS (COVID-19) EPIDEMIC ON ELECTRONICS MANUFACTURERS: MARCH UPDATE



Results of an IPC Fast Facts Survey

March 2020

EXECUTIVE SUMMARY

In February 2020, IPC [reported](#) how electronics manufacturers and suppliers are being impacted by the recent outbreak of a novel coronavirus, named COVID-19 by the World Health Organization (WHO), and how these companies are responding.

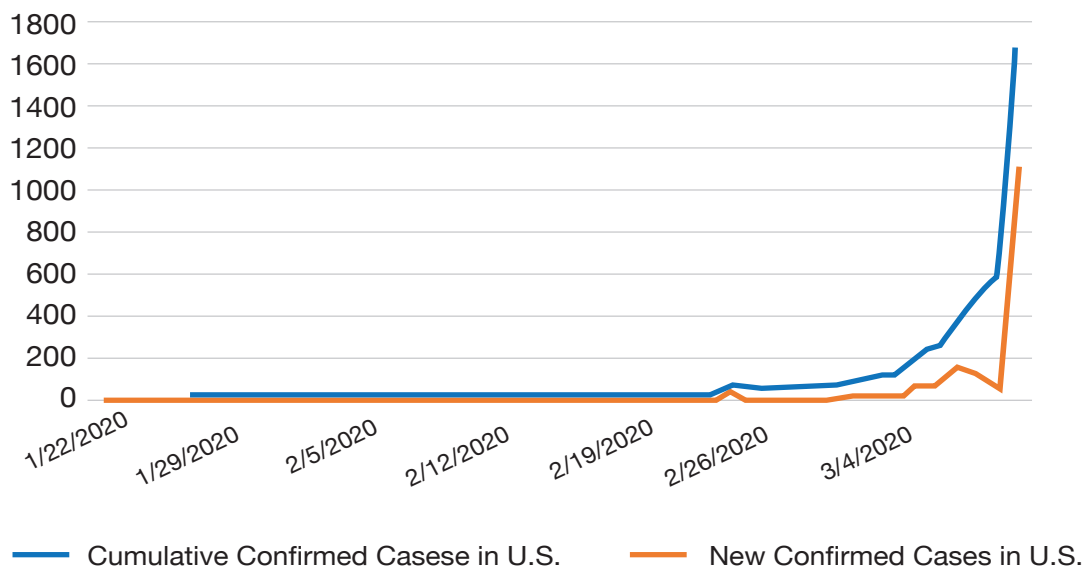
IPC surveyed its members on this issue for a second time between March 3rd and March 5th, 2020.

- **Nearly 40 percent of respondents report they are feeling worse about the impact of COVID-19 on their businesses than they were last month.** Overall, the vast majority (86 percent) of electronics manufacturers and suppliers are concerned about the impacts, which is comparable to the results in IPC's February 2020 report.
- **Roughly 69 percent of respondents reported being told by their suppliers that there will be delays in shipments due to COVID-19, and some delays are growing.** Companies in this situation are being told to expect delays of three weeks, on average, a figure that is comparable to last month. However, this month, 15 percent of respondents reported they are being quoted delays of six weeks or longer, while last month no companies were being quoted delays of six weeks or longer.
- **Electronics manufacturers expect delays to be longer than what their suppliers are currently quoting.** Similar to last month, executives expect shipment delays to be at around five weeks on average.
- **Business Expected to be Back to Normal by July 2020, but Uncertainty Remains.** The majority of electronics manufacturers and suppliers expect business operations to be "back to normal" by July 2020, and 75 percent of respondents expect business to be back to normal by October 2020. Roughly 25 percent of respondents say it is too early to tell when business will be back to normal.
- **Consumer Electronics Likely to be the Most Impacted Segment of Electronics Manufacturing.** Electronics manufacturers and suppliers believe consumer electronics are likely to be the most impacted sector, followed by industrial and automotive.
- **Electronics Manufacturers and Suppliers are Working to Identify Alternative Sources and Cutting Back Business Travel.** Most respondents report they are identifying alternative sources of inputs (55 percent) and cutting back business travel (54 percent). Nearly 30 percent of firms are encouraging teleworking where possible.
- **Sales and Revenue Likely to Decline in 2020.** Roughly 56 percent of respondents expect sales to decline in the first quarter, 63 percent expect sales to decline in the second quarter, and 62 percent expect sales to be down for calendar year 2020 because of the impact of coronavirus.
- **Capital Expenditures (Capex) Likely to Decline Marginally in 2020.** Roughly 26 percent of respondents expect to cut capex in 2020 because of the impact from coronavirus, while 63 percent report capital investment will remain the same.

Introduction

As of March 10, 2020, there have been 113,702 confirmed cases of COVID-19 worldwide, with 4,012 confirmed deaths. The number of new cases being reported within China, where the virus first appeared, is declining sharply, while the number of new cases outside of China continues to climb.¹ In the United States, where tests are now being administered more frequently, the number of confirmed cases is rising exponentially.

Figure 1: Confirmed Cases in the United States Are Rising Quickly



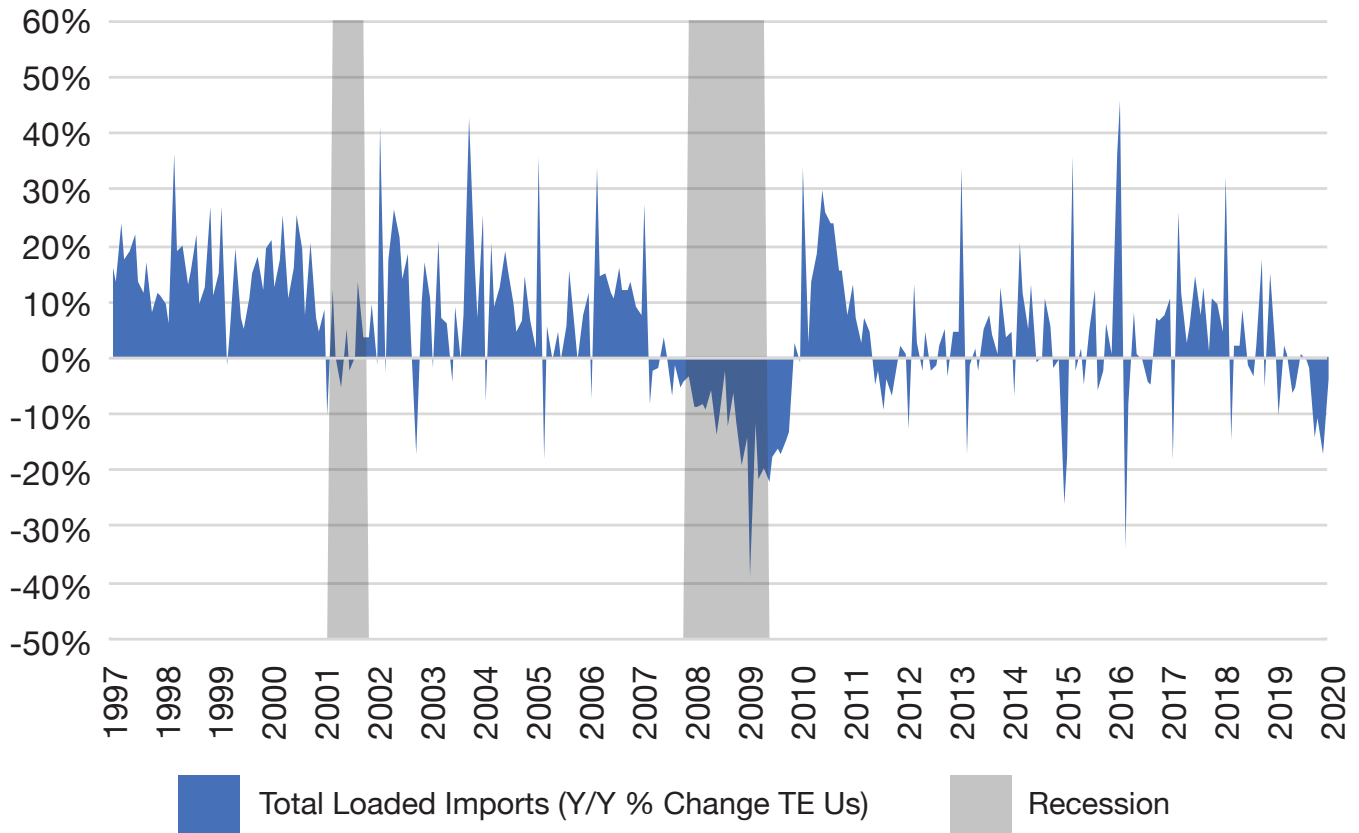
Source: WHO, IPC estimates

At the onset of the coronavirus, manufacturing production in China was curtailed for several weeks as travel restrictions within China were implemented and factories were shuttered. China’s Manufacturing Purchasing Manager’s Index dropped to its lowest level since the index was started in 2004.

Those early production delays are just now showing up in U.S. statistics. It typically takes four to six weeks on the ocean for container shipments to move from China to the United States. The following chart highlights the year-over-year import of loaded inbound containers into the ports of Los Angeles and Long Beach. February 2020 imports were down just over 20 percent compared to last year. Recent months have also shown significant year-over-year weakness, suggesting some of this drop-off might also be driven by weakening economic fundamentals that were developing in advance of the full impact of the coronavirus outbreak.

¹ For the most current update and advice to the public, please see the WHO’s daily Coronavirus disease 2019 (COVID-19) Situation Report at <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>.

Figure 2: Container Imports Down Significantly through February 2020



Source: IPC estimates

In China, factories are resuming production and working to return to 100 percent capacity by the end of March. While some factories in Hubei province won't resume normal operations until the end of March, most factories throughout China appear to be operating at 80 percent or greater capacity.² Apple recently reported all but four of its Apple stores in mainland China have reopened after being closed as part of the wide coronavirus shutdown.³

Transportation networks are also working to return to 100 percent capacity. Alphaliner estimates nearly 9 percent of global container shipping capacity was inactive in February.⁴ By the beginning of March, port calls in China were returning to normal.⁵ CMA CGM's CEO said its fleet would be operating at full capacity by mid-March.⁶

² <https://www.wsj.com/articles/coronavirus-closed-factories-in-china-face-delays-in-restarting-as-authorities-flip-flop-11583923466>

³ <https://www.cnbc.com/2020/03/10/coronavirus-apple-china-stores-all-open-apart-from-four.html>

⁴ <https://www.supplychaindive.com/news/coronavirus-renders-nearly-9-of-container-shipping-fleets-inactive/573200/>

⁵ <https://www.supplychaindive.com/news/chinese-port-calls-trend-toward-normalcy/573491/>

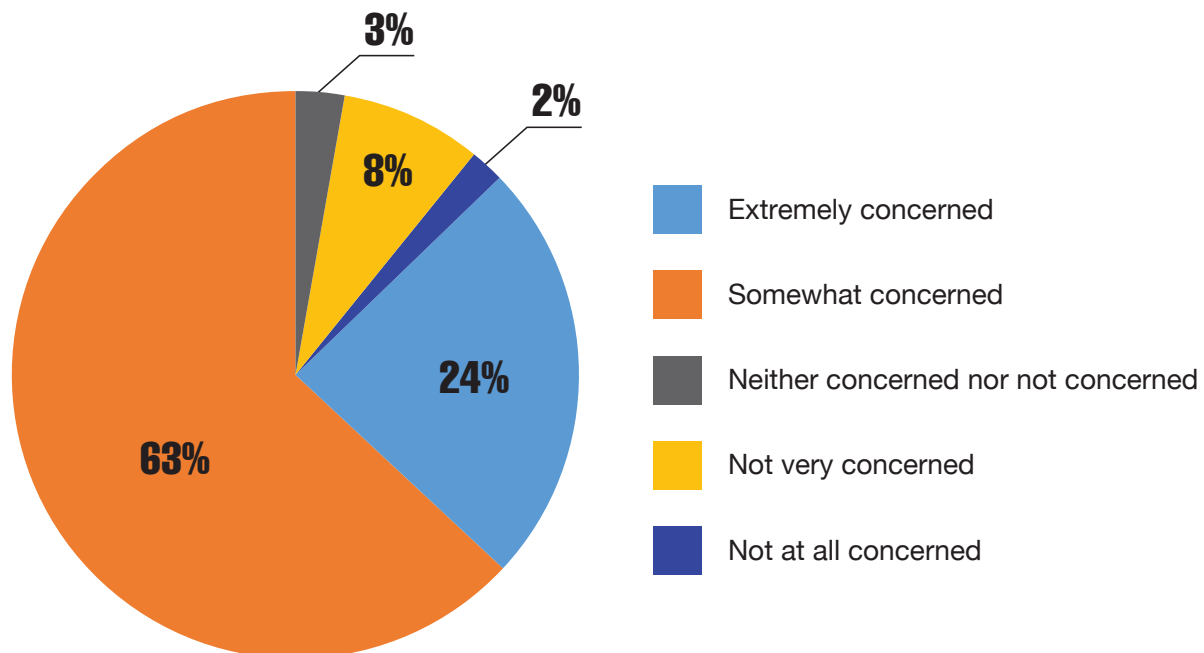
⁶ <https://www.supplychaindive.com/news/cma-cgm-will-return-to-normal-china-operations-in-mid-march/573726/>

As we noted in our first report on the impact of the coronavirus, transportation capacity was a key concern for industry. While container shipping capacity is resuming, air cargo capacity remains restricted. Passenger flights carry some 50 percent of freight. Scoot and Cathay Airlines both announced they will be flying empty passenger flights for cargo in and out of several mainland China cities including Nanjing, Guangzhou, and Shanghai.⁷ Prices for air cargo have escalated, nevertheless. TAC Index data shows China-U.S. cargo rates have risen 27 percent over the last two weeks.⁸

Electronics Manufacturers and Suppliers Remain Very Concerned about the Impact COVID-19 Will Have on Their Businesses

The vast majority of electronics manufacturers who responded to IPC’s second-round survey reported they are concerned about the impacts COVID-19 will have on their businesses. Some 24 percent of respondents reported they are “extremely” concerned, which is down from 30 percent of survey respondents in February 2020. Roughly 63 percent report they are “somewhat” concerned, which has increased from 54 percent. Overall, 87 percent of respondents report they are concerned, which is in line with results from last month.

Figure 3: Electronics Manufacturers and Suppliers are Concerned about the Impact of COVID-19



Q: How concerned are you about the Coronavirus impacting your business)

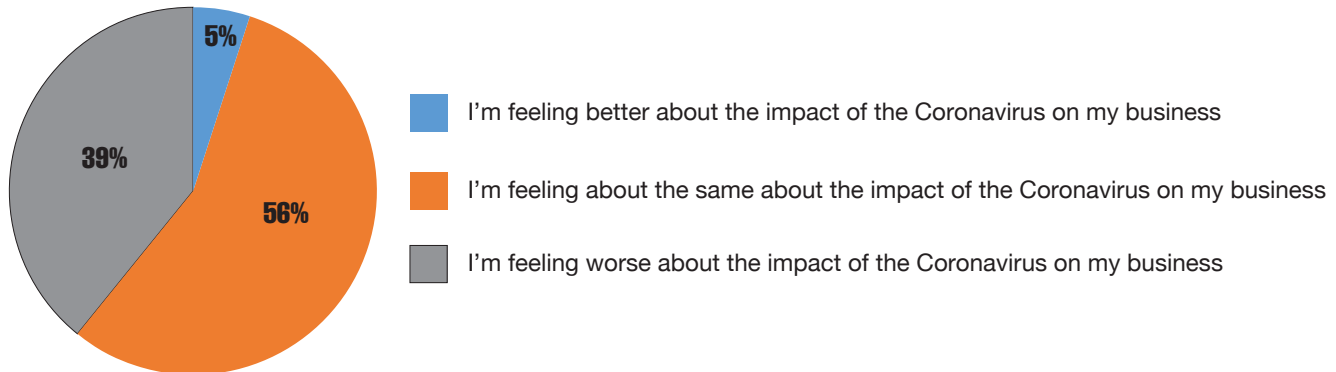
⁷ <https://www.forbes.com/sites/willhorton1/2020/03/10/why-airplanes-flying-without-any-passengers-are-an-early-sign-of-coronavirus-recovery/#4d6d8d767e99>

⁸ <https://www.reuters.com/article/us-health-coronavirus-airlines-freight/air-freight-rates-skyrocket-amid-passenger-flight-cuts-chinese-factory-restarts-idUSKBN20Y062>

Many Electronics Manufacturers and Suppliers are Feeling Worse about the Impacts on their Businesses

While the majority of respondents are feeling about the same as they did last month, nearly 40 percent are feeling worse about the impacts of the coronavirus on their businesses.

Figure 4: Businesses are Feeling Worse about the Impact of COVID-19



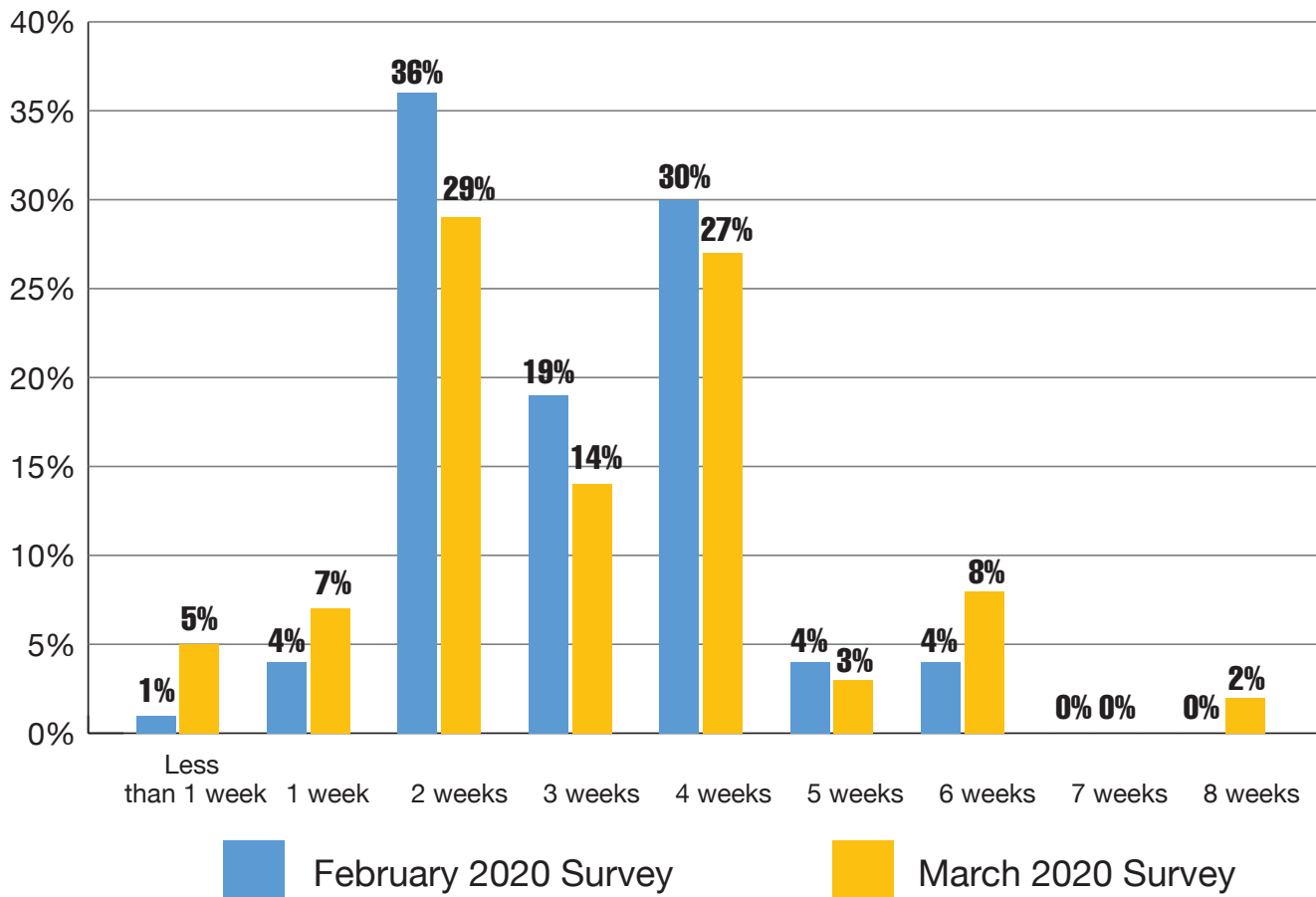
Q: Compared to how you felt last month, how are you feeling about the impact of the Coronavirus on your business?

Electronics Manufacturers and Suppliers are Being Told There Will Be Shipment Delays

Similar to last month, companies replying to IPC's second-round survey reported they are expecting delays in shipments of materials and components due to COVID-19. Some 69 percent of respondents reported being told by their suppliers to expect longer lead times. Twenty-two percent of companies report their suppliers have not projected shipment delays, and 9 percent weren't sure of the status of shipments.

At the time of the second survey, companies being quoted longer lead times were being quoted a delay of 3.4 weeks, on average. This is roughly in line with the delays anticipated in the February survey. However, this month, 15 percent of respondents are reporting they are being quoted delays of six weeks or longer, while last month no companies were reporting delays longer than six weeks. All told, 41 percent of companies were being told to expect a two-week delay or less and 81 percent of respondents were told to expect shipment delays of four weeks or less.

Figure 5: On Average Companies are Being Told to Expect a Three-Week Delay

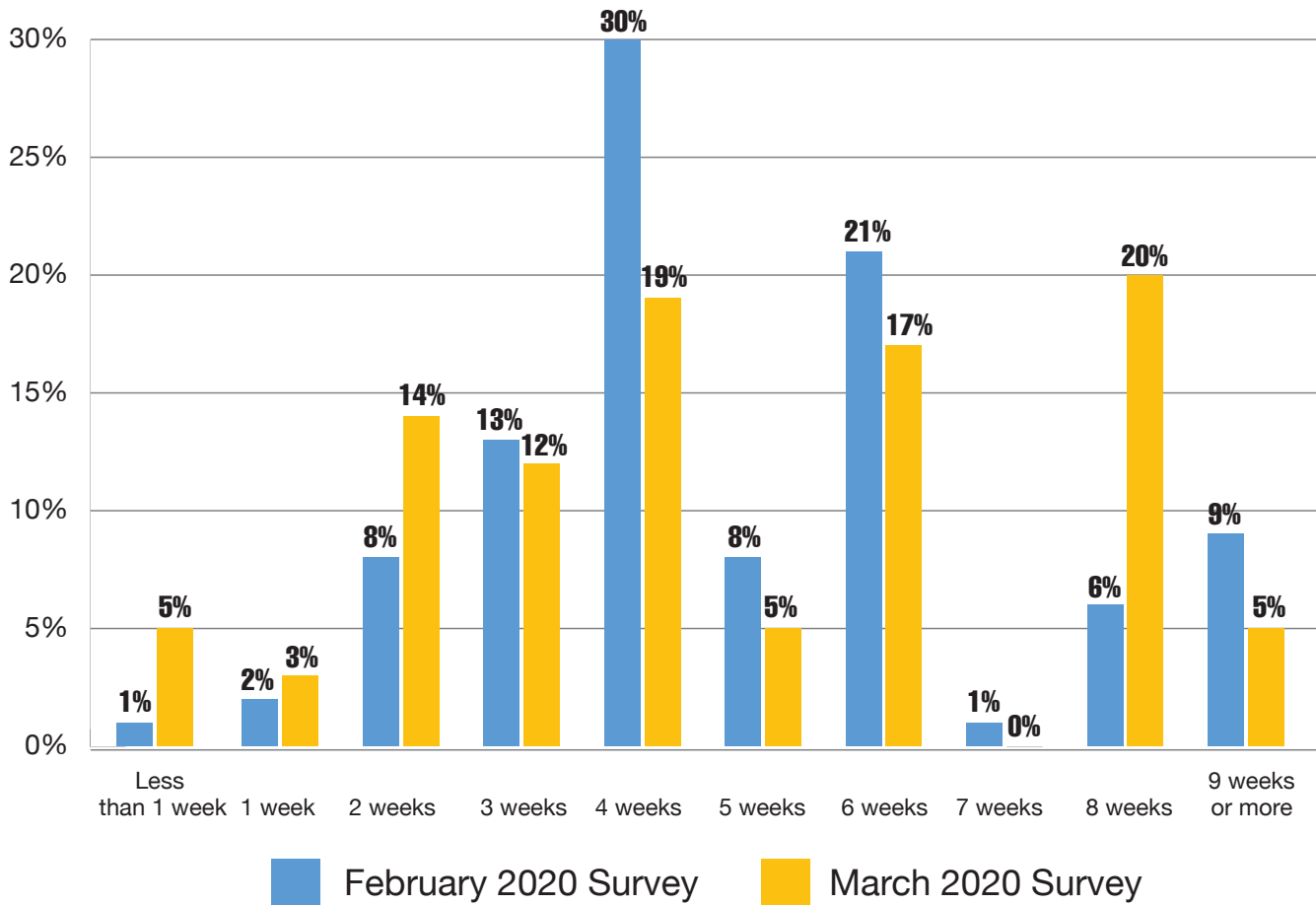


Q: What additional delay are you being quoted by your suppliers as a result of the coronavirus (COVID-19) epidemic?

Electronics Manufacturers Continue to Expect Actual Delays to Be Longer

Companies were also asked what they believed the actual delay in shipments from their suppliers would be. On average, respondents expected shipment delays to be just under five weeks, comparable to last month’s survey results. Some 22 percent of respondents expect the delays to be two weeks or less (up from 11 percent last month). Just over half (53 percent) expected shipment delays to be four weeks or less, in line with last month. Forty-two percent of respondents expected shipment delays to be six weeks or longer (up from 37 percent last month).

Figure 6: On Average, Companies Expect Just Under a Five-Week Delay in Shipments

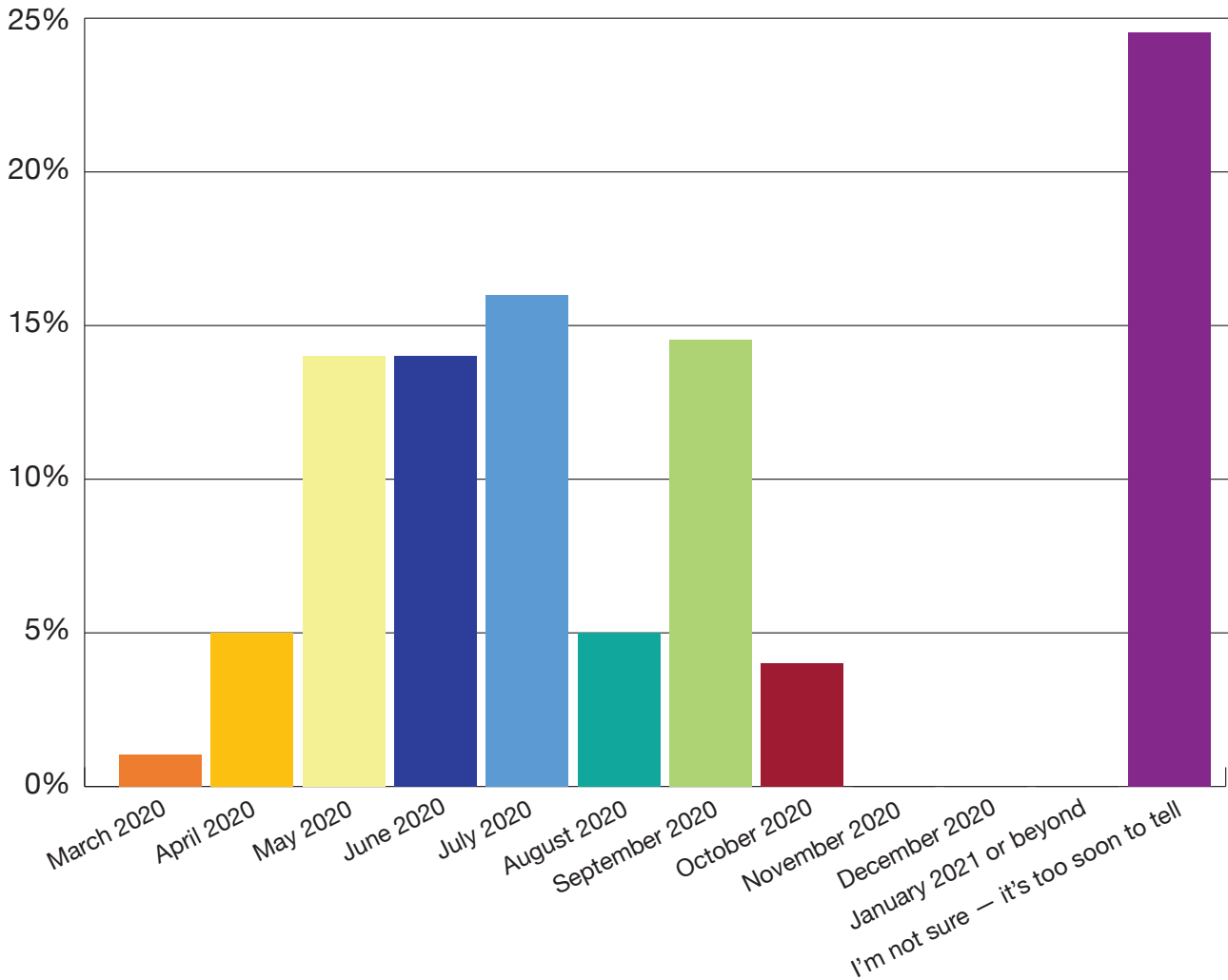


Q: In actuality, what do you believe the additional delay will be from coronavirus (COVID-19)?

Business Expected to be Back to Normal by July 2020, but Uncertainty Remains

The majority of electronics manufacturers and suppliers expect business operations to be “back to normal” by July 2020, and 75 percent expect business to be back to normal by October 2020. But there remains significant uncertainty, with 25 percent of respondents reporting it is too early to tell when business will be back to normal.

Figure 7: Majority of Respondents Expect Business to be Back to Normal by Summer 2020



Q: Given the current state of the Coronavirus outbreak, when do you expect business operations to be “back to normal”?

Consumer Electronics Considered to be the Most Impacted Segment of Electronics Manufacturing

Electronics manufacturers and suppliers believe consumer electronics are likely to be the most impacted industry, followed by industrial and automotive electronics. These sectors are likely to be affected more than other industries because of their stronger reliance on manufacturing capacity in China and supply chains that rely more heavily on China.

Medical electronics, defense/government electronics, and aerospace electronics are thought to be the least impacted sectors. These industries tend to rely less on Chinese suppliers and tend to have longer buying and production cycles, which make them less susceptible to supply and demand shifts.

The Coronavirus Outbreak Will Likely Impact New Product Introductions

Roughly 22 percent of electronics manufacturers and suppliers in this survey report that the coronavirus outbreak will result in fewer new product introductions (NPIs) in 2020.

In a normal year, original equipment manufacturers (OEMs) would be readying production of new products to be released in the coming year. This is especially true for consumer electronics manufacturers, which tend to follow six- to 12-month cycles and aim to release NPIs in the fall months just ahead of the holiday shopping season.

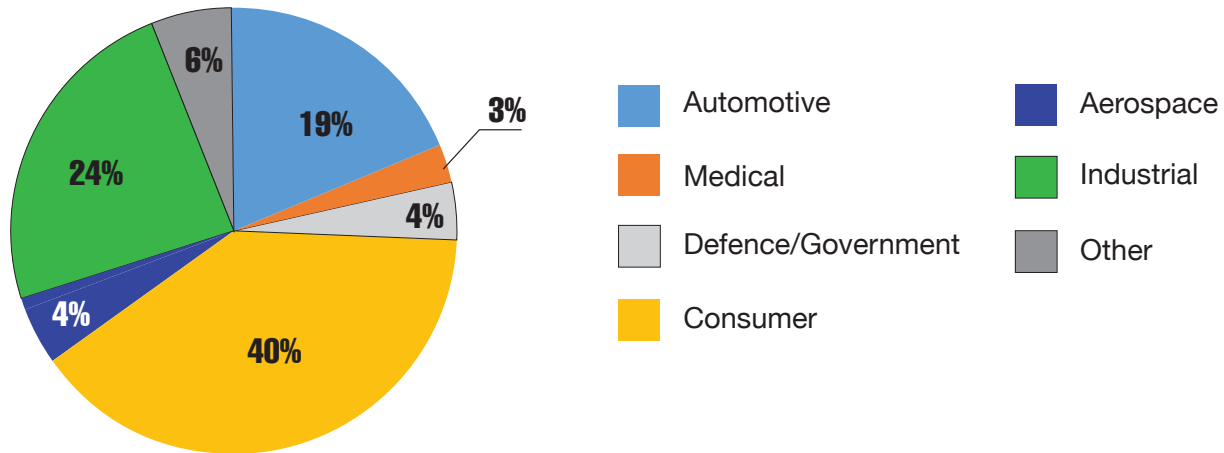
Electronics manufacturers in the OEM supply chain would generally prepare for NPIs by traveling several times to visit input suppliers in the lead-up to full-scale production. Each of these trips would last up to a few weeks and would involve all aspects of NPIs, from refining and finalizing ideas to preparing manufacturing facilities for full-scale production.

Corporate travel bans have cancelled these trips and left engineers rushing to develop alternative approaches. Some are turning to U.S. firms to help. Because build schedules are already extremely tight, delays of any kind could delay NPIs. In short, the coronavirus outbreak is causing delays that could affect planned NPIs.

Some companies are already reporting such impacts. Arlo Technologies, a maker of wireless security cameras, noted in its fourth-quarter 2019 financial results conference call that “coronavirus is impacting our business on the supply side as our vendors do not have sufficient quantities of the required components to fulfill our demand ... Additionally, in the second quarter, we have new product introductions planned that we believe will be impacted by the component shortages, as well as delayed delivery of some of the manufacturing equipment from China.” Logitech noted in a statement that “due to the availability of labor and varying timing of component supply recovery, there is potential for delays to new product introductions.”

Because of the long lead times involved, timing constraints and travel bans that hinder collaboration between designers, engineers, and manufacturing facilities could also impact NPIs in 2021, even if other impacts from the coronavirus outbreak are reversed quickly.

Figure 8: Consumer Electronics Considered to be the Most Impacted Segment of Electronics Manufacturing



Q: Based upon what you know about the electronics manufacturing supply chain, which of these industries will be most impacted by the Coronavirus?

Electronics Manufacturers and Suppliers are Working to Identify Alternative Sources of Inputs and Cutting Back Business Travel

Companies report they are undertaking several activities to address the impact of COVID-19. Most respondents report they are identifying alternative sources of inputs (55 percent) and cutting back business travel (54 percent). Nearly 30 percent of firms are also encouraging teleworking where possible.

A smaller number of firms reported that they are cutting back operations as a result of COVID-19. Some 18 percent are delaying business investment, 14 percent are cutting back production, and 13 percent are cutting back on hours worked. While only two companies reported taking fewer orders as a result of the virus outbreak, there are indications that supply disruptions are translating into demand disruptions.

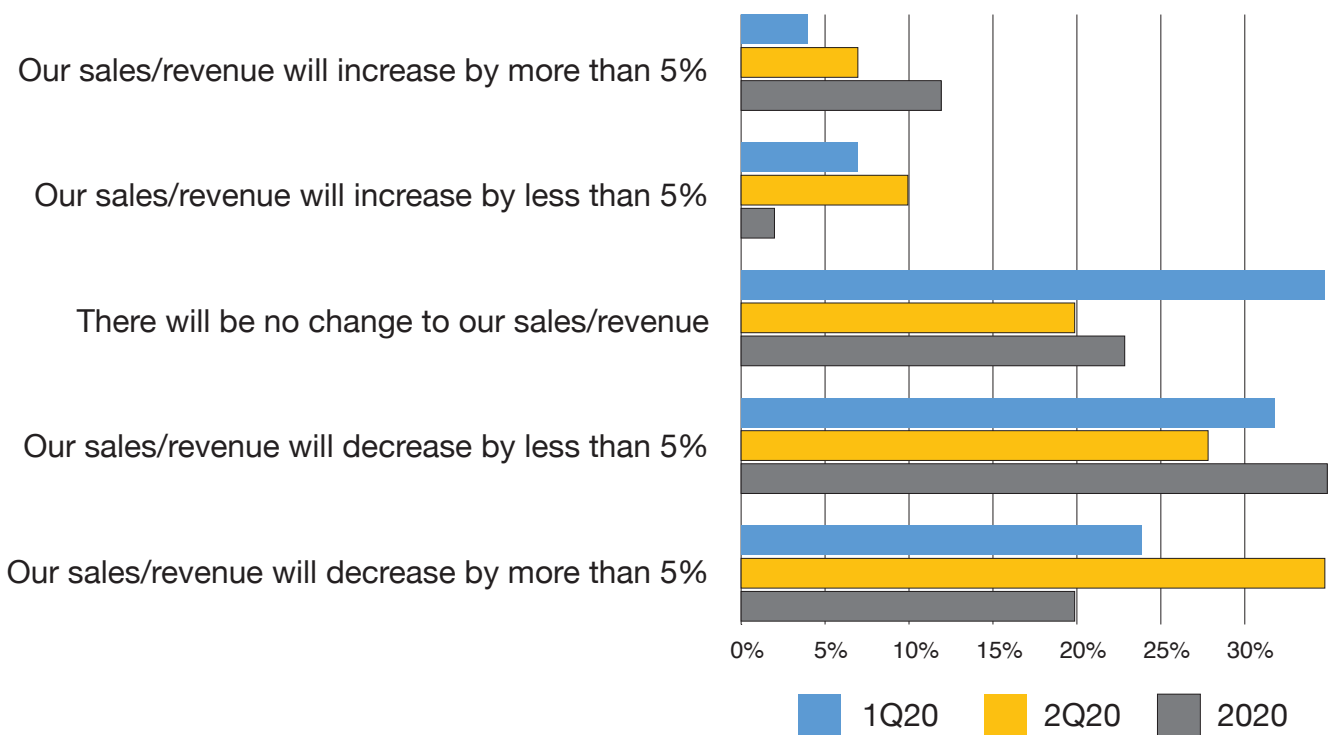
Table 1: Companies are Addressing the Impact of Coronavirus by Seeking Alternative Sources of Inputs and Cutting Business Travel

Action	Portion of respondents
We are identifying alternative sourcing	55%
We are cutting back on business travel	54%
We are encouraging teleworking where possible	29%
We are delaying business investment	18%
We are cutting back production	14%
We are cutting back on hours worked	13%
We are taking fewer orders	3%

Sales and Revenue Likely to Decline in 2020

Despite few firms currently reporting that they are taking fewer orders due to the impact from coronavirus, the majority of respondents expect sales to decline in the first and second quarters of 2020 and for the entire calendar year 2020. Roughly 56 percent of respondents expect sales to decline in the first quarter, 63 percent expect sales to decline in the second quarter, and 62 percent expect sales to be down for calendar year 2020 because of the impact of the coronavirus.

Figure 9: Sales and Revenue Expected to Decline in 2020



Q: How will the Coronavirus impact your sales/revenue in Q1 2020?

Q: How will the Coronavirus impact your sales/revenue in Q2 2020?

Q: How will the Coronavirus impact your sales/revenue in calendar year 2020?

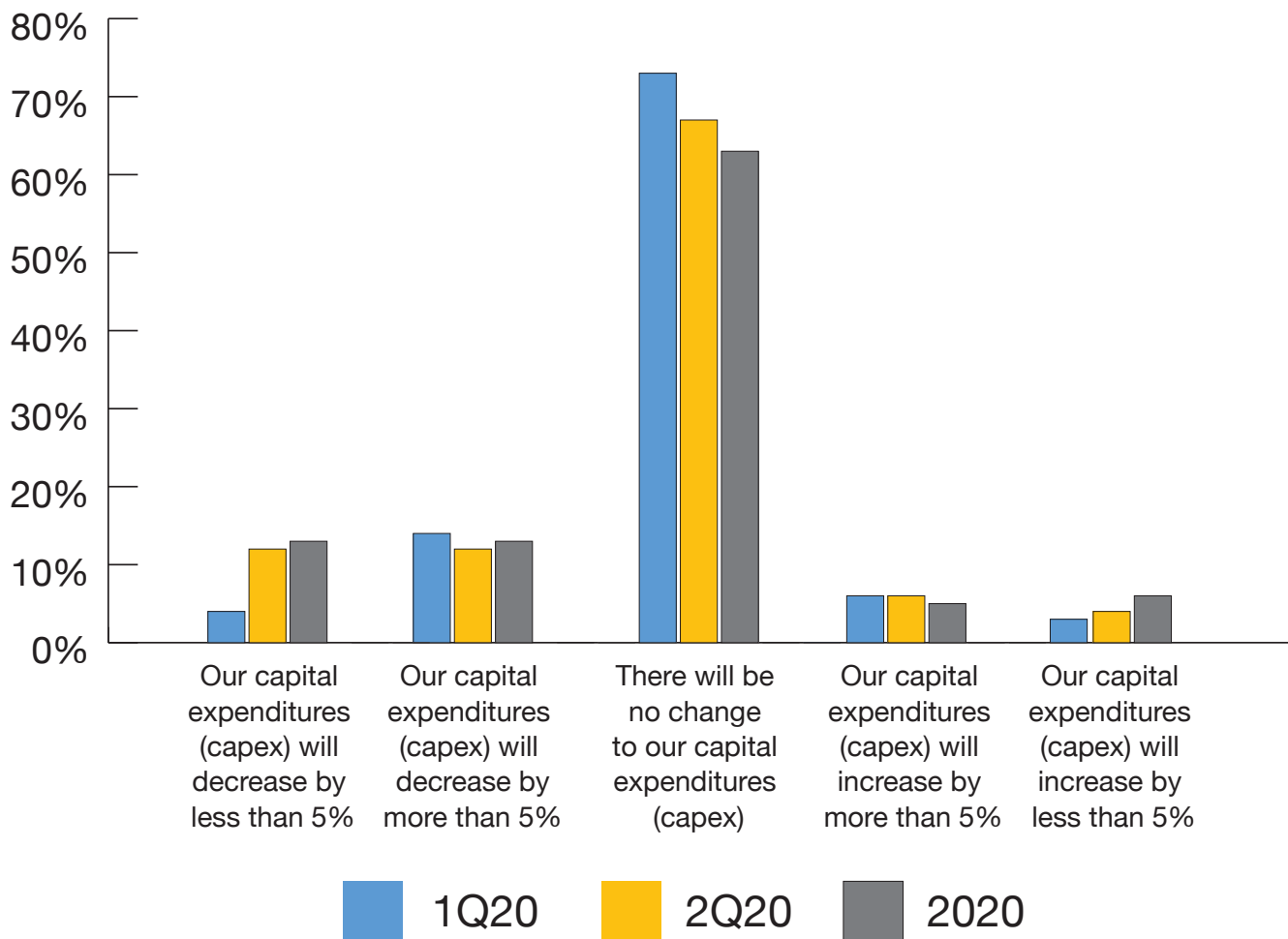
Table 2: Sales and Revenue Expected to Decline in 2020

Sales and Revenue Impact	1Q20	2Q20	2020
Our sales/revenue will increase by more than 5%	4%	7%	12%
Our sales/revenue will increase by less than 5%	7%	10%	2%
There will be no change to our sales/revenue	33%	20%	23%
Our sales/revenue will decrease by less than 5%	32%	28%	43%
Our sales/revenue will decrease by more than 5%	24%	35%	20%

Capital Expenditures (Capex) to Decline Marginally in 2020

While respondents are currently expecting lower sales, most electronics manufacturers and suppliers do not yet anticipate cutting capex in 2020. Roughly 26 percent of respondents expect to cut capex in 2020 while 63 percent report capital investment will remain the same.

Figure 10: Capital Expenditures May Fall Marginally in 2020



Q: How will the Coronavirus impact your capital expenditure (capex) investment plans in Q1 2020?

Q: How will the Coronavirus impact your capital expenditure (capex) investment plans in Q2 2020?

Q: How will the Coronavirus impact your capital expenditure (capex) investment plans in calendar year 2020?

Table 3: Capital Expenditures May Fall Marginally in 2020

Capital Expenditure Impact	1Q20	2Q20	2020
Our capital expenditures will increase by more than 5%	6%	6%	5%
Our capital expenditures will increase by less than 5%	3%	4%	6%
There will be no change to our capital expenditures (capex)	73%	67%	63%
Our capital expenditures will decrease by less than 5%	4%	12%	13%
Our capital expenditures will decrease by more than 5%	14%	12%	13%

Appendix I: Methodology

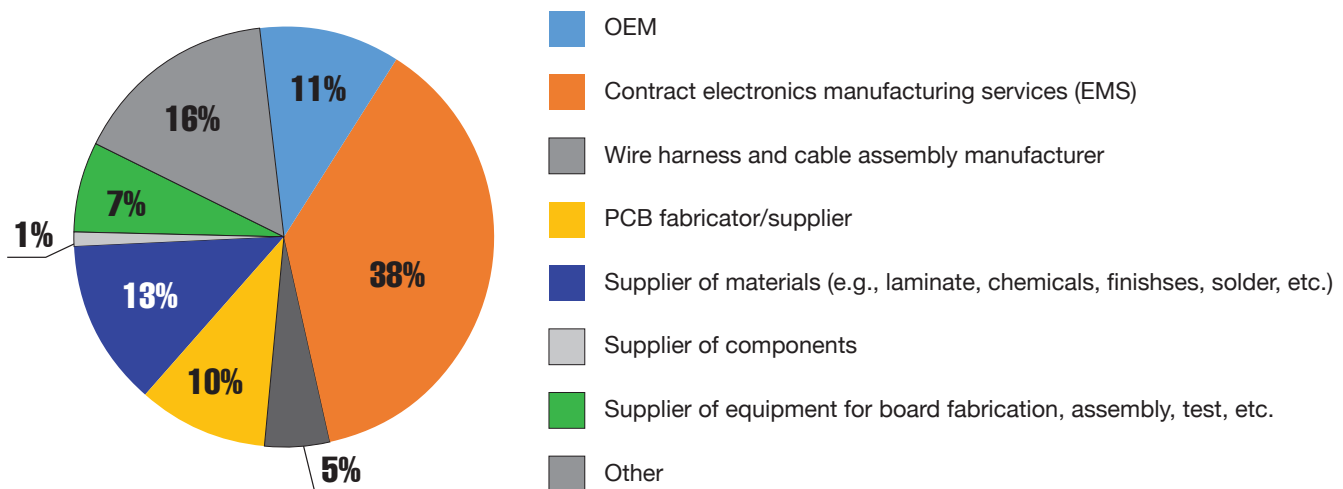
Study Objective

The mission of IPC is to support companies and individuals in the electronics industry worldwide through standards, education, advocacy and solutions that enhance their competitive excellence and financial success. Currently, the impact of COVID-19 on company operations and global supply chains is of concern for the industry. IPC seeks to understand the impact of COVID-19 on electronics manufacturers and how companies are responding to this new challenge.

About the Survey and Respondents

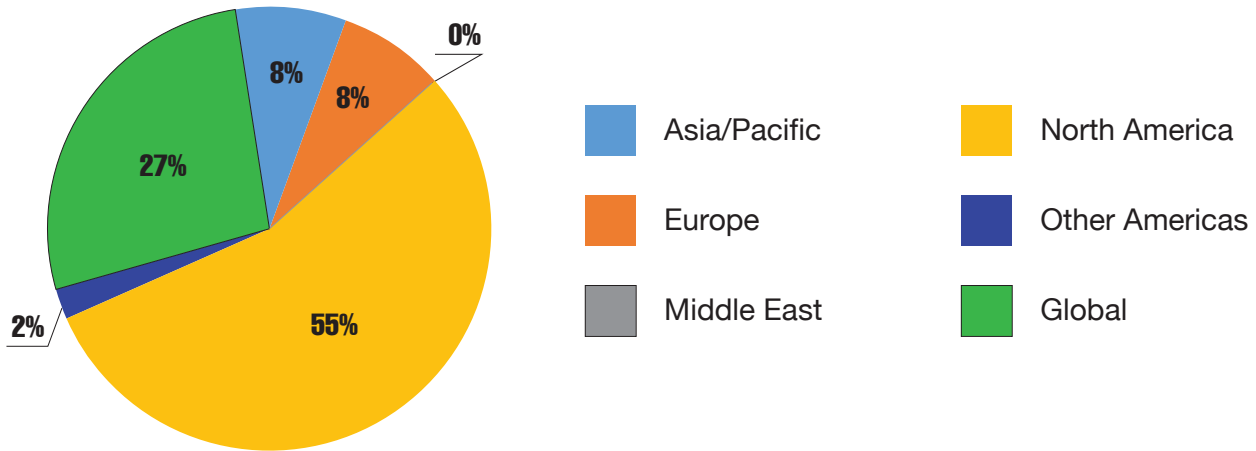
The aggregate data in this report is based on responses provided by 101 electronics manufacturing companies and suppliers in who participated in IPC’s “Fast Facts” COVID-19 Survey between March 3 and March 5, 2020. The survey was sent to contacts in middle and upper management at electronics manufacturing companies, including original equipment manufacturers (OEMs), electronics manufacturing services (EMS) companies, and printed circuit board (PCB) fabricators. It was also sent to industry suppliers.

Figure 11: Industry Representation



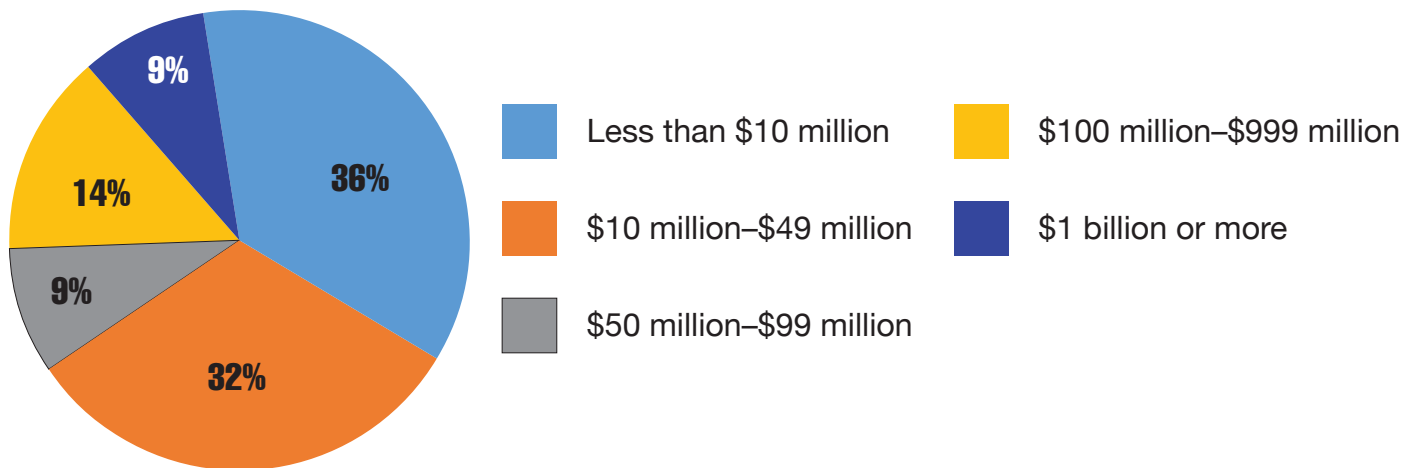
Q: Which of the following best describes your company’s primary industry segment?

Figure 12: Region for which Company is Reporting in this Survey



Q: Please select the primary region on which you are reporting for your company. Please select “Global” if your response covers operations worldwide or in several regions with none being the primary region.

Figure 13: Size of Company (Annual Sales USD)



Q: Please indicate the size of your company based on annual sales (in US dollars).

Appendix II: Verbatim Responses

Respondents offered the following verbatim comments about the various actions they are taking in response to the tariffs. (Some responses have been edited for length and/or grammar.)

Q: Do you have any additional insights to share in relation to the Coronavirus and its impact on the electronics industry?

Verbatim Comments	Industry Segment
Could bring more business back to North America	Supplier of equipment for board fabrication, assembly, test, etc.
Increased material handling protocols put in place	Contract electronics manufacturing services (EMS)
Many of the materials imported into the US fly on commercial airlines, which have been cut severely. This may have some impact on availability in the overall supply chain	Supplier of materials (e.g., laminate, chemicals, finishes, solder, etc.)
Most of our suppliers in Shenzhen are back to near 100%	Contract electronics manufacturing services (EMS)
My corporation, as well as others, are taking steps to keep those that travel out of the office after traveling. This is in part to keep those that must show up to work the factory less susceptible to the virus.	OEM
The biggest impact currently is PCB fab. I expect that as distributor parts inventory dries up, there will be a components impact. Not seeing a huge customer order impact at the moment (orders still coming in strong), but I also think that could turn at any minute.	Contract electronics manufacturing services (EMS)
There is a shortage of components used by our automotive customers.	Supplier of materials (e.g., laminate, chemicals, finishes, solder, etc.)
Travel restriction affects most.	
We are a services company, and because of the parts shortages we are not able to receive the normal business numbers.	Contract electronics manufacturing services (EMS)
We had a small box build that required a solenoid valve, which is made in China. We ordered that part four different times because of order cancellations. It is unusual for us to order the same part four times, and I believe this was due to supply disruptions due to coronavirus.	Contract electronics manufacturing services (EMS)
We have suppliers that appear to be hedging, with longer lead-times being communicated than being realized.	Contract electronics manufacturing services (EMS)



**THE IMPACT OF THE CORONAVIRUS (COVID-19) EPIDEMIC ON ELECTRONICS MANUFACTURERS:
March Update**



BUILD ELECTRONICS BETTER

3000 Lakeside Drive, Suite 105 N
Bannockburn, IL 60015 USA
+1 847-615-7100 **tel**
+1 847-615-7105 **fax**
www.ipc.org

IPC is the global association that helps OEMs, EMS, PCB manufacturers, cable and wiring harness manufacturers and electronics industry suppliers build electronics better. IPC members strengthen their bottom line and build more reliable, high quality products through proven standards, certification, education and training, thought leadership, advocacy, innovative solutions and industry intelligence.