

# How the Pandemic **Impacted** PCB Manufacturing

## The Plating Forum

Feature Column by George Milad, UYEMURA

The coronavirus pandemic has had a major impact on PCB manufacturing and assembly. Thanks to its classification as an essential business associated with national security, PCB manufacturing in the U.S. was exempt from shutdowns; it was not, however, immune from supply chain disruption. Raw materials shortages set the stage for higher prices. Companies that relied on just in time (Kanban) inventory management held back product, further burdening the supply chain.

Conversely, the pandemic also had a positive impact on manufacturing in the United States. Domestic companies increased their output and new opportunities were created. In addition, the pandemic itself created demands on the electronics industry, particularly in the field of testing, where millions of single-use circuits had to be manufactured locally.

The prolonged pandemic also forced companies to set up remote work. It quickly became apparent that high-speed internet allowed even complex tasks to be completed off-site. Today it is common for managers and technicians at all levels to work remotely. As the pandemic evolves into endemicity, working remotely is widely expected to remain an option for many.

In the electronics industry, opportunities for remote work are limited; companies must compete with the appeal and convenience of remote work, making employee retention more challenging than ever. Companies that meet this challenge do so by demonstrating a career path for those who meet expectations; they also invest in continuous training so that employees believe that management is invested in their progress. An employee who



receives pay increases, learns new skills, and is given more responsibility is less likely to seek employment elsewhere.

Of course, the biggest incentive to stay with a company is the belief by the worker that he is a member of a winning team, trusted by management to make decisions that will keep the company moving forward.

For the industry to thrive, it must be able to contend with global competition. To support the electronics industry and level the playing field against foreign competitors, the Senate passed The United States Innovation and Competition Act (USICA) in June 2021. The bill provides billions of dollars to improve the domestic capacity to produce semiconductors. This bill is welcome by the electronics industry as an incentive to produce semiconductors. However, the bill limits funding to a small sector of the industry and fails to address other related links in the supply chain that are critical to America's competitiveness.

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According to Meredith Labeau, chief technology officer at Calumet Electronics, "Semiconductors don't work alone; they are only one piece of the electronics DNA. The electronics value chain is complicated. To build advancing technologies, the system requires a wide array of moving parts: semiconductors, yes, but also organic/ceramic interposers, assembled printed circuit board and more. All these different components are critical for chips to actually do anything. And America is woefully trailing in the global competition to produce these critical products. The domestic

supply chain has 1-2% of the advanced packaging economy needed to put these products together to power our technology. And these supply chains are often the most vulnerable to global shocks and disruption."<sup>1</sup>

PCB manufacturing and assembly was not included in USICA. To bring government attention to this omission, the Printed Circuit Board Association of America (PCBAA) was established in 2021 by a consortium of major PCB manufacturers and their suppliers, who understood the need for greater support from their government to protect against unfair foreign competition.

PCBAA's goal is to level the playing field with overseas suppliers that are frequently subsidized by their governments, and often do not have to comply with the environmental constraints that are imposed on U.S. manufacturers. For the sake of national security and stability, the domestic PCB industry needs the support required to expand its share of the world PCB market far beyond the current 4% of the total production.

The author supports this effort. PCB manufacturing and assembly in the U.S. needs a concerted effort to propel the industry forward and regain market share. Government agencies must also support the industry by funding innovative research that will incentivize domestic suppliers and attract OEMs back to the local market. **PCB007**

### References

1. "Meredith LaBeau: How Congress Can Support American Electronics Manufacturing," Calumet Electronics Corporation, Oct. 15, 2021.



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