

Xiaosong Liu of Oregon Discusses Semiconductor Shortages

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CORVALLIS, OR, USA, December 9, 2021 /EINPresswire.com/ -- Semiconductor chip shortage, triggered by the COVID-19 pandemic is impacting many companies throughout an extraordinary array of industries. [Xiaosong Liu of Oregon discusses](#) below the cause and possible future impacts.

The Semiconductor Industry is a Global Industry with Long Supply Chain

Semiconductors industry has a long and complex supply chain involving companies around the world. A semiconductor chip designed in the United States could be built in wafer Fab in Taiwan or South Korea. The material used may come from Japan or Europe. The equipment inside the wafer Fab is from the US, Europe, and Japan. The final chip product is assembled and packaged in Taiwan, Malaysia, and Singapore and then shipped to customers around the world.

In short, it's only as strong as its weakest link which is many in such a long chain. Interrupts in any one of these countries produce delays across the world. With delays across the entire globe, the problem is compounded exponentially. Every factory, manufacturing center, assembly center, and packaging center must resolve its issues with the pandemic, bring people back to work, and spin up operations again.

Even all issues mentioned above are addressed, the vast changes in global customer demand challenge the adaptability of the complex semiconductor supply chain. The rapid reopen and economic recovery drives a rebound of automobile demand. This rapidly increasing demand has outpaced production plan changes for automotive chips in semiconductor supply chain, which



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contributed to the current automotive chip shortage, [Xiaosong Liu in Oregon explained](#).

Just-in-Time Supply Chain Management Introduces Weaknesses

Automakers, and other manufacturers using semiconductor chips, have adopted "just-in-time" supply chain management for leaner, more agile enterprises. Just-in-time models ensure that products are delivered as needed and only as needed, allowing them to change models, suppliers, and more, on a dime.

But this model is based on the principle of timely inventory adjustment based on the turnaround time change. This principle is difficult or even impossible to practice when there's a major disruption in the supply chain, such as the COVID-19 pandemic. When major disruption occurs, the turnaround time changes too fast to timely adjust the inventory level accordingly. Hence, companies don't have stores of products or resources that they can use until the disruption is resolved. The company runs out, their vendors run out, and their vendors' suppliers run out. Ripples occur throughout the supply chain until the entire supply chain is down.

Looking Into the Future of Semiconductor Manufacturing

Many industries, from computers to the automotive industry, have essentially ground to a halt because of the semiconductor shortage. Our global supply chain and world factory model used to focus on efficiency and low cost. In the future, it's likely that the global supply chain will move towards regional ecosystems. Xiaosong Liu in Oregon has noted the shift from "world mega factory" towards "multiple regional manufacturing centers." A balance among cost, efficiency, and resilience needs to be achieved in the new supply chain model in a world where there may increasingly be disruption and bottlenecks.

[Xiaosong Liu of Oregon is of the](#) opinion that the supply chain shake-up and reorganization is likely to continue even after the COVID-19 pandemic, creating some lasting repercussions in the semiconductor industry while charting a path towards a more certain future.

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