



Delays on materials for OSP construction “A Perfect Storm”

Oklahoma Telephone Association

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Demand and Unexpected Constraint

Unprecedented demand

- Record levels of government funding for rural broadband expansion
- Largest service providers re-energized to also expand
- 4 to 6 year expected run of this high demand
- Seeing lead times from manufacturers of over a year on standard products

Raw material cost increases and shortages

- Rising crude oil costs and shortages due to low refinery run rates
- Plastic resins
 - Winter storm forced over 25% of U.S. chemical capacity offline
 - Plastic manufacturers issued Force Majeure and decreased supply levels to manufacturing plants
- Metal cost increases
 - Copper: 104%
 - Aluminum 55%
 - Steel: 38%

Plant labor and transportation shortages

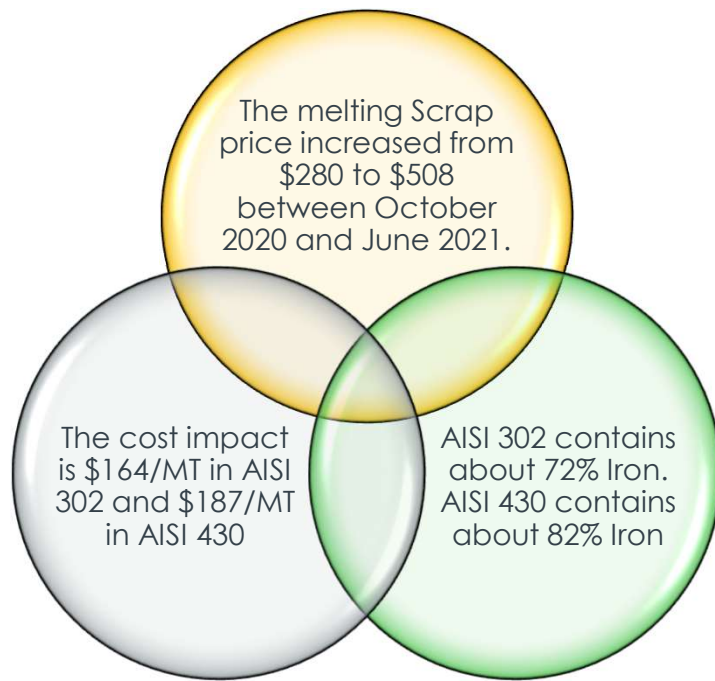
- Covid-related stoppages and slow-downs
- Packaging also affected (lumber, etc.)

Resin- duct, plastic peds, hand holds

What Happened?

- The root cause of this crisis is the COVID-19 pandemic
- 2020 and the beginning of 2021 have been a battle, especially for Texas and Louisiana resin manufacturers. Like many, resin manufacturers experienced some shift in product due to COVID-19 disruptions
- To abide by COVID-19 rules and regulations, many plants ran into staffing issues as production facilities
- Shipping ports and supply chain logistics all saw a slow down when quarantined production shifts removed days of labor, as well as short staffing because of symptomatic employees
- As a result, many thermoplastic resins were already in tight supply
- Then, in the middle of the COVID-19 pandemic, the south saw one of the worst hurricane seasons in years causing increased delay, as well as damage. In February, the United States was hit with Winter Storm Uri resulting in power outages across the country.

Steel- strand, lashing wire, pole hardware, peds, cabinets, racking



While the demand in the financial year 2021-22 is expected to be in the range of **140-150** million tons, the country's production is expected to be somewhere around **125** million tons. The supply vs. demand gap is also driving the price up.

Chip Shortages for our electronic manufacturers

The chips that are in short supply perform various functions in modern products, and there are often more than one in a single device.

Among the pressures facing the chip industry prior to the pandemic were the rise of 5G, which increased demand, and the decision by the US to prevent the sale of semiconductors and other technology to Huawei. Chip makers outside the US were quickly flooded with orders from the Chinese firm.

As the pandemic unfolded, early signs of fluctuating demand led to stockpiling and advance ordering of chips by some tech firms, which left others struggling to acquire the components.

People working from home have needed laptops, tablets and webcams to help them do their jobs, and chip factories did close during lockdowns.

At times consumers have struggled to buy the devices they want, manufacturers trying to catch up with demand.

Bad luck has exacerbated the problem. An atrocious winter storm in Texas in 2020 shutdown semiconductor factories, and a fire at a plant in Japan caused similar delays.

The chief executives of Intel and IBM have both said recently that the chip shortage could last two years.

The bottom line is that the pandemic accelerated an already precarious situation for chip makers - we're in the middle of a tech boom, supply can't quite keep up - and it won't get sorted out overnight.

Armored Fiber Cable

Market-wide, the #1 fiber cable sold is armored. There is now a shortage in the material needed to make the armor.

This will challenge multiple suppliers of fiber cable and will get worse in next months.

Existing order production & ship dates (with Superior, Corning, Commscope, etc.) could eventually be affected by this and be pushed out.

With existing order pushouts, future allocation space and production get pushed out also. June lead-times become July or August, etc.

Transportation

- Domestic freight costs continue to increase; Cass Truckload Linehaul Index up 10% vs 2020.
- Fuel surcharges increasing with oil prices more than 75% higher vs 2020.
- Ocean freight and contain costs continue to soar with a 261% increase vs 2020 not including additional premiums.
- Container dwell times and truck turnaround times deteriorated in May and June; In August, forwarders plan to begin adding an additional \$3-5K per container due to the delays.
- The import surge is expected to continue into 2022 as peak season nears with back-to-school and holiday demand.
- Labor/driver shortages make it difficult to move product.

Distribution Planning around Demand

Greater inventory investment knowing there would be increase in demand

- Monthly blankets for high running standard products
- Smart forecasting based on history and end-customer input

Constraints (previous slides) changed the scope

- Lead times and costs increase even on these existing orders
- Customers from all markets looking at all supply sources
- Currently do not know when manufacturing levels will stabilize, but reviewing regularly with key manufacturer partners

Customer specific programs are best route if properly forecasted/planned

Customer Specific Programs

Customers' **forecasting** time frame and commitment-levels must increase

- Historical and short-term forecasts create gaps that cannot be quickly rectified under current market conditions
- Review projects 1 to 2 years in advance and build commitment around
 - Place focus on critical products required to complete (standardization helps)
 - Seeing orders now for 2023 (January thru December) deliveries on key project material (with requests for 2024)

Work with your logistics/distribution partner

- Stock authorization agreements – define/outline safety stock and slow move material
- Continued dialogue/communication throughout efforts to ensure all parties are in sync

Questions?

As always, Power & Tel appreciates your business!

