

## Bill's Building Blocks

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### Erratic Demand Means Difficult Choices for Supply

Months into the Covid-19 pandemic as restaurants struggled with on again, off again rulings to move from take out to indoor dining, and as food services companies began to reorganize supply chains for possible back-to-school demand, tropic storm Isaias hit. In my area electricity was out for three and a half days. Other areas in the tri-state and on Long Island suffered longer power outages. Refrigerated foods spoiled. Scarce business cash reserves spent before the storm to replenish food inventories were wasted. How can a business plan supply for such erratic demand disruption?

From Bill's Building Blocks three articles ago as supply chains are restarted... **“Third, match erratic market demand with product supply** – The placement of the push/ pull boundary sets your BTS, ATO, BTO, or ETO operating strategy. Demand may be pent up, then sporadic rather than its pre-pandemic regularity. Match supply to demand through planning inventory and capacity. If you are starting from a high residual inventory, consider matching demand to supply through dynamic pricing.”

Begin by separating supply issues into three categories: 1) Out of capacity, 2) Out of inventory, 3) A need to substitute parts or products or suppliers. Out of capacity means your capacity is for some reason constrained, for example there are not enough JCP&L repair crews to deal with downed trees and exposed wires to repair the electric grid. Out of inventory means your inventory supply is for some reason constrained, for example the local foodbank runs out of enough cases of bottled water and boxed foodstuffs to go around. The need for substitution can be driven from a shortage of one or more parts, of one or more products, or by the collapse of one or more suppliers. For example, the local hardware store suggests substituting a different manufacturer's spark plug to repair your portable generator. Work arounds are more difficult moving up from parts to suppliers.

Capacity issues are solved by finding ways to run parallel processes, for example JCP&L called on out of state utility crews to assist. Inventory issues are solved by prioritization and allocation, for example the distribution mix of perishable versus non-perishable food is adjusted for a brief period of time. And smaller lot sizes can be delivered more often. Substitution issues are solved by finding sourcing alternatives, for example buying spark plugs on-line from Amazon or buying a portable generator from Home Depot.

Break erratic demand into multiple short planning time periods, then set upper and lower demand expectations within each period. Match supply to demand within each period by segmenting the type of supply issue, allocating available resources, qualifying the time available to develop a response, and quantifying any immediate cash outlay.

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