SUPPLY CHAIN PLANNING

FOR COVID-19 RECOVERY

BUILDING SUSTAINABLE SUPPLY CHAIN ADVANTAGE IN TRYING TIMES

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This article examines the challenges faced by supply chain planners and leaders in formulating the correct practices in planning, tactically and strategically. A host of tools and techniques to be incorporated in typical statistical planning models is suggested. The article concludes with an examination of supply chain resilience and a simple methodology to incorporate resilience in supply chains.

The tools, techniques and methodologies suggested in this article are not industry specific and need to be modified to suit industry and organization specific context.

As the world is slowly limping back to normalcy into the Post Corona era, supply chain leaders and planners contemplate making the leap of faith back to normal. In this endeavour, they would need to decode the behaviour of Demand and Supply for their industries distinctly and unambiguously. They also need to weave these peculiarities into their planning to successfully traverse the thin line between customer dissatisfaction and unsustainable inventory levels.

Key challenges that planners face today

1. Estimating the timeframe over which suppressed demand for most products will continue. This needs to be estimated with a great deal of granularity over the product range

2. Estimating demand for perceived essential commodities correctly

3. Estimating supply chain risks and uncertainties and planning safety stock accordingly

4. Estimating potential for demand substitution between products having constrained and unconstrained supply, adjusting demand forecasts accordingly

At a transactional level the three activities mentioned below are required be performed mandatorily in each planning cycle

1. Demand lift or drop estimation corresponding to all product family & geography combinations

2. Record estimations applied manually for later evaluation for efficacy and correction

3. Conducting scenario planning and applying most likely scenarios to demand forecast

As in all exception handling the response needs to be trifurcated in the immediate short term, the medium term and the long term.

Immediate Short Term

In the rough and tumble of the crisis, it might be tempting to rely less on Statistical Forecasting and tend to the 'gut feel' and 'market knowledge' of the customer facing organization. That however might be an extremely accelerated way to disaster in the marketplace, despite their 'knowledge', it is unlikely that these stakeholders could comprehend the import of the current disruption and predict the demand correctly. The way to achieve the most accurate demand forecast would be as below in most cases

1. **Calculate Baseline Forecast** – Baseline forecast should be calculated using data from before the market disruption avoiding the recency effect of the post Corona demand drop. Outlier correction may not be the right solution here as it loses effectiveness in cases of anomalies extending multiple forecast periods.

2. **Determine Lift / Drop to be applied to the Forecast by Product Family** – Geography Combination – Market intelligence from the market facing organization should be used in calculating this lift or drop. It is essential that granularity of this exercise be maximized to increase accuracy.

3. **Estimate the Span for applying these corrections** – Based on the estimates of disruption at a local level and the differential impact of normalization on different product families, the span for applying these corrections should be estimated and adhered to while applying the lift / drop in the statistical forecast

Medium Term

As the impact of the Covid-19 induced disruption is receding, it is becoming apparent that the 'New Normal' may not as different from the 'Old Normal' as we had imagined. A significant portion of stakeholder behaviour may change irreversibly, but a lot of it will probably remain unchanged. Supply chain planners must be extremely clever to appreciate the extent of this behavioural change and the impact on demand for their products at an extremely minute level. At this point it is also important to estimate challenges on the supply side and hedge risks against supply failure. As the situation evolves the job will become much tougher before becoming easier.

1. **Conduct Scenario Planning** – At this point scenario planning would possibly be the single most critical job for planners. This calls for an in-depth understanding

of the evolving situation in all geographies and analysing the impact on product families comprehensively. Support needs to be drawn from the market facing parts of the organization for providing insights. The logical next step would be to subject the projected scenarios to sensitivity analysis on business-critical parameters.

2. **Continuation of Tapering off Corrections to Forecast** – Based on the rate of normalization of the situation, the tapering off corrections to historic forecasts would need to continue.

3. **Estimating Safety Stocks** – As events normalize, pipeline stock would need to be estimated and risk assessment at a supplier and product level conducted. These qualitative inputs need to be incorporated in quantitative inventory planning models to estimate realistic safety stock levels to withstand disturbances and optimizing inventory simultaneously.
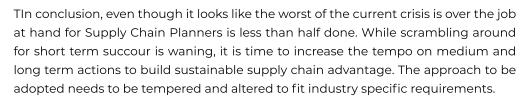
Preparing for the Long Term

In the long term as focus shifts from the tactical to the strategic, supply chain planning will move out of focus and risk management prioritized. Efforts must be channelized for building sustainable supply chain resilience and ingratiating it at the planning stage. Weaknesses in the supply chain need to be monitored continuously and an effective feedback mechanism to be maintained to the planning organization.

1. **Document Scenarios, Estimations and Corrections** – It is imperative that all estimations, corrections and scenarios worked out at different stages be documented and recorded. This serves the purpose of creating a record all mitigation measures, also this provides an estimate of correction to be applied to sales history for improving forecast quality in the future.

2. **Increase Supply Chain Resilience** – Supply chain resilience should not be confused with event management for disruptions. While developing resilience is proactive necessitating immaculate planning, management of individual events is essentially a reactive phenomenon.

As businesses evolve and supply chains extend boundaries (geographically and functionally), they are being threatened by hitherto unimagined sources. In the last one year two unlikely events – a bilateral trade dispute and a viral pandemic took the wind out of many Supply Chains. It is futile to attempt risk mitigation for specific events. To be successful in this, supply chain planners and leaders would need to estimate uncertainty, create scenarios for disturbance to essential processes and create mitigation measures for these processes.

To achieve this process level risk management, a thorough understanding of performance drivers of the supply chain, the interplay of these drivers amongst themselves, interplay with supply chain attributes and the effect of this interplay on business outcomes would need to be drawn. To exemplify from recent experience – Service levels of personal hygiene products fell as demand soared with the onset of the Covid-19 pandemic. Further as production got disrupted service levels crashed completely. The interplay between supply chain attributes – demand and production impacted the business outcome – customer service level. Data analysis would then be employed to set tolerance limits for business attributes for business outcomes to breach acceptable levels. The same data models being used to explore the interplay between business attributes. Based on the findings from this analysis resilience measures would need to be identified and instituted – e.g. diversification of supply risk, supply and distribution network redesign, reactive mitigation strategies etc.

TIn conclusion, even though it looks like the worst of the current crisis is over the job at hand for Supply Chain Planners is less than half done. While scrambling around for short term succour is waning, it is time to increase the tempo on medium and long term actions to build sustainable supply chain advantage. The approach to be adopted needs to be tempered and altered to fit industry specific requirements.

About the Author

Prasoon Singh has spent 19 years working in the areas of Supply Chain Management, Warehousing and Logistics Operations, Network Design, Demand and Supply Planning, Process Design and Reengineering. He has successfully completed several Business Transformation Initiatives with Fortune 500 comapnies. Currently he heads the Supply Chain Consulting Practice at Stellium Inc.

Stellium Inc. has a consulting practice spanning Supply Chain Strategy, Supply Chain Planning, Network Design, Warehousing & Transportation Operations, Analytics and RPA Application in Supply Chain & Management

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