



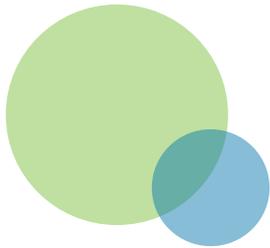
Demand Plan Recovery after the Black Swan

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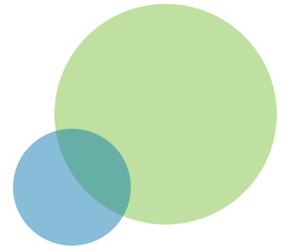




Introduction

Stuffed supermarket trollies with (non-)essentials, empty shelves, shoppers fighting over the last packet of toilet roll... In March this has become an unfortunate and familiar sight. Initially COVID-19 seemed to be at a safe distance from Europe and consumers and businesses had fairly little to worry. Unfortunately, this black swan's wings spread and the COVID-19 pandemic also became the harsh reality in Europe, striking the operational pulse of a vast number of companies and causing havoc in the supply chain. Customer service levels, forecast accuracy, forecast bias and the number of stockouts deteriorated as unpredictability increased in consumer goods and retail due to rapidly changing consumer behavior. When it comes to Sales and Operations Planning (S&OP), this type of unpredictable volatility is a business' worst nightmare. What seemed like a solid plan last S&OP cycle, where demand and supply elegantly met end-to-end, is now only an old faded version of the truth. So, what is next and how can a sensible operating plan be rebuilt?

Demand

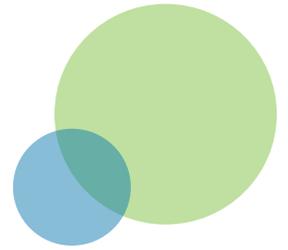


Many recovery actions will be strongly intertwined. Frequent S&OP checkups are necessary in the short run in order to fight the fires. First of all the demand plan needs to be restored. This will be one of the most difficult steps due to its unpredictable nature. There are a number of reasons for this. Consumer behavior and loyalty will likely have changed due to the COVID-19 epidemic. Consumers will have switched brands, moved towards private labels or could have even stopped buying the category. In the longer run, the new reality will show a shift in market shares for retailers (e.g. between different retailers or retail channels) and consumer goods companies (e.g. substitution with a category of a certain business or between the categories of several businesses), meaning that market shares can also be very different once life returns to normal after the crisis. These changes can take a very broad scope: consumers can have switched brands. It is also possible that market data will show that selling out does not follow selling in at certain retailers because they could have been selling through other channels.

For products with a high seasonality, it is also possible that their demand will be distorted due to the pandemic (e.g. it is likely that chocolate Easter eggs will have been stocked far upfront this year and there will be no last-minute shopping). The type of consumer goods will also play a role: sales will pick up faster for categories that perish faster (e.g. fresh produce) versus categories which have long best before dates (e.g. toothpaste). Global demand for products like hand sanitizer, soap and vitamins might persist, we learned from the SARS epidemic that health and hygiene is a natural habit shift post epidemic.

Also related to the type is the demand elasticity of the category. Demand for products with a high demand elasticity can actually move in both ways after such a pandemic (e.g. branded chocolate bars or toothpaste). Those with an inelastic demand – they are typically the essentials – are equally unpredictable since consumers have stock-pilled and we do not know when their personal stock will reach the level that they will need to repurchase. For certain categories of products where demand has fallen back completely, it can be handy to apply certain techniques in sales and marketing. This should reduce the bullwhip effect (the effect where small fluctuations in demand at the retail level can cause progressively larger fluctuations upstream) and stimulate the demand through pricing, incentives or promotions in order to return to a stable demand as fast as possible. In the light of scarce supply capacity, it can also be practical to postpone new product launches or rollouts for distribution increase.

Supply



On the supply side, where the production capacity has been stretched due to the bullwhip effect, getting back to a stable supply scenario is equally tricky. Where capacity has been stretched, it makes sense to prioritize the sales of products with the highest strategic value to the firm, by taking cash constraints into account for the inventory buildup. It is important align these strategic priorities between the demand and supply sides.

Since there might be many stockouts in a company's portfolio and demand cannot be supplied entirely, it makes sense to allocate inventory fairly amongst customers. Having a view on retailer stock levels through for example, vendor-managed inventory will be of much added value to facilitate this process. Though for the retailers where no visibility of inventory is granted, the consequences in the

supply chain of this pandemic can be used as a starting point to start a combined forecasting planning and replenishment (CFPR) initiative on a permanent basis, leading to further supply chain optimizations on the way. These types of collaborations can lead to a better agility and resilience of the supplier-retailer supply chain in the future. Another important point that cannot be ignored is that automatically generated safety stock parameters will need to be taken with a grain of salt. Due to the pandemic the forecast accuracy will have considerably deteriorated leading to a large coefficient of variation (COV) in the forecast and the standard deviation of actual sales will have also taken a leap. Automated calculations will give biased outcomes, so it is best to make best estimates by following the strategic value priorities set by the business that take the cash position into account.

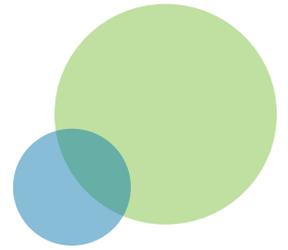


Future



Such large-scale unpredictable events will lead businesses to embrace lessons learned and critically rethink their global supply chain in an attempt to mitigate their vulnerability to a number of risks. Thus improving their capabilities and preparing to be more agile and resilient in the future. Within Industry 4.0 a convenient technological innovation to facilitate this process is the so-called digital twin. The digital twin is basically a mirror of the physical business: physical systems, assets or processes can be put into the digital twin. They are also often supported by artificial intelligence and machine learning to enable simulations that can drive sound data-driven decision making in the physical business. In some industries the use of digital twins has become a fairly common practice (e.g. in high-tech industries). This is however not yet frequently the case for consumer goods and retail. Unilever was one of the first companies in the consumer goods industry to adopt digital twins in order to optimize their manufacturing processes, leading to considerable performance improvements within their supply chain. Digital twins however do not need to be limited to purely manufacturing processes; they can be applied for product life cycle management or to the whole supply chain to simulate demand and supply end-to-end to reveal potential weaknesses to drive optimizations and perform risk management assessments.

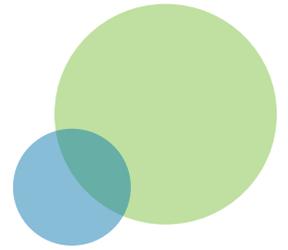
Conclusion



We can conclude that due to the COVID-19 pandemic supply chains have been hugely disrupted and operating plans are an old version of the truth. In order to return to a stable demand and supply situation, there are quite a number of intertwined considerations to take into account in order to come to a consensus on the new reality. Towards the future, it will be important for businesses to embrace the lessons learnt and to look for ways to proactively engage in risk management scenarios to optimize their supply chain agility and resilience during times of unpredictability.



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