

FACTORS FOR SUPPLY CHAIN RESILIENCE

6 positive influential factors which make modern supply chains more resilient.



OPTANO
a KEARNEY company

POSITIVE INFLUENTIAL FACTORS FOR SUPPLY CHAIN RESILIENCE

Not since World War 2 has an event had an impact on the world and its economy as profoundly as the COVID-19 pandemic. For most inhabitants of western industrialized countries, the huge implications that supply chain disruptions and supply gaps can have on daily life was something they knew from history books, at best. Then, all of a sudden they found themselves facing empty supermarket shelves.

What went wrong? Well, for a long time, procurement networks only focused on one relevant parameter: cost efficiency. The length of the transport routes and the delivery times: who cares? Dependency on one or very few suppliers: secondary. Consequently, supply chains became longer and longer – and therefore more vulnerable to disruptions.

Triggered by the Corona pandemic and exacerbated by the growing frequency of natural catastrophes, resilience has now been catapulted to the top of supply chain managers' and C-level executives' agendas. Yet, what are the factors that contribute to supply chain resilience? This is something we want to look at more closely in this factsheet.

Plans can be created at the touch of a button with mathematical optimization.



SUCCESS FACTORS FOR SUPPLY CHAIN RESILIENCE

Resilience is generally understood as being the ability of a system to respond to external shocks or disruptions and then return to stability as fast as it can. With regard to supply chains, this means getting the goods cycle up and running again by making adjustments or transformations as quickly as possible. But how can a supply chain become more resilient?

NO. 1: ASSESS THE RISK IN ADVANCE

Safeguarding against risks is always associated with costs. This is why it is even more important to weigh up the potential danger carefully in advance. How many risks a company is prepared to bear depends on many factors: on the corporate strategy, the markets as well as the direct and indirect costs of a failure on the procurement side. A supplier of low-cost, low-margin products would surely do well to continue buying as favorably as possible and to accept the increased risk of default into the bargain. A supplier of low-cost, low-margin products would surely do well to continue buying as favorably as possible and to accept the increased risk of default into the bargain. A premium supplier, on the other hand, not only has to worry about direct costs but also the loss of prestige in case of non-delivery. In this case, s/he should probably be more risk-averse..

Furthermore, it should always be possible to ask other stakeholders (e.g. customers or the government) if they would be prepared to bear some or all of the costs for the risks.

NO. 2: FOCUS ON KEY AREAS

This aspect follows on seamlessly from the risk assessment. Should the entire supply

chain be protected extensively or perhaps it is enough to focus on certain key areas? Maybe it is quite sufficient to concentrate on protecting individual products or locations? A branded detergent manufacturer offering both a premium and no-name product on identical machines could shift his/her resources in favor of the premium product in the event of a





disruption. While this would mean that he/she would have to accept a loss in the low-margin segment in this case, he would still protect his premium brand instead of having to shut down production in both segments

NO. 3: CONSIDER RESILIENCE IN THE SUPPLY CHAIN DESIGN

Of course the best-case scenario would be the possibility to create a new supply chain from scratch. Here, resilience should play a key role and not just cost-efficiency. It may be a truism, but it doesn't mean it is any the less true: it is

mostly cheaper and less complicated to plan appropriate safety mechanisms from the outset rather than having to painstakingly upgrade them later.

NO. 4: CONSIDER MULTI-SOURCING

By distributing orders among several suppliers, you naturally lose the economies of sale in price negotiations. On the other hand, you also spread the risk of supplier failure. When choosing your suppliers you should bear in mind that a suppliers' vulnerability to disruption will increase the longer and more complex the supply chain becomes. Perhaps it would be worth having a portfolio mix of suppliers with short and long delivery routes from various countries? Existing suppliers should undergo constant re-evaluation and new sources should be sought and identified on a regular basis.

NO. 5: CREATE TRANSPARENCY IN THE SUPPLY CHAIN

Supply chains are sometimes very complex. So complex that supply chain managers often have difficulty maintaining an overview of the supplier relationship at the first level. In order to identify potential disruptions within the supply chain at an early stage, it is necessary to have a deeper understanding of it. In an ideal world planners, supply chain managers and buyers will also keep an eye on the second and third levels – in other words, the suppliers of the suppliers. The incoming order, the stock of required raw materials to complete the order, the production progress, the shipping details, deviations to the plans and many more – these are all parameters which an early warning mechanism needs to alert us of in the event of a possible failure. One example of a possible response to such a warning would be to increase the safety stock of certain components and raw materials.

NO. 6:

INVEST IN MATHEMATICALLY OPTIMIZED PLANNING

The above five aspects clearly demonstrate that we are dealing with a highly complex issue. The sheer mass of information, data and possible decisions means that traditional planning using Excel spreadsheets is virtually impossible. By deploying mathematical optimization supply chains can be created from millions and millions of possibilities so that they contribute optimally to objectives like resilience, but also to cost optimality.

The system uses machine learning to analyze historic, real and forecast data in order to identify areas which need to be protected and then calculates the costs of a potential solution in order to increase resilience.

Using prescriptive analytics it not only creates the optimal plan for the required level of security but also considers the variations which are maximally cost-efficient at the same time. In addition, planners and supply chain managers obtain sound recommendations on how the defined objectives can be achieved. For strategic considerations, the effects of decisions can be simulated and broken down into all the necessary KPIs with the help of what-if scenarios.

This is an invaluable competitive advantage on the road to achieving resilient supply chain planning.

Take your network planning to the next level with mathematical optimization. For more resilience and cost efficiency.



WOULD YOU LIKE TO LEARN MORE?

Are you interested in a free-of-charge OPTANO demonstration or would you like to meet us and discuss the possibilities mathematical optimization has to offer in your company? We're here to help!

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OPTANO provides innovative solutions, enabling businesses to plan faster, better and more easily. Thanks to mathematical optimization, OPTANO finds the optimal solution to any problem.

OPTANO is customized to suit your specific needs. Whether you want to optimize your supply chain, your entire network or your production plans, OPTANO makes your planning process efficient, clear and flexible.

And that's not all: OPTANO supports you in your strategic decisions using Prescriptive Analytics. This means that you can consider

various options in what-if scenarios and get sound recommendations for action - based on the sound analysis of your data and targets.

Visit us at www.optano.com and find out how we can take your planning to the next level together.

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