

# WHY CHOOSE SUPPLY CHAIN ANALYTICS?

How deploying analytics can help  
to optimize your supply chain.



**OPTANO**  
a KEARNEY company

# OPTIMIZING THE SUPPLY CHAIN WITH ANALYTICS

The supply chain contributes enormously to a company's competitiveness and success. Supply Chain Management (SCM) should therefore take a proactive approach to ensure flexibility.

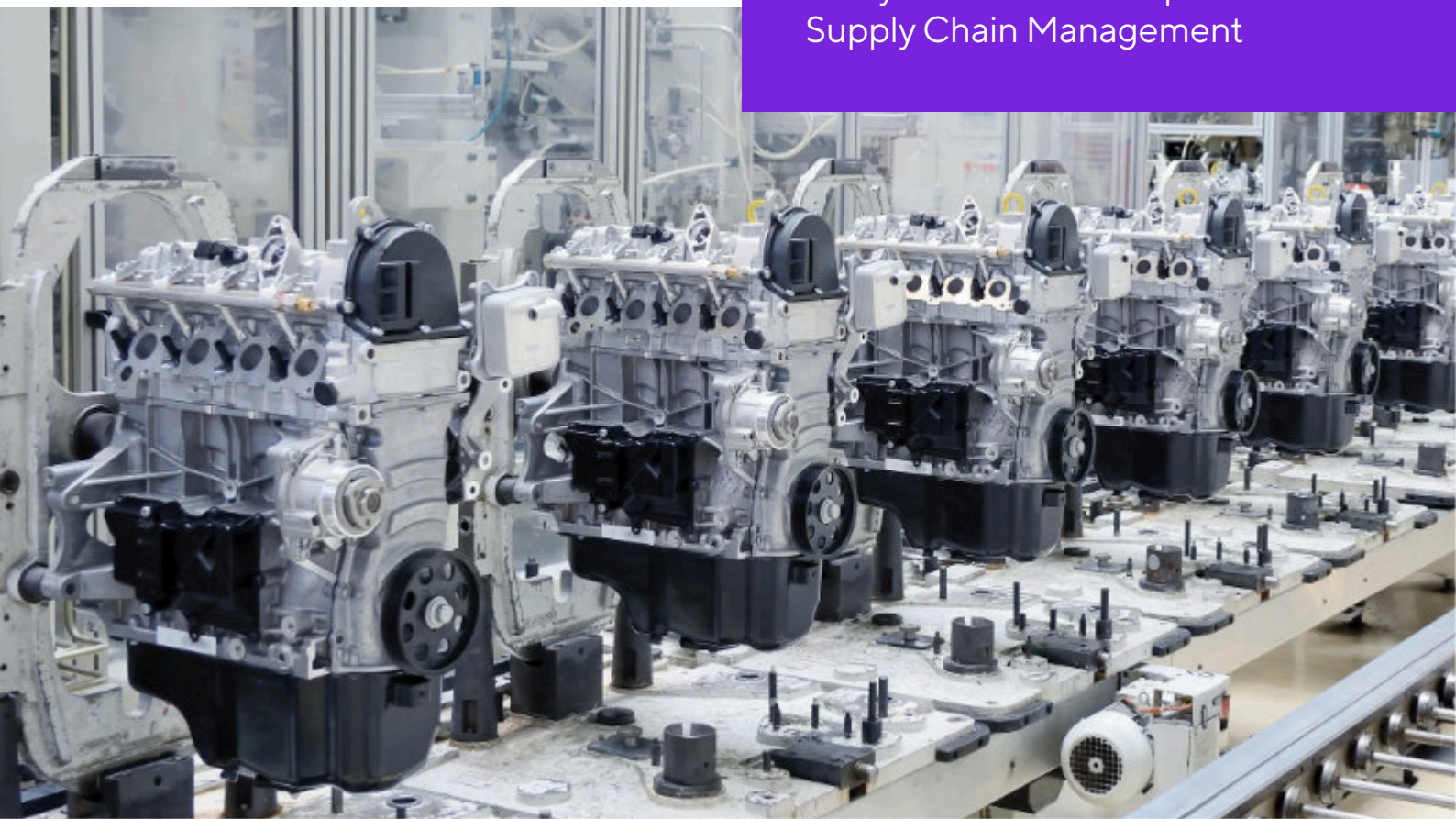
## WHAT IS THE SUPPLY CHAIN?

The supply chain is the network between suppliers, one's own company and the end consumers. It covers the entire process - from the procurement of raw materials to customer delivery. Within this network a lot of costs are generated which affect overall profitability.

At the same time, the supply chain has a direct effect on a company's ability to ensure that their customers remain satisfied and convinced...

In view of this immense significance of the supply chain, optimization using analytics is essential for the future.

Analytics as a basis for proactive  
Supply Chain Management



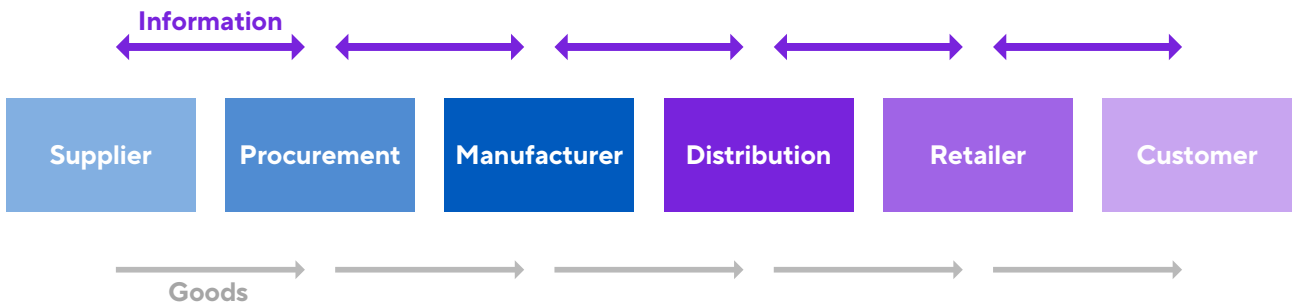
# THE SUPPLY CHAIN IS A SOURCE OF VALUABLE INFORMATION

The number of parties in the supply chain process is growing. So, too, is complexity at the same extent, making it all the more important to optimize the processes from supplier to customers as effectively as possible.

For many businesses, supply chain optimization is playing a more important role in day-to-day operations than ever before. This is because, as the number of partners and organizations in the supply chain is growing, so, too, is the pressure to deliver products as fast as possible. On the one hand, the large number of parties involved in the supply chain leads to a high level of complexity.

On the other hand, a vast amount of data is generated which, if deployed correctly, provides opportunities to optimize the processes along the lengthy route from the raw material suppliers to the consumers, making them faster, agiler and more cost-effective.

Diagram 001: The flow of information and goods along the supply chain



Supply Chains generate huge amounts of information and data at all of their levels - from procurement to production and distribution. Moreover, the upstream and downstream impacts of specific disruptions must also be considered. Problems at one level may have an effect on the overall result - with regard to both a company's profitability as well as to how it meets its customers' expectations.

However, many companies do not know how to identify and address potential challenges in the supply chain. This is where the data comes into play: With Supply Chain Analytics, companies can identify problems early on, take counter-measures where necessary and thus attain better results.

# WHAT IS SUPPLY CHAIN ANALYTICS?

Supply Chain Analytics helps companies in all sectors to make better, faster and sounder decisions on their business processes

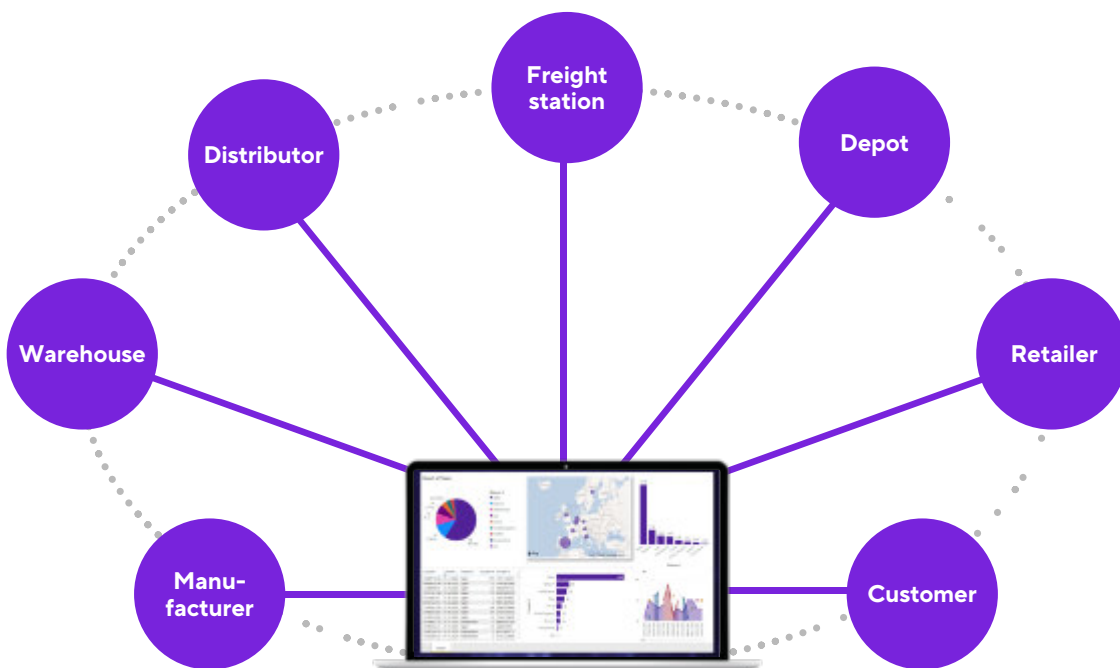
Supply chains usually generate huge volumes of data. Supply Chain Analytics enables this data to be deployed effectively by detecting patterns. In this way, companies can gain vital information and insights. The analytics results can then be used to make or optimize decisions.

A large amount of data originating from various sources can be deployed for the analysis. For example, the business data from internal systems such as ERP and CRM. But also other appli-

cations, which are connected to the supply chain, can provide data on procurement, inventory and order management, warehouse management and processing as well as logistics and dispatch. The result is a detailed picture of the processes along the entire supply chain.

The relevant data to make the decisions can be summarized in dashboards or reports where they are often visualized in diagrams or graphs.

Diagram 002: How does Supply Chain Analytics work?



# WHICH TYPES OF SUPPLY CHAIN ANALYTICS ARE THERE?

Analytics can be deployed in very different ways. These range from the descriptive analytics of historic data to prescriptive analytics with specific recommendations for action.



In order to understand how analytics can help to maximize the value of supply chain data, it is worth taking a look at the four defined categories:

## DESCRIPTIVE ANALYTICS

Descriptive analytics uses the information which is available in various systems and databases to interpret **what happened in the past**. This is done by deploying statistical methods in order to obtain a summary based on past supply chain procedures. This can be useful in order to find the answers to questions such as: „How have stock levels changed in the last few months?“ or „How high is my ROI?“

## DIAGNOSTIC ANALYTICS

Diagnostic analytics also works with historic data and tells us **why something happened or why targets were missed**. The data analysis helps to detect correlations and identify patterns, thus providing deeper insights into specific problems such as: „Why are deliveries delayed?“ or „Why is our stock turnover so low?“

## PREDICTIVE ANALYTICS

Predictive Analytics helps to forecast **what is likely to happen in the future** based on historic and current data by using advanced mathematics and complex algorithms. The transparency that is gained here enables us to identify trends and adapt strategies in advance. By doing so, possible disruptions in the supply chain can be detected early on. Since companies can examine various scenarios before these even occur, they can respond proactively instead of reactively. „How will a natural catastrophe in a certain region impact the availability and prices of goods?“ or: „How will the sales of my products be affected if the weather forecast for the summer is poor?“ Questions such as these can be answered with this method.

## PRESCRIPTIVE ANALYTICS

Prescriptive Analytics uses methods such as mathematical optimization, algorithms as well as the use of solvers and machine learning in order to **run through complex scenarios and make optimal supply chain decisions**. It has the job of specifying decision-making options in order to achieve forecasting results and, if necessary, minimize risks and maximize chances in the future. Companies obtain **specific instructions on which measures should be taken** in order to prevent major supply chain disruptions, for instance. In this way, the question on where to locate production facilities or warehouses can be answered here, but route scheduling for sustainable logistics can also be determined.

Diagram. 003 Types of analytics with supply chain examples



# WHAT WILL SUPPLY CHAIN ANALYTICS LOOK LIKE IN THE FUTURE?

Advanced analytics supports predictive and prescriptive analytics or goes one stage further with AI- supported cognitive analytics.

The steadily increasing digitalization of business processes and procedures in the next few years means that supply chain analytics will be able to draw from an ever larger pool of data. Big Data, Data Mining and the Internet of Things will be deployed more intensively in procurement, production and logistics and thus considerably increasing the amount of qualified data along the entire supply chain.

In order to transform this ever increasing amount of data into valuable insights which can help to improve decision-making and minimize risks, there will be another analytics category alongside the increased deployment of predictive and prescriptive analytics - **cognitive analytics**.

**Cognitive Analytics** is based on **Artificial Intelligence (AI)** in order to think and act like humans and therefore help to answer complex questions. Furthermore, AI can, within a short time, read, understand, correlate and interpret a vast amount of structured and unstructured data from various sources with the aid of Deep Learning and Machine Learning. This can considerably reduce the work involved in creating analyses and reports on which decisions and guidelines are based.

## OPTANO PREDICTIVE BLUEPRINT - PREDICTION MEETS PLANNING

Good data is the optimal basis for the best prescriptive analytics results. As a machine learning (ML) feature, OPTANO's Predictive Blueprint allows predictions to be trained and regression analyses to be performed, with no programming knowledge necessary.

By deploying OPTANO, we can refer directly to the results of our predictive analytics in the field of prescriptive analytics, i.e. implement optimization models to plan the best decisions. By doing so, optimal planning is based on the best possible prediction using insights from the past.

In other words: with the OPTANO Predictive Blueprint we can learn from the past and extrapolate the future.

# WHAT ARE THE ADVANTAGES OF SUPPLY CHAIN ANALYTICS?

Supply chain resilience and efficiency determine the success of a company. Supply Chain Analytics can support companies in both areas.

As we have already established, the advantages of supply chain analytics guarantee companies efficiency and sustainability. Data analytics can help in every link of the supply chain in which patterns are identified and insights can be gained. Optimal decisions which have a positive effect on the **overall profitability** of a company, can therefore be made fast.

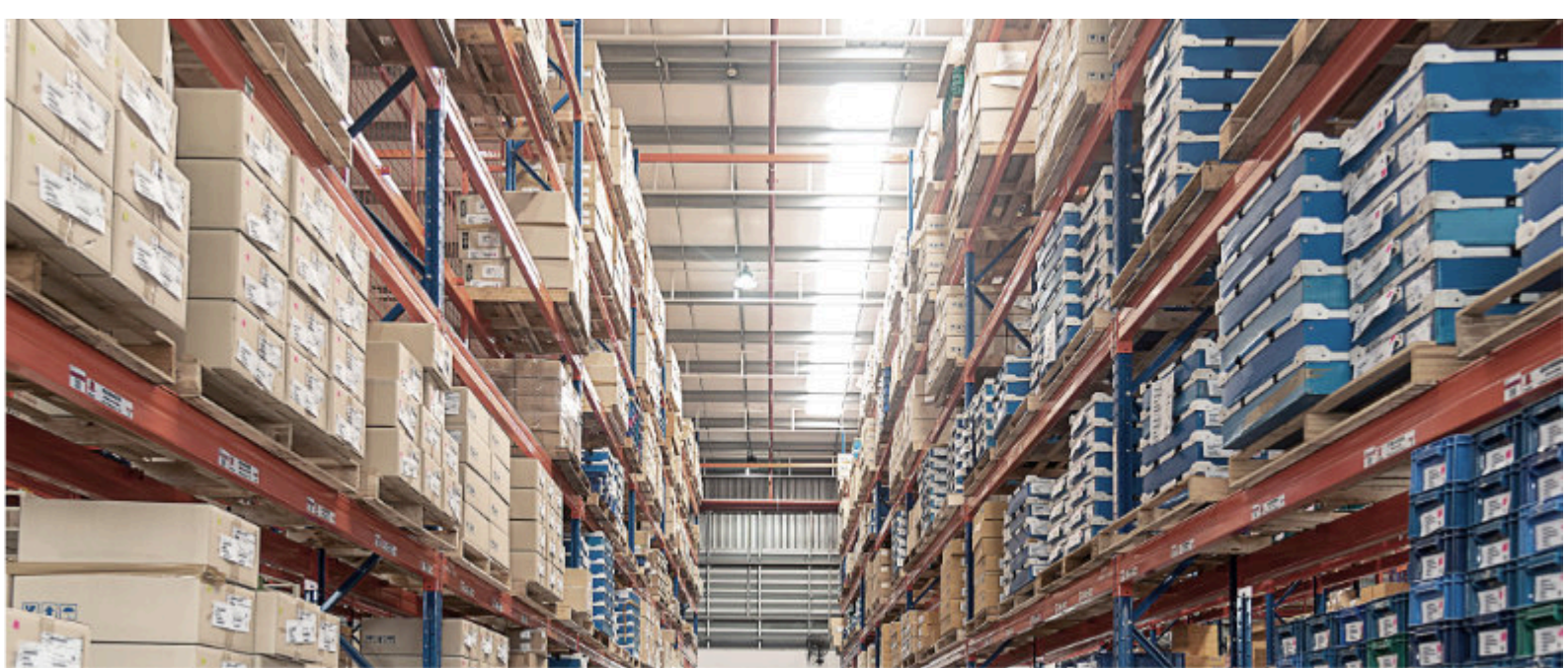
With the analytics results in the form of dashboards, graphs and reports, the opportunities to improve processes can be identified. **Supply bottlenecks** can therefore be **avoided** and **delays in delivery** can be **reduced**.

The analytics results can help companies to optimize their **resource deployment** and **improve** productivity. This, in turn, leads to a reduction in costs.

By analyzing customer data, supply chain analytics enables a company to make better **demand forecasts** and identify the KPIs for **optimal storage**.

Perhaps the most valuable advantage of supply chain analytics, however, is that it can **identify risks** in the future as these often have major effects on the overall result.

**To sum up:** Companies can make optimal decisions if they can resort to detailed supply chain analytics. Without advanced analytics such as prescriptive analytics, many decisions are left to chance or are based on far less conclusive historic data.





# THE RIGHT SOFTWARE FOR DEPLOYING ANALYTICS

Companies should consider several important aspects when it comes to choosing the right software for supply chain analytics.

Advanced analytics software goes beyond reporting features and includes those described previously, such as prescriptive and cognitive analytics. These are of particular value to companies which spend millions within their supply chains every year and for whom a lot is at stake in the event of disruption. However, smaller companies can also benefit from deploying supply chain analytics in view of increased costs.

Companies should opt for an application which generates reliable results and which is suited to their business operations and processes. Only then can they make use of the many advantages which high-performance supply chain analytics offers.

## SUPPLY CHAIN PLANNING WITH OPTANO

OPTANO offers innovative solutions with which supply chain planning processes become efficient and flexible. By deploying mathematical optimization, businesses can plan faster, better and more easily. With prescriptive analytics and solvers, thousands of what-if scenarios can be analyzed. The result: recommendations for action which maximize supply chain performance with regard to the prescribed business objectives.

Visit us at [www.optano.com](http://www.optano.com) and discover how we can take your planning to the next level.



## 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 how mathematical optimization can benefit your company? We can 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](http://www.optano.com) and find out how we can take your planning to the next level together.

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