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# 7 Ways Advanced Analytics Will Improve Manufacturing



## Introduction.

Innovation is an important part of accelerating business processes and investing in the future of our organizations. For some, it can mean evaluating methodologies and processes and for others it's updating our tools and modernizing. However you choose to approach it, analytics are a great way to find patterns and gain insights that sometimes get hidden by our data volume or our data quality. Advanced Analytics are available for you at any stage of your analytics journey, and the cases below are seven ways they will improve your business.

### #1

## Explore and Visualize Data to Aid Decision Making and Planning.

Google 'Decision Analytics' and the results are sparse. Overall, we understand decision analytics to be a quantitative, visual approach to evaluating our business challenges. The idea isn't just theoretical anymore, adding visualization is the ideal starting point in analytics maturity. The ability to have a graphical representation of your business options through the use of decision trees, and graphs and clusters offers simulation and scenario analysis that can give your business an edge. Too many of us suffer by making necessary but capricious decisions or are overloaded with 'analysis paralysis'. The benefits of adding exploration and visualization is plenty. Democratization will allow business users, not just analysts or data scientists, the ability to collect insights and find patterns with or without any knowledge of coding. Furthermore, a tool that allows greater exploration into your data can be a valuable addition to your planning process. Better yet, the solution that offers the intelligence to select champion models can provide you with additional confidence behind your actions.

### #2

## Create Accurate, Automated and Scalable Demand Plans.

Providing Demand and Inventory Planners visibility to demand shifts allows upstream suppliers and production time to order and produce materials to improve fill rates. Since rate of change is more rapid, having the capability of real time inventory visibility and alerts is critical at the granular level of SKU/location planning. You can avoid out-of-stock scenarios, over stock scenarios, and improve sales and customer satisfaction all by having good demand planning.

Do not rely on using shipment data alone to forecast your demand as it causes a lag when there is a level shift in consumption. Consumption data (like Point of Sale) forecasts should be provided in near real time to upstream manufacturers, logistics providers (trucks and drivers), warehouse managers (labor and space), marketing (what to promote and when) and executive management (revenue and financial planning). Linking a series of multiple causal models (POS and Shipments) will measure the impact of marketing mix strategies and ensure on time delivery and higher fill rates on the supply chain.

External data can also be used to enhance predictive models that better reflect your current environment. These include weather, social media information, epidemiological information, or macro-economic trends by region. These external factors will allow you to better capture trends and behaviors. This can provide a large enough sample to include sentiment analysis and text mining in the company's models to increase predictive accuracy. The idea is to test and include any factors that increase the predictive power of the model.

## #3

### **Reoptimize your Supply Chain.**

Reoptimizing supply chain networks under COVID-19 is the need to reflect changed logistics, vendors, suppliers, routes, costs, and fill rates (to mention a few). Deciding which products should be direct shipped, cross docked, rationalized, buffered, centralized, decentralized, etc. – is an enormous task. It is an even bigger task dealing with disruptions to the supply chain from local embargoes, the failure of vendors to stay in business, lengthy shutdowns, and extended stock out periods. Models that include real time 'what-if' scenario planning and model optimization help to re-plan your supply chain more effectively and more often based on real time data.

## #4

### **Use Machine Learning and Artificial Intelligence to Increase Forecast Accuracy, Automation and Scalability.**

The so-called 80/20 rule states that analysts spend 80% of their time organizing data and only 20% of their time analyzing it. The best way to address this conundrum is to automate many of the tedious processes associated with finding and cleansing data. Leveraging reporting tools that rely on real-time data so that you can pull reports quickly, and easily will further resolve the 80/20 issue and better yet automatically create and select the champion models. This automation allows as many as 90% of forecasts created not requiring human intervention, hence improving productivity. The remaining products may require review and adjustment. It allows data scientists to focus their efforts on where their experience and knowledge is invaluable, and not spend time on disparate spreadsheets and manual efforts. Many solutions will claim to offer automation, machine learning and artificial intelligence that detect patterns and simulation comparisons, but few truly do. Machine learning and Artificial Intelligence will help you with your strategic decision making and planning to best identify areas of past success and predict for the future.

## #5

### **Plan and Optimize for a Remote Workforce.**

COVID-19 turned workforce planning upside down. Remote workers are currently discussing return strategies and if they will include a hybrid model of remote and office stations. On-site employees are seeing shifts in the mix and volume of activities and the time required to complete them. Benefit from forecasting and workforce management solutions that can update in real time, include casual data such as weather, trends and factors that would increase or decrease demand to ensure you're safe and prepared for your employee and customers' needs. This is not only a logistics issue, it impacts staff morale, productivity, customer satisfaction and safety.

## #6

### Eliminate Silos, Improve Collaboration.

Collaboration across the demand and supply chain is critical to adapting quickly. Demand plans are often reviewed by multiple stakeholders across the demand and supply chains prior to any adjustment and consensus. This can be very time consuming and disorganized as participants in the process create and share their own spreadsheets. The solution is to use a consensus workbench where everyone can access the current forecast, suggest changes, and collaborate in the consensus and approval process, ideal for remote workers.

## #7

### Understand Profitability and Planning.

In the COVID-19 era, forecast accuracy is not enough. Companies must prove that the forecasts and decisions made will meet the company's financial targets. The solution is to allow analysts, stakeholders and decision makers to calculate what the revenues, profits and return on investment will be with a specific forecast or set of forecasts. If this calculation shows the forecast misses important financial targets, then testing adjustments to the plan and scenario analysis to improve the expected financial outcome is recommended. This capability is a lifeline in a world where liquidity is under pressure, and companies need analytic driven financially positive responses to level shifts in demand, and supply chain disruption.

## The Power of the Partner



**CT Global Solutions** is a strategic SAS partner that helps turn your data into profits. A gold alliance partner for nearly 20 years, CT Global has demonstrated domain expertise in profit analytics, decision analytics, and demand and supply planning optimization. CT Global puts SAS to work and amplifies its value to MAKE EVERY DECISION COUNT.

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