

BIG DATA ANALYTICS IN SUPPLIERS MANAGEMENT

The ROI of implementing Big Data analytics in daily supply management operations

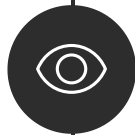


IDAS - International Delivery Assurance Services
<https://idas.ai> | sales@idas.ai

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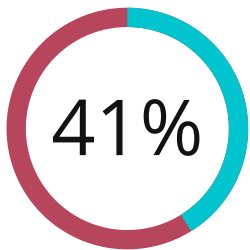
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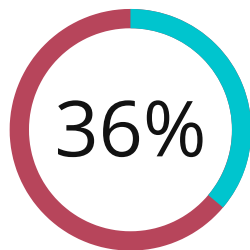
The Year 2020

has been in many respects the year of the supply chain, as all aspects of the function have been exposed and challenged and few businesses have emerged on affected. As we move through the myriad of 2020 supply disruptions, we understand that procurement has a supplier data problem, the side effects of which are **costly and far-reaching**.

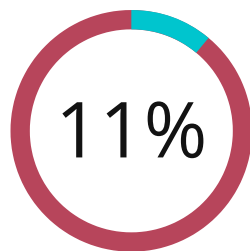
As supply risk continue, effective suppliers relationship management and assurance becomes even more challenging, as can be seen by recent 2021 research findings:



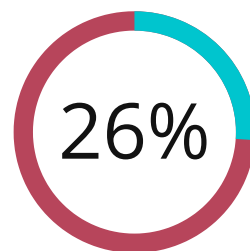
of firms reported needing to **expedite shipping** to keep critical supply lines flowing



losing revenue due to supply shortages



realizing brand damages directly resulting from **supplier issues**



Only 26% can **predict risks** at their supply base

*Per the Deloitte Global 2021 Chief Procurement Officer Survey

So, what do we have to look forward and how can supply chain and procurement executives prepare for success?

The solution might be found in investing time and resources to make sure that supply chain and procurement teams are empowered by a cleansed, harmonized, and enriched **big data** foundation.

Big data is one of the most commonly discussed topics today, and many companies are attentively monitoring the evolution of this trend. Several studies have shown that managers are able to make the best decisions when armed with data and tools to gather insight. Researches report that a **15-20% increase in ROI** can be achieved by introducing big data to enterprises' business analytics.

Traditionally, purchasing and supply management (PSM) has strongly relied on data management, as procurement managers need to dispose of, clean, and update data of different natures to compare suppliers' performance and **20% to 50% of working time** in procurement is related to searching for information Accordingly.

Big data analytics have obvious applications and **represents a new era in the PSM field** as they link and aggregate all relevant information, thereby facilitating and speeding up strategic and operational procurement activities significantly, and are a critical source of meaningful information that can help supply chain stakeholders to gain improved insights and gain a competitive advantage and maximizing speed and visibility, improving supply chain relationships, and enhancing supply chain agility.

Background

However, despite the relevance of data management, the PSM field has been relatively slow to identify the potential role of new technologies and businesses have been less quick to implement big data analytics in PSM than in other areas, such as marketing or manufacturing.

Per a CPO: "Data have always been out there. Companies started to accumulate the data long ago, so the term 'big data' does not have a completely new meaning. However, in the last few years, the mentality of the buyer has changed; now he/she is aware of the fact that the data at his/her disposal can be employed to increase the efficiency of the procurement activity. In the past, due to a lack of technology, it was unthinkable to process the data. Today, it becomes possible, and several opportunities arise in the procurement process as well as in other departments."

*Increasing the effectiveness of procurement decisions: The value of big data in the procurement process Antonella M. Moretto, *, Stefano Ronchia and Andrea S. Patruccob

"Few companies, however, have been able to apply... the "big analytics" techniques that could transform the way they define and manage their supply chains. In our view, the full impact of big data ... is restrained by two major challenges. First, there is a lack of capabilities. Supply chain managers-even those with a high degree of technical skill-have little or no experience with the data analysis techniques used by data scientists. As a result, they often lack the vision to see what might be possible with big data analytics. Second (and perhaps more significantly), most companies lack a structured process to explore, evaluate and capture big data opportunities in their supply chains."

*Big data and the supply chain: The big-supply-chain analytics landscape (Part 1)
- Mckinsey February 16, 2021

But once applying these technologies...

"High performers are 4-5 times more likely to have fully deployed advanced analytics/visualization, ... have fully deployed predictive analytics capabilities (12% vs. 0% for others), and are 18x more likely to have fully deployed AI/cognitive capabilities ...

Strong digital capabilities can help Procurement organizations improve data visibility and the ability to collaborate/synchronize with suppliers, enabling greater agility both within these organizations and across the extended supply networks. CPOs can work toward building use cases for the Internet of Things, 5G, blockchain, control towers, and collaborative workflows enabled by AI/machine learning to up their digital game in these areas."

*Per the Deloitte Global 2021 Chief Procurement Officer Survey

In the next chapter we will look at 2 examples of how big data can be used in the daily procurement teams

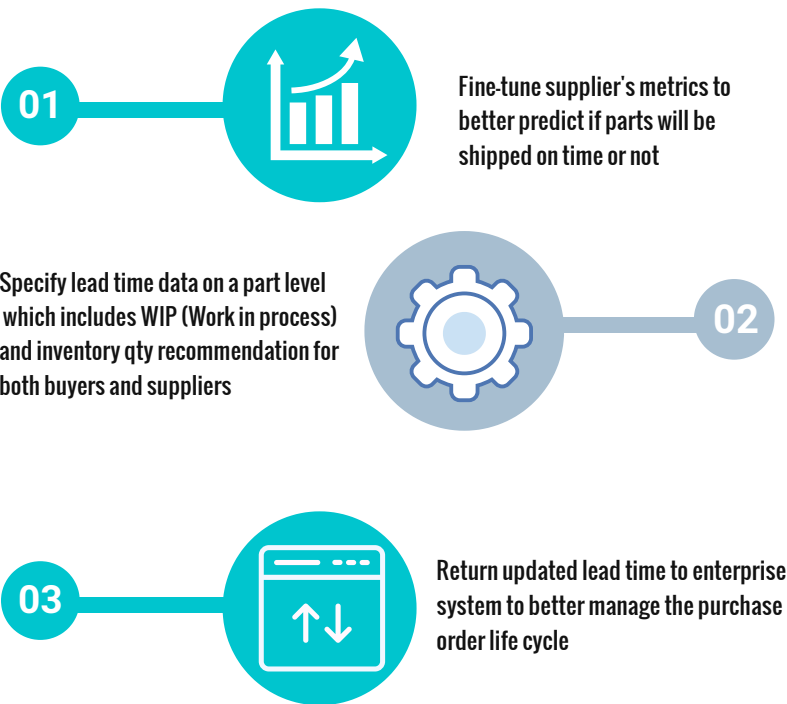
Suppliers Lead Time Analysis

In most enterprise purchasing systems, supplier's lead times are entered upon supplier agreement signature and are kept as static data on a part level which is not updated frequently or at all.

Since supplier lead time plays a critical role in the timing and sizing of purchase order decisions, many purchasing professionals have recognized this importance, and are looking to accurately predict lead times and to develop strategies for coping with problems created by lead time variations.

As part of our ongoing work to develop prediction algorithms based on advanced analytical tools such as machine learning (ML) to help the supply chain organization better manage their suppliers, we've developed a module that predicts the lead time variation % of a supplier manufactured part compared to the current static lead time maintained in the enterprise purchasing system. This module analysis big data captured from various systems:

Blending this wide range of information and sources helps build an accurate module and after training it, It helps build an accurate prediction system, which highlights the following to the supply chain organization:



System I | Purchasing information from the enterprise system



System II | Goods received information from the enterprise system



System III | Daily supplier data captured in portal : late lines, late qty



System IV | Supplier portal inputs such as date difference in supplier PO confirmations

Suppliers Lead Time Analysis

Supplier Portal - Suppliers can upload manufacturing data including lead time per part

Inventory Qty: 250	WIP: 0	Lead time In Days: 90
Confirm Delivery?	Confirm Type	
No <input type="radio"/> Shipped <input type="radio"/> Awaiting		
Inventory Qty: 1000	WIP: 100	Lead time In Days: 75
Confirm Delivery?	Confirm Type	
No <input type="radio"/> Shipped <input type="radio"/> Awaiting	Need Date <input type="button" value="v"/>	

Work Flow - Lead time data gets analyzed with ML and approved by relevant internal managers, before being updated back in ERP

#	P/N	ERP LT (Weeks)	Supplier LT (Weeks)	ML Calculated Deviation%	Approver 2	Approver 1	Approver 1 Name	Approver 1 Date
<input type="checkbox"/> 1	B123A0101-00	16	36	0.000				
<input type="checkbox"/> 2	B31A0032-100	24	13	29.086				
<input checked="" type="checkbox"/> 3	DD533374-1001	12	14	0.000	Approved		Together Support	06 Jan, 2021

Predicting suppliers' late deliveries

The use of advanced prediction algorithms to foresee your supplier's on-time parts delivery problems and not after they shut your lines down has a great positive impact on OTD performance.

These prediction systems help set expectations and give supply chain managers the tools to make the right decisions for on-time deliveries, eliminate hidden factory costs of late parts, redeploy labor from expediting to value-added activities, and focus on growth.

We've based our PPA (parts prediction algorithm) on the analysis of 4 suppliers data inputs from various systems:



Various data inputs :



Historical inbound shipments Data from the ERP system

Manufacturing data via the suppliers portal



PO confirmations in the supplier portal

Supplier portal updating trends



After studying and analyzing the big data gathered from the above systems, the algorithm provides a scoring system that is adjusted on a supplier level per the engagement level allocated to each supplier.

The score is grouped into 3 main levels:

Red < 65

Parts are late or will be late in the next 90 days - Need immediate attention



Yellow > 65 < 85

Parts have a chance to be late in the next 90 days - Need some attention



Green > 85

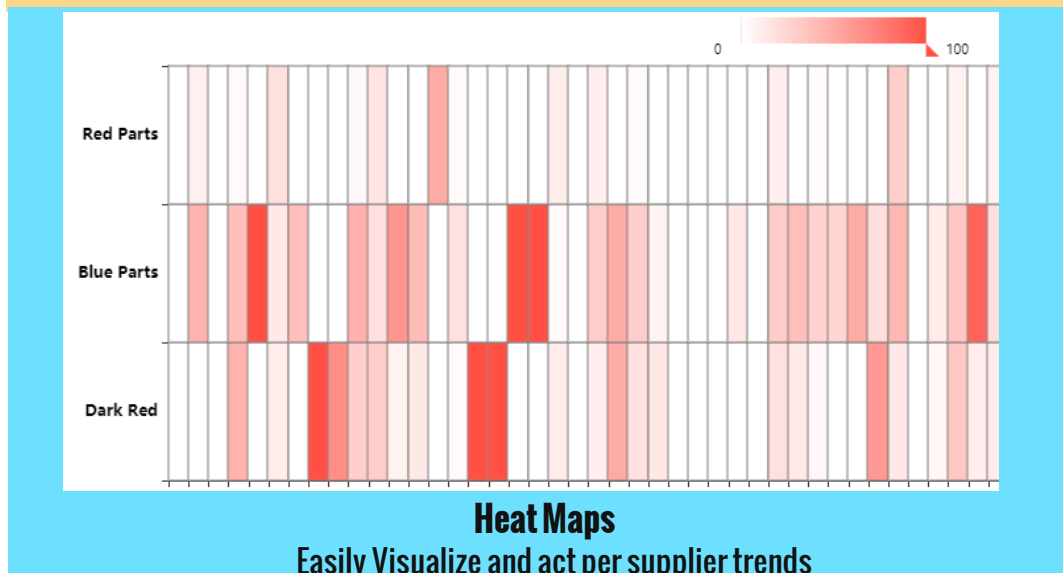
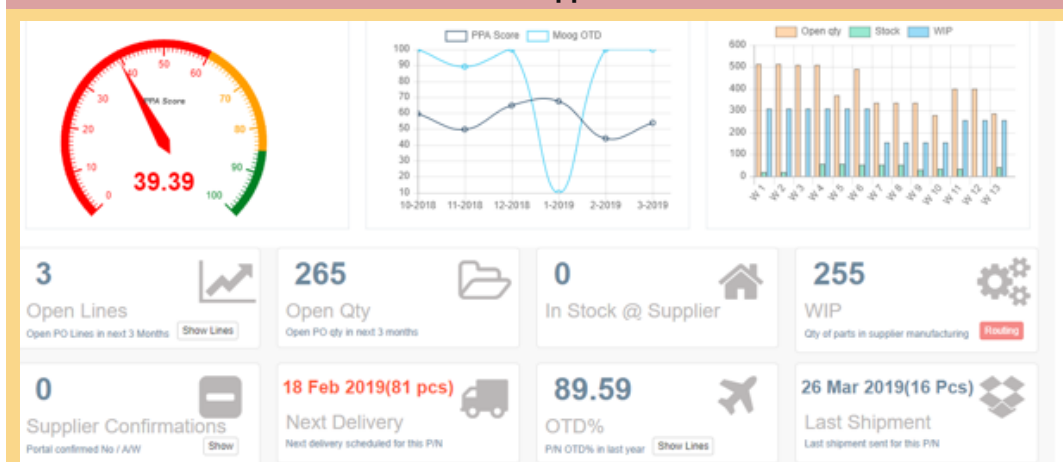
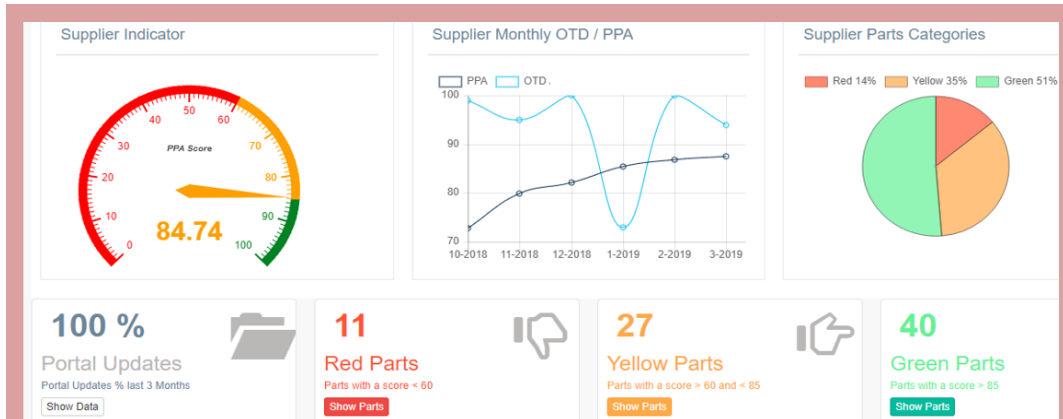
Parts will be on time in the next 90 days



This prediction system gives an indicator for manufactured parts at suppliers and gives supply chain managers the tools to communicate and make the right decisions to achieve on-time deliveries, eliminate hidden factory costs of late parts, redeploy labor from expediting to value-added activities and focus on growth and not resolving delivery issues.

This is of huge potential benefit to manufacturing companies, especially those that rely on just-in-time component and materials delivery, and will improve OTD rates and assemble lines shutdowns with the costs associated with such problems.

Predicting suppliers' late deliveries



Improve Your Bottom Line

Big data analytics is playing an instrumental role in improving suppliers management. It resolves several pain points at strategic, operational, and tactical levels. Big data is making an impact on all supply chain activities. It ranges from improving delivery times to identifying ways to reduce the communication gap between manufacturers and suppliers.

A recent survey revealed a staggering number of critical issues that organizations are dealing with as a result of poor supplier data. Probably the most shocking result was that 93% of procurement and supply chain leaders had experienced adverse effects of misinformation about their suppliers, and nearly half (47%) experience such negative effects on a regular basis.

consequences include wasted time (63%), delays in projects (47%), and worse, terminated supplier relationships.

Here are five ways big data can really improve your bottom line:

01

Fact-based decision-making

02

Supplier knowledge

03

Suppliers' performance

04

Increase Savings

05

Predictive Analysis



Improve Your Bottom Line

1. Fact-based decision-making:

With Big Data, fact-based decision-making has a chance to become ubiquitous reality. We all know that critical business issues are often discussed anecdotally. With a Big Data approach, procurement executives could consistently ask for data-oriented evidence for all major decisions and reported business issues, such as quality problems.

2. Supplier knowledge:

In the past, organizations faced laborious processes that took several weeks to gather internal and structural data from the operations and transactions of the company and its partners. But today, at a significant speed, in real-time, in many cases, all of the diverse structural, nonstructural, internal, and external data generated from automated processes are made available to these organizations. Basing supplier selection, monitoring, and control on more data and information will improve procurement performance at the supplier level. As mentioned above, the main benefit is cost reduction.

3. Suppliers' performance:

The adoption of big data in the procurement process improves suppliers' performance mainly in terms of cost but also potentially in terms of time, quality, innovation, flexibility, and sustainability

4. Increase Savings by Learning More About

Suppliers: Ideally, you would constantly monitor each supplier to verify that their operational performance is up to par, their bottom line is stable and healthy, their product is of consistent quality, and their sourcing meets compliance standards. Ongoing supplier analysis can capture every detail, flag every anomaly, and verify every transaction to show you whether your suppliers are performing as expected. This will help you determine how much you stand to save or risk by switching to another supplier or ordering from a different region of the world.

5. Predictive Analysis:

One of the biggest advantages of embracing big data analytics within your organization is that it creates the ability to become predictive rather than reactive so activities from strategizing for supply, the selection of suppliers, the management of supplier relationships, and ordering and expedition - has been claimed to have huge potential in benefiting from big data (BD) . A recent Hackett report found that world-class organizations that take advantage of procurement technology are more efficient, with 22% lower labor costs and 29% fewer full-time equivalents (FTEs) than typical organizations.

About Us

At IDAS, we're always working on thought leadership pieces to help us all prepare for the future. Join our monthly webinars to stay ahead of the curve in the supplier business and contact us today to learn more on the ROI business case and the top benefits you can gain through advanced supplier collaboration with IDAS.

To know more information on how can IDAS help you implement the latest suppliers management methodology and technology, like IDAS advanced supplier portal and parts prediction application based on ML (machine learning) and AI (artificial intelligence), click below to schedule a demo:

SCHEDULE YOUR FREE DEMO

Want to learn more about how we can help your suppliers managements needs? Schedule a demo with our customer success team to learn more.

[Schedule Demo](#)



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