Big Data Analytics in Procurement

IN THIS ARTICLE

Quick: What's your company's biggest product? The answer is probably not on the manufacturing floor or in the service department.

Whether you're a manufacturer, reseller, or service company, it's information that's being produced in massive quantities.

Every one of your transactions, and all the activity related to them, generates a trove of Big Data you can mine for insights.

Insights you can (and should) use to optimize everything from purchase order approval workflows to strategic sourcing to long-term financial planning.

For procurement organizations around the globe, the challenge has become finding ways to successfully leverage big data analytics to improve decision-making.

With help from technology, procurement leaders are moving procurement toward a data-centric approach and culture.

This drive is in pursuit of not just cost savings, but greater value from procurement processes while reducing risk, strengthening supplier relationships, and enhancing competitive advantage.

What is Big Data Analytics?

Big data analytics refers to the complex process of examining large, varied data sets—or 'big data'—to uncover hidden patterns, unknown correlations, market trends, customer preferences, and other useful insights.

The "*big*" in "Big Data" refers to both the depth and breadth of information available for analysis.

This data is both unstructured and structured and comes from both internal and external sources:

Internal Data covers the information generated, collected, and organized "in house" by an organization. This can include:

- Transactional data (which may also draw on related information provided by connected accounting or enterprise resource planning (ERP) packages)
- Supplier-side data
- Financial information collected locally from financial records (e.g., the general ledger) or spreadsheets and databases provided by business units outside procurement and accounting (e.g., marketing, sales, etc.)

External Data, as the name implies, comes from outside the organization. Sources include:

- Social media content and other publicly available information (e.g.,

Facebook, LinkedIn, Twitter, etc.)

- Stock market and currency information
- Data provided by vendors
- Market Intelligence
- Industry-specific information, such as credit reports, market indices, and supplier codes

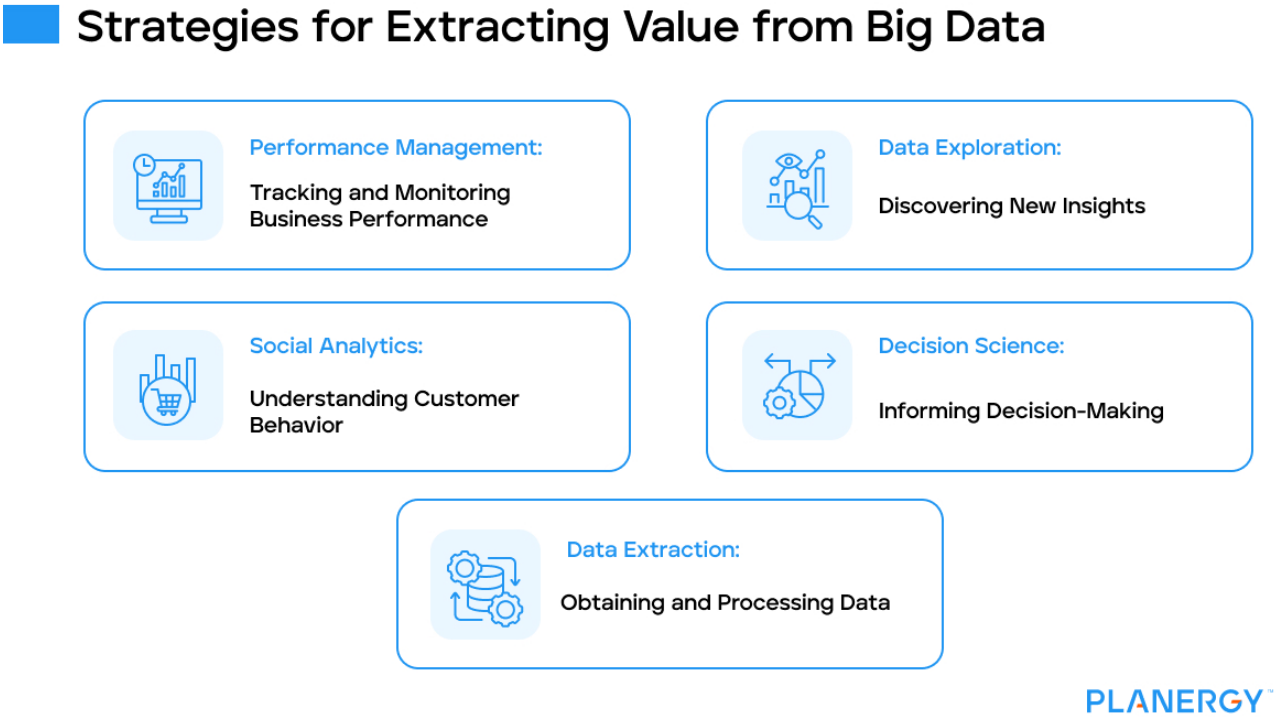
Big data analytics involves using advanced analytic techniques against enormous volumes of data, which often come from different sources and are available in various formats.

It provides a wealth of information that organizations can use to make informed corporate decisions, improve operational efficiency, create more effective marketing strategies, and ultimately, drive growth and profitability.

Strategies for Extracting Value from Big Data

There are four key strategies that businesses can adopt to extract value from big data:

1. Performance Management
2. Data Exploration
3. Social Analytics
4. Decision Science



1. ## Performance Management: Tracking and Monitoring Business Performance

   Performance management is a strategy that uses big data to monitor and manage a business's performance.

   This includes tracking key performance indicators (KPIs), identifying trends, and monitoring progress towards specific goals.

   By analyzing historical data, businesses can make more informed decisions and improve their overall performance.

2. ## Data Exploration: Discovering New Insights

   Data exploration is a strategy that involves digging into big data to discover new insights.

   This includes finding hidden patterns, relationships, and correlations that were previously unknown.

   With the right skills and technology, procurement professionals can

extract valuable insights from high volumes of data at a high velocity.

3. ### Social Analytics: Understanding Customer Behavior

   Social analytics is a strategy that involves analyzing data from social media platforms to understand customer behavior and sentiment.

   This can provide valuable insights into customer preferences and behaviors, informing marketing and customer service strategies.

4. ### Decision Science: Informing Decision-Making

   Decision science is a strategy that involves using big data to model and simulate various scenarios to inform decision-making.

   This can be particularly valuable in complex and uncertain situations, helping businesses define their goals and objectives, identify data sources, and build effective strategies.

5. ### Data Extraction: Obtaining and Processing Data

   Data extraction is a crucial part of big data analytics.

   It involves obtaining data from multiple sources and moving it to a new destination designed to support online analytical processing.

   Cleaning and preprocessing large datasets ensure accurate analysis, while effective visualization techniques aid in communicating complex results.

Big Data in Procurement

In procurement, big data analytics can be a game-changer.

Organizations can leverage big data to gain deeper insights into their supply

chain, improve decision-making, optimize processes, and gain a competitive advantage.

Organizations collect various data points in procurement, including supplier performance data, purchase order data, invoice data, and market data.

They collect this data through various means, including ERP systems, procurement software, and external sources.

By applying analytical tools and techniques to this data—like machine learning algorithms, predictive analytics for procurement, and data visualization tools—organizations can transform raw data into actionable insights.

For example, they might identify patterns in supplier performance that can inform supplier selection, or they might predict future price trends based on historical data.

Sifting through all of this information to find the insights you're looking for requires the use of Big Data analytics.

Big Data analytics is one of many procurement analytics tools growing in importance.

More and more chief procurement officers (CPOs) and the procurement teams they lead have come to rely on data analytics, automated spend analysis, and other data driven approaches.

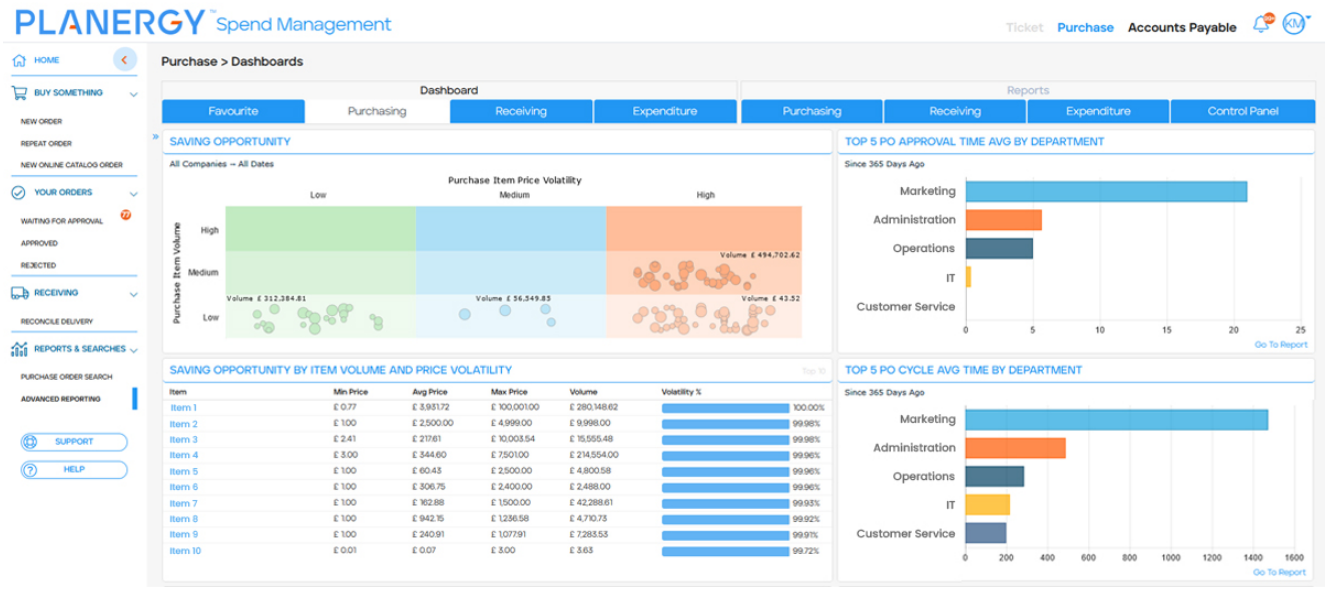
This helps to guide decision making and development of efficient and accurate procurement processes.

As these tools become more intuitive and ubiquitous, analysis is no longer solely the domain of data scientists but a tool accessible to category managers, decision-makers, and other key members of the procurement function.

Digital procurement depends on data analysis to drive better decisions, simplify supply chain management, and, ultimately, push the organization as a whole to greater levels of success.

User friendly tools and cloud-based tools, like PLANERGY's procure-to-pay software, deliver context specific data analysis using AI and automation.

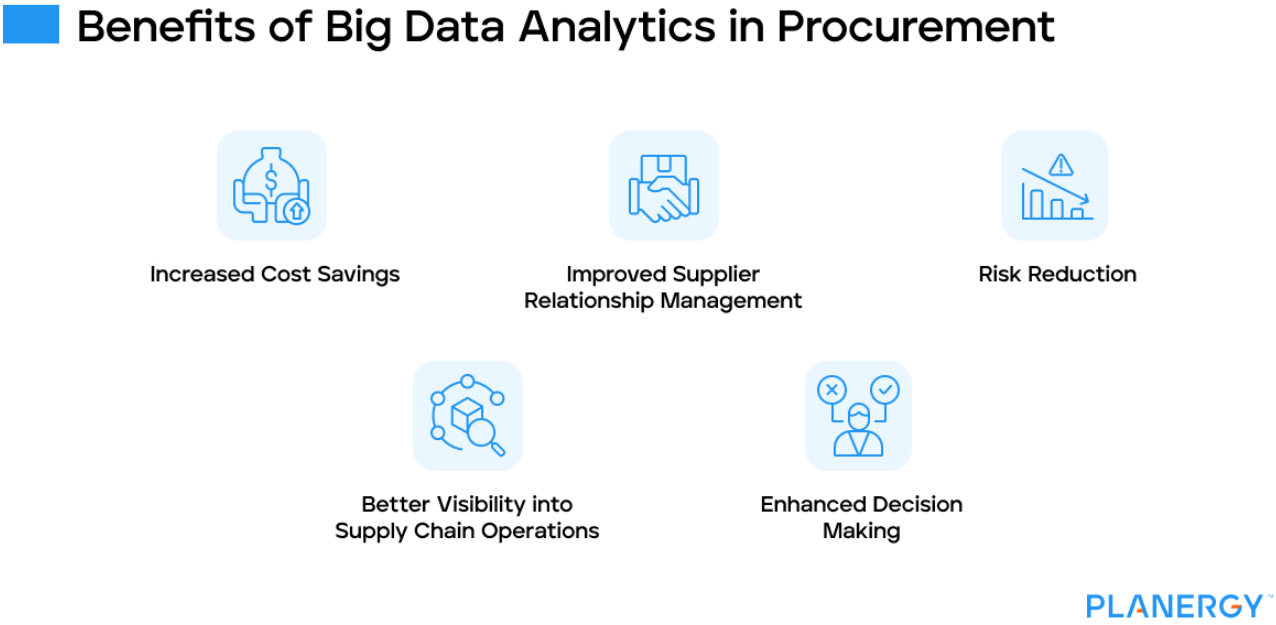
This includes procurement KPIs, spend analysis, accounts payable KPIs, along with customizable dashboards and many other deep reporting and analysis options. This delivers real-time insights in digestible formats.



Big Data spend analysis taps into the power of tools like artificial intelligence and process automation to exploit the true potential of diverse data sources and deliver cost savings.

Benefits of Big Data Analytics in Procurement

When done correctly, the benefits of big data analytics in procurement are significant. They include:



- ## Increased Cost Savings

  By analyzing spend data and patterns, organizations can identify opportunities for cost reduction.

  For example, they might discover that they are overpaying for certain goods or services or that they could save money by consolidating suppliers.

  Through predictive analytics, organizations can also forecast future costs and budget more effectively.

- ## Improved Supplier Relationship Management

  Big data analytics can provide insights into supplier performance, enabling organizations to manage their suppliers more effectively.

  This includes identifying which suppliers are consistently delivering high-quality products on time and which suppliers are underperforming.

  With these insights, organizations can make more informed decisions about which suppliers to continue doing business with, and improve these

supplier relationships, and which suppliers to replace potentially.

Risk Reduction

By analyzing risk indicators, organizations can identify potential risks in their supply chain and take proactive measures to mitigate them.

This could include risks related to supplier reliability, geopolitical factors, or commodity prices.

With early warning of potential risks, organizations can take steps to mitigate them, such as diversifying their supplier base or hedging against price increases.

Big Data analytics can help you achieve optimal risk management in quite a few ways, including:

- Smarter contract management and more strategic supplier relationship management, driven by predictive analysis of supply and demand.
- Elimination of value leaks such as rogue spend and invoice fraud by capturing all transaction data inside a closed system, where it can be analyzed for aberrations, processes developed or refined to reduce risk by improving compliance.
- Real-time vendor data management.
    - On-demand comparison of predicted and actual spend.
    - Deep, detailed reporting that allows for direct comparison of each transaction’s data to historical trends, specific supplier performance and compliance as compared to ongoing trends, etc.
    - On-demand adjustments of the supply chain to minimize risk from reputation, compliance, or performance issues and avoid any disruptions to production.

- ### Better Visibility into Supply Chain Operations

  Big data can provide a wealth of information about supply chain operations, giving organizations greater visibility and control.

  This includes real-time information about where goods are in the supply chain, how long they have been there, and when they are expected to arrive at their destination.

  With this information, organizations can identify bottlenecks, optimize logistics, and improve overall supply chain efficiency.

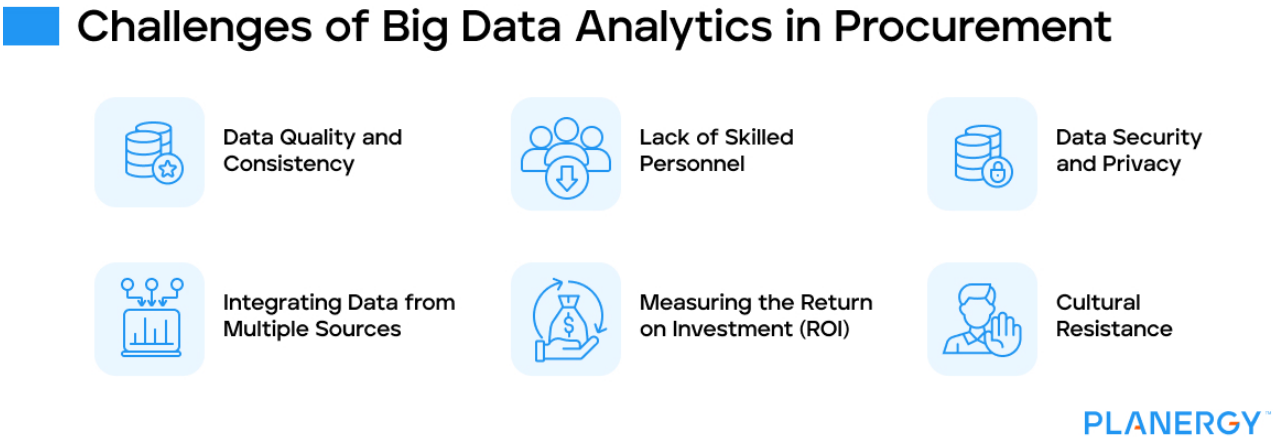
- ### Enhanced Decision Making

  With the right analytics tools, organizations can turn raw data into actionable insights, informing everything from strategic planning to day-to-day operations.

  This can lead to more data-driven decisions, more effective strategies, and, ultimately, a more successful procurement function.

Challenges of Big Data Analytics in Procurement

Despite its potential, big data analytics in procurement has challenges.



Data Quality and Consistency

Procurement involves dealing with vast amounts of data from multiple sources, including suppliers, internal departments, and external market research.

This data can often be inconsistent or incomplete, making it difficult to analyze accurately.

In addition, the data may be stored in different formats, further complicating the analysis process.

To overcome this challenge, companies need to implement robust data management and governance strategies.

Lack of Skilled Personnel

Analyzing big data requires specific skills and expertise. It involves not just understanding statistical techniques but also knowing how to apply them to solve business problems.

Unfortunately, there is a shortage of professionals with these skills.

This lack of skilled personnel poses a significant challenge for companies leveraging big data analytics in their procurement processes.

Data Security and Privacy

With the increasing use of big data comes increased concerns about data security and privacy.

Companies must ensure that they protect sensitive information, such as supplier details and pricing data, from cyber threats.

Additionally, they must comply with various data protection regulations, which vary from country to country. Managing these security and privacy concerns can be challenging.

Integrating Data from Multiple Sources

Procurement data often resides in multiple systems, both internal and external.

Integrating this data into a single, unified view can be a complex and time-consuming process.

This is particularly challenging when dealing with legacy systems that may not be compatible with modern data analytics tools.

Measuring the Return on Investment (ROI)

The benefits of big data analytics, such as improved decision-making and increased efficiency, can be difficult to quantify.

As a result, companies may struggle to justify their investment in big data analytics.

Cultural Resistance

There can be resistance to change within organizations, particularly when it involves new technologies like big data analytics.

Overcoming this requires strong leadership and clear communication about the benefits of big data.

Best Practices for Effective Big Data Use

To get the most out of your big data efforts, follow these best practices:

Establish Clear Objectives

What do you hope to achieve with your big data initiative? This could be anything from improving customer service to reducing operational costs.

By setting clear objectives with benchmarks for success, you can ensure that your big data efforts are focused and aligned with your overall business goals.

Ensure Data Quality

Data quality is crucial when it comes to big data. If your data is inaccurate or incomplete, your analyses will be too.

Therefore, it’s important to implement processes to ensure data quality, such as data validation checks and data cleansing procedures.

In addition, you should regularly audit your data to identify and rectify

any quality issues.

Invest in the Right Tools and Technologies

The right tools and technologies can make all the difference in your big data initiatives.

This includes not only big data platforms and analytics tools, but also data visualization tools that can help you interpret and communicate your findings.

When selecting tools and technologies, consider factors such as scalability, ease of use, and integration with your existing systems.

Developed a Skilled Team

Big data requires a unique set of skills, including data science, statistical analysis, and business intelligence.

Building a skilled team will be crucial to your big data success. This might involve hiring new staff, training existing staff, or a combination of both.

Build a Data-Focused Culture

Encourage everyone in the organization to value and use data in their decision-making. Make sure there are plenty of training resources available.

Encourage everyone – not just the key stakeholders – to provide their feedback.

Prioritize Data Security and Privacy

With big data comes big responsibility.

It’s essential to prioritize data security and privacy, ensuring that your data is protected from cyber threats and that you comply with all relevant data protection regulations.

This may involve implementing robust security measures, such as encryption and access controls, and conducting regular security audits.

- ### Continually Monitor and Refind Your Approach

  Finally, remember that effective use of big data is an ongoing process.

  Monitor your progress toward your objectives continuously and be prepared to refine your approach as needed.

  This might involve adjusting your data collection methods, trying out new analytical techniques, or exploring new data sources.

Dive into Big Data Analytics for Big Rewards

It’s time to leave the shallows behind. Big Data analytics can give your procurement department, and the organization it supports, real-time access to the insights needed to achieve competitive advantage, profitability, and innovation in the years ahead.

Take the plunge and start turning your company’s biggest product into more informed decisions and exceptional value.

What’s your goal today?

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