

Artificial Intelligence in Procurement



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Artificial Intelligence (AI) has become a buzzword in the business world, revolutionizing various sectors with its capabilities.

AI refers to computer systems that mimic human intelligence by performing tasks requiring learning, decision-making, and problem-solving.

It's closely related to Machine Learning (ML), a subset of AI that enables machines to learn from data and improve their performance without being

explicitly programmed.

For a more detailed comparison between of artificial intelligence and machine learning, check out this article.

AI and ML have found diverse applications across business functions, including AI in accounts payable and machine learning in finance. But one area where AI is making significant strides is procurement.

Current Status of AI in Procurement

AI has become a staple for everyday life and now AI is transforming the workplace, especially in areas where there are a lot of manual repetitive tasks or data management.

AI is helping turn traditionally manual and labor-intensive procurement processes into efficient, automated workflows.

By categorizing and analyzing procurement spend data, AI identifies patterns, anomalies, and opportunities for cost savings, driving value for the organization.

Companies are leveraging AI and ML to advance beyond spend analytics towards spend reduction and ensuring supplier compliance.

Types of AI Used in Procurement

Different AI technologies are used in procurement, including Natural Language Processing (NLP), Predictive Analytics, and ML.

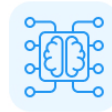
Types of AI Used in Procurement



Natural Language Processing (NLP)



Predictive Analytics



Machine Learning



Robotic Process Automation (RPA)

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• Natural Language Processing (NLP)

Natural Language Processing is a subfield of AI focusing on the interaction between computers and humans through natural language. It enables machines to understand and interpret human language in a valuable way.

In procurement, NLP is used primarily for contract analysis. It can read and understand contractual documents, extract essential elements such as terms, conditions, penalties, and more, and even identify potential risks or anomalies that may not be easily identifiable by humans.

The use of Natural Language Processing is also impacting finance.

• Predictive Analytics

Predictive Analytics uses statistical algorithms and machine learning techniques to analyze historical data and predict future outcomes.

Procurement predictive analytics can forecast demand based on past purchasing patterns, market trends, and other relevant factors. This allows procurement teams to make more informed decisions, better manage inventory, and reduce costs.

Machine Learning

Machine Learning, a subset of AI, enables machines to learn from data and improve their performance over time without being explicitly programmed.

Machine learning algorithms can analyze vast and complex datasets, identify patterns and trends, and make predictions.

In procurement, machine learning can be used to analyze spend data automatically, supplier performance data, market trends, and more. It can help identify cost-saving opportunities, predict supplier risks, and drive strategic decision-making.

PLANERGY uses machine learning in a number of ways, this includes applying it to better automate analysis of spend data to deliver actionable insights.

▪ **Robotic Process Automation (RPA)**

This technology aids in the end-to-end management of supply and demand planning by eliminating silos between departments.

The software makes it easy to manage, deploy, and build software robots capable of automating routine, time-consuming tasks. PLANERGY utilizes RPA to automate standard processes in procure-to-pay, including the purchase order approval process.

A study from Everest Research Group found that RPA in procurement can reduce costs by anywhere from 35% to 65% for onshore delivery operations and 10% to 30% for offshore delivery.

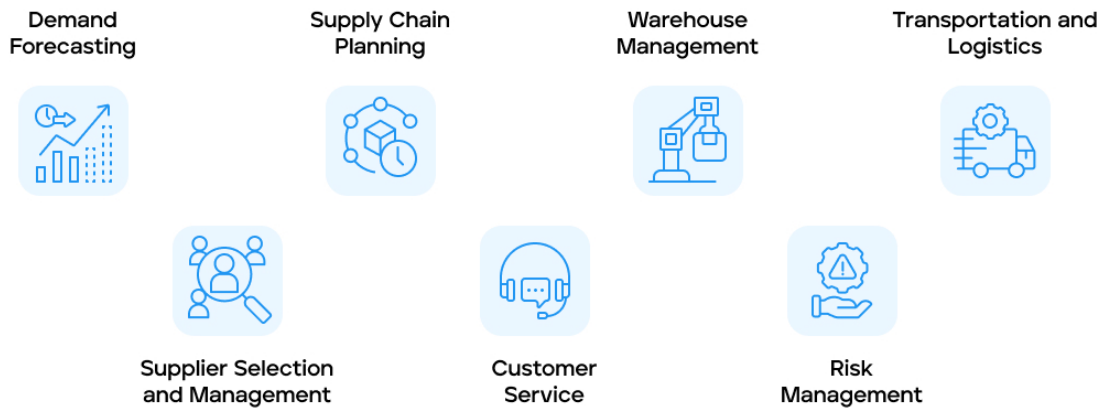
Artificial intelligence may lack the intuition and creativity of humans, but they have speed and accuracy that no human could hope to match when performing repetitive tasks or tearing through oceans of data to find inefficiencies and opportunities.

▪

AI's Role in Supply Chain

AI illuminates the insights hidden in supply chain data, enabling sourcing and procurement teams to validate or clarify their assumptions and inform decisions.

■ AI's Role in Supply Chain



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• Demand Forecasting

Artificial Intelligence can analyze historical data, current trends, and even external factors like weather or local events to provide accurate demand forecasts.

This capability helps companies optimize their inventory, reducing both stockouts and overstock situations.

• Supply Chain Planning

AI can assist in planning and managing resources more efficiently by predicting future demand and supply scenarios. It aids in making informed decisions regarding procurement of materials, production scheduling, and distribution planning.

• **Warehouse Management**

AI-powered robots and automated systems are being used for tasks such as sorting, packing, and transporting goods within a warehouse. This increases efficiency and reduces the risk of human error and injury.

• **Transportation and Logistics**

AI can optimize transportation routes based on various factors such as traffic, fuel costs, and delivery schedules. This leads to reduced costs and improved delivery times.

• **Supplier Selection and Management**

AI can analyze vast amounts of supplier data to identify the best suppliers, negotiate optimal terms, and monitor supplier performance. It can also predict supplier risks and provide early warning signs of potential issues.

• **Customer Service**

AI chatbots and virtual assistants can provide 24/7 customer support, handle routine inquiries, and free up human staff for more complex tasks.

They can also provide personalized product recommendations based on customers' past purchases and browsing behavior.

• **Risk Management**

AI can predict potential risks in the supply chain and vendor management risk - from supplier failures to delivery delays - and suggest mitigation strategies. It can also monitor social media, news, and other sources for potential threats or disruptions.

Applications of AI in Procurement

AI is being used in various aspects of procurement, including streamlining sourcing, automating contract management, and identifying opportunities for cost

savings.

These are also key areas where using AI can improve procurement.

■ Applications of AI in Procurement



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• Invoice Processing Automation

AI can be used to automate the processing of vendor invoices in the procurement process. This process is known as AP Automation and now is the perfect time to implement it if you have not already.

Using technologies like Optical Character Recognition (OCR) and NLP, AI can read and understand invoices, match them with purchase orders, and even flag discrepancies for review. This not only speeds up the invoice processing time but also reduces errors and fraud.

PLANERGY includes best in class AP Automation software that links to the procurement data automatically to perform an automated 3-way match to greatly reduce manual tasks and accuracy in invoice processing.

• Supplier Risk Management

AI can analyze vast amounts of data from various sources to assess supplier risk.

It can monitor news, social media, financial data, and other information to identify potential risks associated with a supplier, such as financial instability, regulatory issues, or negative sentiment.

This allows procurement teams to proactively manage these risks and take action before they impact the supply chain.

▪ **Spend Analysis**

AI can be used to streamline spend analysis and deliver quicker insights. It can analyze procurement spend data to identify things like cost-saving opportunities.

It can categorize spend into different categories, identify patterns and trends, and highlight areas where costs can be reduced.

For example, it might identify that a company is spending a lot on a particular category of goods from multiple suppliers and suggest consolidating the spend with a single supplier for better pricing.

▪ **Contract Analysis**

AI can be used to analyze contractual documents using NLP. It can extract key elements such as terms, conditions, and penalties and highlight any potential risks or anomalies.

This helps procurement teams manage contracts more effectively and ensures compliance with contractual obligations.

▪ **Predictive Analytics**

AI can be used to forecast future demand based on historical purchasing data, market trends, seasonality, and other factors.

This allows procurement teams to plan their purchasing activities more accurately, reducing the risk of overstock or stockout situations.

• **Chatbots for Procurement Assistance**

AI-powered chatbots can assist procurement teams by answering routine queries, helping create purchase orders, and providing real-time insights.

They can interact with users in natural language, learn from past interactions, and even make recommendations based on their learning.

• **Strategic Sourcing**

AI can play a crucial role in strategic sourcing by providing insights into supplier capabilities, market conditions, and pricing trends.

It can analyze vast amounts of data from various sources to identify the best suppliers, negotiate optimal terms, and monitor supplier performance.

AI can also support decision-making by providing predictive analytics, scenario planning, and real-time insights.

• **Cost Reduction Analysis**

AI identifies all possible ways to save your business money, helping to reduce costs and immediately increase cash flow. It provides a proactive and data-driven approach to identifying cost savings opportunities in procurement.

• **Business Impact of Cost Initiatives**

AI can establish how cost initiatives will impact the bottom line, helping businesses select their best cost initiatives.

By leveraging AI, companies can optimize their spending, improve supplier relationships, and ultimately increase their bottom line.

Benefits of AI in Procurement

AI in procurement offers several benefits, including increased efficiency, reduced costs, enhanced supplier relationships, and improved risk management.

■ Benefits of AI in Procurement



Automate Manual Tasks
and Reduce Human Error



Greater Efficiency
in the Procurement
Process



Cost Savings



Better
Decision Making



Risk Management



Vendor
Management

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• Automate Manual Tasks and Reduce Human Error

AI reduces the risk of human error in procurement tasks. For example, it can accurately process invoices, contracts, and other documents, reducing the likelihood of costly mistakes.

• Greater Efficiency in the Procurement Process

Since many routine tasks in procurement, like data entry and invoice processing, can be automated with AI tools, procurement professionals spend more time on value-added tasks rather than those time-consuming manual processes.

• **Cost Savings**

AI can analyze vast amounts of procurement data to identify potential cost-saving opportunities.

This might include spotting patterns in purchasing behavior, identifying overpriced items, or finding opportunities for bulk purchasing discounts to give you a competitive advantage.

• **Better Decision Making**

With its ability to analyze large datasets and generate insights, AI can support better decision-making in procurement. It can help identify the best suppliers, predict future price trends, and make recommendations based on past performance.

• **Risk Management**

AI can help manage risks in procurement by providing early warnings about potential issues. This might include alerts about supplier, contract, or compliance risks.

• **Vendor Management**

AI can improve vendor management by tracking supplier performance and providing real-time feedback. This can help procurement teams manage their relationships with suppliers more effectively.

Challenges of Using AI in Procurement

Despite its benefits, adopting AI in procurement comes with challenges, including data quality issues, integration with existing systems, and resistance to change within the organization.

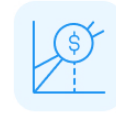
Challenges of Using AI in Procurement



Data Quality and Availability



Integration with Existing Systems



Cost and ROI



Change Management



Data Security and Privacy



Lack of Understanding

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• Data Quality and Availability

AI systems require large amounts of high-quality data to function effectively. However, procurement data can often be fragmented, inconsistent, or incomplete.

This can limit the effectiveness of AI and lead to inaccurate predictions or recommendations.

Having a dedicated software for managing procure-to-pay, like PLANERGY, can ensure the right data is captured and automatically analyzed to give you powerful reporting dashboards and insights.

• Integration with Existing Systems

Integrating AI tools with existing procurement systems can be complex and time-consuming.

It requires significant technical expertise and can disrupt normal operations during implementation.

Implementing a state-of-the-art procurement software, like PLANERGY, that already incorporates AI technology can remove this technical requirement.

• **Cost and ROI**

Implementing AI in procurement can be costly, particularly for small and medium-sized businesses. It can be challenging to demonstrate a clear return on investment, especially in the short term.

• **Change Management**

Introducing AI into procurement processes often requires significant changes to workflows and job roles.

This can lead to resistance and pushback from staff to the planned changes and requires careful change management to ensure successful implementation. A clear change management plan will help with this.

• **Data Security and Privacy**

AI systems often handle sensitive data, raising concerns about data security and privacy. Companies must ensure they have robust measures to protect this data and comply with relevant regulations.

• **Lack of Understanding**

There can be a lack of understanding about AI and how it can benefit procurement. This can make it more difficult to secure stakeholders' buy-in and use the technology effectively.

Best Practices When Using AI in Procurement

Implementing AI into your procurement practices can provide significant benefits, but following best practices is important to ensure success.

Best Practices When Using AI in Procurement



Start with Existing Processes



Ensure High-Quality Data



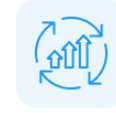
Experiment



Use AI for Contract Management



Vendor Evaluation and Compliance Monitoring



Continuous Learning and Improvement

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• Start with Existing Processes

Rather than looking for new solutions, start by applying AI to your existing procurement processes. This can help you identify where AI can provide the most value and make integrating the technology into your operations easier.

• Ensure High-Quality Data

Data is the fuel that powers AI algorithms. To achieve accurate and meaningful insights, ensure you are capturing high-quality data. This might involve cleaning up existing data, implementing data validation checks, or investing in data management tools.

• Experiment

Don't be afraid to experiment with AI. Start small, learn from your experiences, and scale up your use of AI gradually. This can help you understand the capabilities and limitations of the technology and how to use it effectively.

• Use AI for Contract Management

AI can be used to analyze contracts and identify key terms, such as pricing, delivery dates, and terms and conditions. This can help ensure

compliance with contractual obligations and reduce legal risks.

• **Vendor Evaluation and Compliance Monitoring**

Use AI for vendor evaluation and compliance monitoring. Textual data analysis with generative AI can help procurement professionals in these areas.

• **Continuous Learning and Improvement**

AI is an evolving field, and it's important to keep learning and improving. This could involve attending industry events, reading reports, or working with a supplier that offers ongoing support and insights.

The Future of AI in Procurement

Today's AI solutions are quite impressive, as they can handle large amounts of data analysis from countless data sources in minutes.

As new technologies continue to evolve, AI systems may become even more valuable to the procurement function. One thing's for certain - there's a lot of promise.

■ The Future of AI in Procurement



Even More Efficiency and Effectiveness



Automation and Self-Service



Generative AI



Anticipating Sales Trends



Autonomous Supply Chains



Enhanced Visibility

▪ **Even More Efficiency and Effectiveness**

AI is expected to boost the effectiveness of procurement organizations by allowing them to capture relevant new data sources and solve complex problems more efficiently.

▪ **Automation and Self-service**

Businesses are clearly interested in investing in self-service and automation technology to drive consistency and efficiency in the procurement process. AI will likely take over routine tasks in the future, freeing procurement teams to focus on strategic work.

▪ **Generative AI**

Generative AI technologies like ChatGPT and Google Gemini are making waves in the sourcing and procurement landscape. These tools can generate human-like text, helping to automate tasks such as drafting contracts or responding to supplier inquiries.

▪ **Anticipating Sales Trends**

AI tools can accurately anticipate future sales trends based on various data sources. This will enable procurement organizations to plan their purchasing strategies confidently.

▪ **Autonomous Supply Chains**

In the next decade, supply chains could become highly autonomous, with AI-driven systems managing many processes, from procurement to delivery.

▪ **Enhanced Visibility**

AI is expected to drive enterprise-wide visibility into all aspects of procurement, delivering powerful insights that humans simply can't imitate at scale.

Through ongoing research and development, we can expect even more innovative applications of AI in procurement.

AI Technology is at the Heart of Tomorrow's Procurement—and Today's

The intelligence may be artificial, but the results are real.

Hype aside, integrating artificial intelligence into your procurement processes will give your team the tools it needs to support growth and meeting organizational goals.

AI can help by setting a new standard for transforming data into greater process efficiency, more robust financial health, and a business footing that's agile, resilient, and ready to take on all challengers in the new data-driven marketplace.

What's your goal today?

1. Use PLANERGY to manage purchasing and accounts payable

We've helped save billions of dollars for our clients through better spend management, process automation in purchasing and finance, and reducing financial risks. To discover how we can help grow your business:

- Read our case studies, client success stories, and testimonials.
- Visit our Spend Analysis Software page to see how PLANERGY can empower you to get more value from your spend.
- Learn about us, and our long history of helping companies just like yours.

[Book a Live Demo](#)

2. Download our "Indirect Spend Guide"

Download a free copy of our guide to better manage and make savings on your indirect spend. You'll also be subscribed to our email newsletter and notified

about new articles or if have something interesting to share.

download a free copy of our guide

3. Learn best practices for purchasing, finance, and more

Browse hundreds of articles, containing an amazing number of useful tools, techniques, and best practices. Many readers tell us they would have paid consultants for the advice in these articles.

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