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Intelligent Procurement Study 2024



Capgemini



How trending topics,
procurement priorities,
technologies and start-ups are
reshaping the procurement landscape.

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Authors and Contributors

Foreword

Authors :
Kadir Tekin
Dico van Dijk
Thomas Gannon

The world is ever-changing, and the past couple of years have brought a series of paradigm-shifting transformations. The COVID-19 global pandemic, Russia's attack on Ukraine, and recently, the unstable situation between Israel and Palestine, led to a string of events that undisputedly brought forward multiple additional challenges for all markets and companies across the globe. The disruption of the global supply chains tilted the globalization pendulum to the reverse, with more and more countries turning back to protectionism instead of global trade. On top of this, the scarcity or even non-availability of vital goods such as oil, gas, and certain raw materials also sparked a global economic crisis with declining growth rates and soaring inflation in almost all regions across the globe.

In addition to the above-mentioned short-term impacts, the increasing awareness of climate change as well as the growing emphasis on social, cultural, and environmental responsibilities are changing the way we purchase goods and services around the globe. There is now more emphasis on what goods and services we buy, how and from where we acquire them, as well as the need for more resilience in the supply chain.

On the bright side, we also see a lot of positive transformations and innovations. We are on the edge of another fundamental revolutionary change, perhaps the largest one since the inception of the internet almost 30 years ago. The advances in artificial intelligence, machine learning, and natural language processing are breathtaking and intriguing. These technologies are penetrating various domains, being on the verge of widespread adoption, generating numerous new use-cases and market ready products. This will again alter every aspect of procurement. Self-evidently, all the above-mentioned topics



have a significant impact on the supply chain and procurement world and are changing the agenda and focus of chief procurement officers (CPOs), purchasers, and suppliers globally.

In this context, we have interviewed not only our vast network of clients but also Capgemini's procurement and supply chain community, comprising more than 350 experts globally. We also conducted an interview with Philip Ideson (founder of Art of Procurement) to get his views on the art of Procurement, an understanding of the latest trends, challenges and future plans. We have also covered tested concepts that are delivering value in the market.

Summarizing, we observed that our clients are focusing on four key areas, which we have condensed into four segments within our report: Trending Topics, Procurement Priorities, Technologies, and The Start-up Landscape.

We hope you will enjoy the insights and findings of this report as much as we have enjoyed writing them.

Happy reading!

Introduction

Authors :
Daniel Fichtlscherer Christina Koch
Nadine Reidenbach Lukas Grünewald

In an ever-evolving world of procurement, where businesses must adapt to a dynamic global landscape, the traditional role of procurement as a cost-saving department has transformed dramatically. In contemporary times, procurement stands as a strategic partner capable of driving value enhancement throughout the entire supply chain. This ongoing transformation has been gaining momentum, permeating various industries and organizations worldwide.

The study delves deep into the dynamic realm of procurement, with a focused examination of four pivotal elements that are shaping the current landscape of procurement practices: hot trends, client priorities, technologies, and the startup landscape. These elements encapsulate the contemporary challenges and opportunities faced by procurement professionals in their pursuit of delivering value and maintaining competitiveness within an increasingly complex global marketplace.

The decision to segment our study into these four elements is rooted in the inherent complexity and multifarious nature of modern procurement practices. Procurement has evolved into a strategic pillar driving value across the entire supply chain. This transformation necessitates a holistic exploration that encompasses the diverse facets of procurement's current landscape. By dividing our study, we aim to unravel the multifaceted challenges and opportunities faced by procurement professionals as they navigate the intricacies of today's global marketplace.

Trending topics

- Sustainability and carbon footprint reduction
- Inflation risk mitigation strategies
- Supply chain resilience and decoupling
- Procurement's role in driving innovation
- Application of Gen AI in procurement

Start-ups

- Innovative startups in procurement areas
- Disruptive solutions in supplier discovery, sourcing, supplier management, contract management, and spend management & reporting analytics
- The role of startups in advancing sustainability and AI in procurement
- Insights from in-depth interviews with startup founders



Procurement priorities

- Client expectations and challenges
- How to excel risk management
- Unleashing the power of AI
- Sustainability as a solution for future generation's needs
- How to employ data and technology

Technologies

- Evolution and maturity of Source-to-Pay (S2P) platforms
- Challenges and considerations in technology adoption
- Emerging technologies and their impact on procurement
- A maturity model for digital procurement initiatives

Our study is grounded in a rigorous and systematic approach that combines qualitative and quantitative research methods. To ensure the highest level of accuracy and relevance, global teams from Capgemini, boasting extensive procurement expertise, worked tirelessly on the topics at hand. These teams conducted exhaustive market research, delving into the intricacies of the industry, and engaged in a series of in-depth interviews with a broad spectrum of professionals.

Our approach involved collaborating with

procurement leaders who are at the forefront of innovation, as well as consulting with finance and supply chain experts for a comprehensive view of the entire ecosystem. These interactions not only enriched our understanding of the subject but also allowed us to tap into a wealth of knowledge and experience that spans across different regions and sectors.

By leveraging the collective insights and expertise of these individuals, we were able to construct a robust foundation for our findings. This extensive research and collaboration ensure that our study is not just based on theoretical concepts but is firmly rooted in real-world experiences and practical knowledge. As a result, our findings offer a comprehensive and up-to-date perspective on the ever-evolving landscape of procurement and its broader implications for organizations across the globe.

In the following sections, we offer a detailed overview of what each element of our study encompasses:

- **Trending topics in procurement**
  In today's business environment, sustainability is a key focus. We emphasize how procurement intersects with reducing carbon footprint, providing insights for organizations to contribute to sustainability and meet global climate goals. We also highlight procurement's role in managing inflation risks and strengthening supply chains by equipping buyers with knowledge, skills, and tools. Suggestions to address inflation risks include enhancing category structures, improving category expertise, monitoring inflation-sensitive categories, and collaborating with stakeholders.

  Additionally, we examine the impact of decoupling global supply chains on procurement, influenced by events like the US-China trade dispute, COVID-19, sustainability concerns, and geopolitical shifts.
  We explore procurement's critical role in driving innovation through identifying and sourcing new products, supplier collaborations, and fostering a culture of continuous improvement. By addressing these topics, we aim to equip professionals with the insights needed to navigate challenges and seize opportunities.

  Finally, we delve into the transformative potential of Gen AI in revolutionizing procurement processes. By harnessing real-time data analytics and leveraging advanced automation, Gen AI empowers procurement managers to make informed decisions, optimize operations, and drive strategic value within their organizations. We explore how Gen AI serves as a supportive virtual assistant, augmenting the capabilities of procurement professionals and positioning them as pioneers in value-driven procurement practices.

- **Procurement priorities**
  Understanding the perspectives and priorities of procurement clients is essential for delivering value. Current challenges have been analyzed to be able to anticipate them, recover from their impacts, and understand how procurement organizations can adapt to these challenges and remain competitive.

  We present an in-depth analysis of client expectations, challenges, and strategies. By aligning procurement efforts with client priorities, organizations can foster stronger partnerships and drive success. The overall findings yielded valuable insights into the digitization of procurement, the adoption of advanced technology, the increasing importance of risk and sustainability in both operations and supplier management, and the essential skillset necessary to enhance the effectiveness of the procurement function.

- **Technologies in procurement**
  Modern procurement relies heavily on technology to enhance efficiency, compliance, transparency, and simplicity. These factors have become essential for long-term success and scalability, yet the abundance of technology options has created complexity for decision-makers.

  Source-to-pay (S2P) platforms are maturing and offer robust solutions for various businesses. However, many organizations aren't entirely satisfied with their choices, as evidenced by recent research showing 82% of CPOs regret their platform decisions.

Emerging technologies provide opportunities for further digitization and automation, but successful implementation requires careful planning. In this section, we introduce a maturity model that guides digital procurement initiatives by prioritizing source-to-pay fundamentals before integrating new technologies. We also address common challenges and share best practices for success. Our insights help organizations make informed decisions about technology adoption and digital transformation.

- **The start-up landscape in procurement**
  The procurement startup ecosystem is vibrant and disruptive. This section explores innovative solutions offered by start-ups in key procurement areas like supplier discovery, sourcing, supplier management, contract management, spend management, and reporting analytics. It delves into how these start-ups are reshaping traditional approaches and their potential impact on businesses. Additionally, it highlights two major trends in procurement: sustainability and artificial intelligence (AI), and how they enhance ethical, efficient, and intelligent procurement.

To offer an in-depth view of the procurement startup landscape, we established clear criteria for identifying start-ups in this sector, creating a comprehensive longlist. After further evaluation, we narrowed this down to a focused shortlist. Deep-dive interviews were then conducted with the most innovative and relevant start-ups, to gather valuable insights into their strategies, innovations, challenges, and future visions. This helped in painting a clearer picture of the overall startup landscape in procurement.

	Definitions
Procurement:	Overall process from sourcing to accounts payable, also known as Source-to-Pay
Sourcing:	The selection of a supplier, negotiation, contract creation, contract + supplier performance management and supplier information. Also known as Source-to-Contract
Purchasing:	Operational activities to place purchase order, including requisition creation, PO creation, goods/services receipt. Also known as Purchase-to-Order
Accounts Payable:	Invoice receiving, processing and payment
Source-to-Contract:	Strategic sourcing, contract management, supplier information and supplier performance management activities
Purchase-to-Order:	Operational purchasing activities only
Purchase-to-Pay:	Operational purchasing + accounts payable activities
Order-to-Pay:	Accounts payable activities only
Source-to-Pay:	All sourcing, purchasing and accounts payable activities

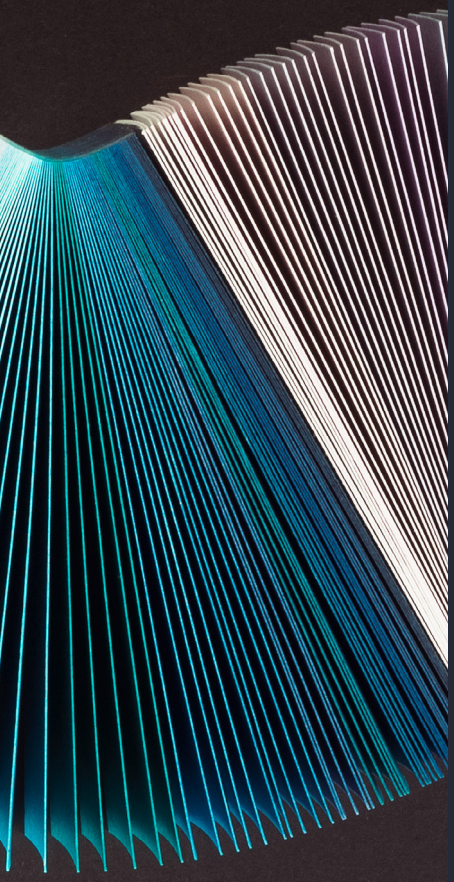
Table 1: Definitions used in this report

This study integrates these four elements into a coherent narrative, offering a panoramic view of the ever-evolving field of procurement. It serves as a valuable resource for professionals seeking to stay ahead in a rapidly changing landscape, for researchers aiming to deepen their understanding of contemporary procurement dynamics, and for organizations committed to leveraging procurement as a strategic enabler of growth and sustainability.



SECTION 1

TRENDING TOPICS



What are the trending topics that CPOs are dealing with today?

We picked several themes that are high on the agenda of many procurement leaders and have greater long-term relevance to the field. Carbon management is the first area of interest; this aspect is undeniable in procurement, given the growing need to reduce carbon footprint and procurement's impact on them. The second issue that was on the radar screen—at least for the developed economies—during the past few decades was inflation. Recently, due to macro-economic and political factors, it grew unexpectedly high and put a lot of pressure on procurement functions to achieve their targets. The third is supplier collaboration. The topic has been around since the turn of the century, but the race for innovation gives the topic a renewed sense of purpose. Lastly, decoupling of supply chains, which reflected geopolitical tensions and became of significant pertinence during the COVID-19 pandemic after years of globalization. Is it true that there is a growing trend towards decoupling supply chains today?

In this section, we will share our perspective with regards to the current developments on these topics and review the latest trends.



Philip Ideson is the Founder and Managing Director of Art of Procurement, a media, and advisory company that helps procurement leaders accelerate transformation. Prior to Art of Procurement, Philip led procurement transformation, category management, and sourcing programs for clients of Procurian and Accenture. Previously, Philip was Head of International Procurement, Sourcing & Third Party Risk Management at Ally Financial and has worked across multiple industries, geographies, in both Direct and Indirect procurement.

How can carbon footprint be reduced through procurement?

Authors :
Augustin Le Diberder
Maiwenn Gony

On December 12, 2015, the Paris Agreement—a legally binding international treaty on climate change—was adopted by a record 196 countries. It established goals more ambitious than its predecessor (the Kyoto Protocol), including the objective of restraining the global temperature rise to below 2°C and actively pursuing efforts to limit it to 1.5°C.

Three main institutions revolve around the Paris Agreement, which now provide the overarching goal in terms of climate ambition:

- The **GHG Protocol** was created in 1998 to respond to the growing need to measure and manage the greenhouse gas (GHG) emissions of businesses, governments, and organizations. This institution provides a practical and standardized tool for achieving the Paris Targets' initiative.
- The **Science Based Targets Initiative** (SBTi) was created right after the Paris Agreement aiming to incentivize companies to establish emissions reduction targets in alignment with the latest scientific research on preventing the most severe impacts of climate change. The main mission of the SBTi is to collect and record a company's global carbon reduction commitments.
- The **Carbon Disclosure Project (CDP)** was created in 2000 to collect environmental data from businesses (including their carbon emissions) and assign grades to companies, allowing them to identify their environmental risks.



How does it apply to procurement?

To have a better understanding of the origin of carbon emissions, the GHG Protocol introduced the concept of emission scopes, categorized into three scopes:

Chart representing the different emission scopes:

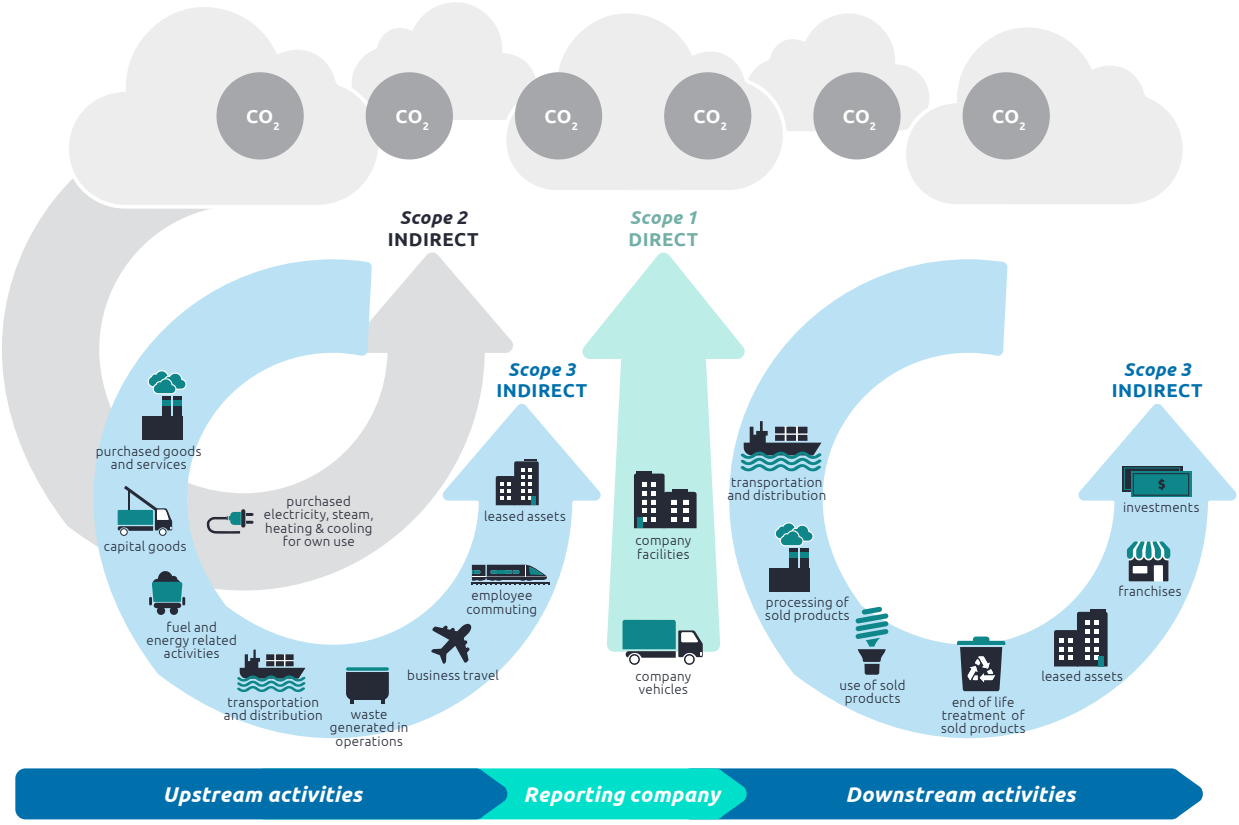


Figure 1: Scopes of Emissions | Source: GHG Protocol standard

- **Scope 1** emissions are related to **direct** greenhouse gas (GHG) emissions **from a company's own operations and activities.** These are emissions produced by sources owned or controlled by the company, and is a result of its operations
- **Scope 2** emissions are related to **indirect** greenhouse gas (GHG) emissions **from the generation of purchased electricity, steam, heating, and cooling consumed** by a company. These emissions are produced at power plants and other facilities that generate the energy used by the company but are not directly controlled by the company.
- **Scope 3** emissions are related to **indirect** greenhouse gas (GHG) emissions that result **from activities that are not owned or directly controlled** by a company but are related to its operations. These emissions are considered as the 'value chain' emissions and can come from a variety of sources such as the production and transportation of raw materials, employee commuting, business travel, waste disposal, etc. The Scope 3 emissions are divided in 2 main scopes:
  - **Upstream** emissions
  - **Downstream** emissions

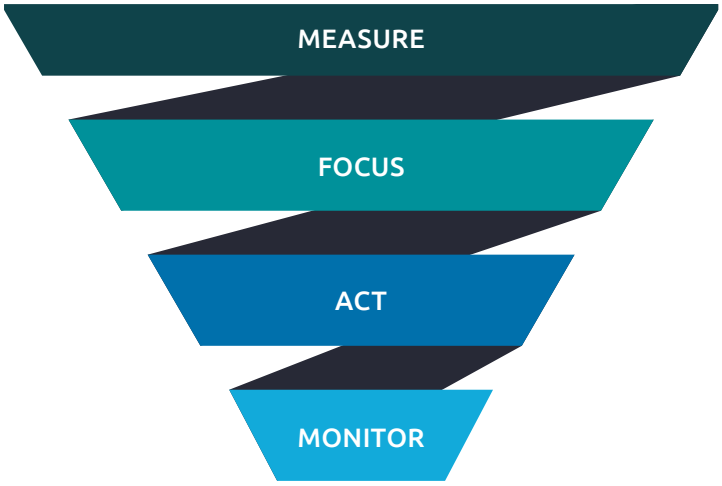
For most companies, goods & services under scope 3 represent around 80% of the total emissions. More specifically, scope 3.01, which refers to procurement of Goods & Services can represent up to 80% of scope 3. This makes the procurement function a key actor of the carbon reduction approach of any company.

[1] *Carbon Disclosure Project (CDP) Technical Note: Relevance of Scope 3 Categories by Sector*

How to start your procurement carbon reduction journey?

To meet your organization's growing need to define its procurement carbon reduction trajectory, Capgemini has developed a tailored methodology to measure and reduce carbon emissions together with procurement and carbon experts. It is applicable to any business sector and consists of a 4-step approach:

MEASURE > FOCUS > ACT > MONITOR



Source: Capgemini Invent

1 First step: Measuring the carbon footprint

Calculating your carbon footprint will help you to have a clearer understanding of where your carbon emissions are coming from and will allow you to focus on two to four main categories known as 'hotspot categories.'

Before performing any carbon footprint calculation, the baseline year must be defined to have a starting point for your carbon reduction journey.

Capgemini has strong partnerships with many solution providers and start-ups that can help you with your carbon footprint calculation.

A carbon footprint calculation results from a two-factor formula:

ACTIVITY DATA *Internal Data*	X	EMISSION FACTOR *External Data*	=	CARBON EMISSION
→ **Spend** (in euro, dollar, etc...), → **Units** of product → **Days** → **Kilograms, liters**, etc.		→ **Kg CO2 equivalent emitted per unit**		→ **Total Ton CO2 equivalent**

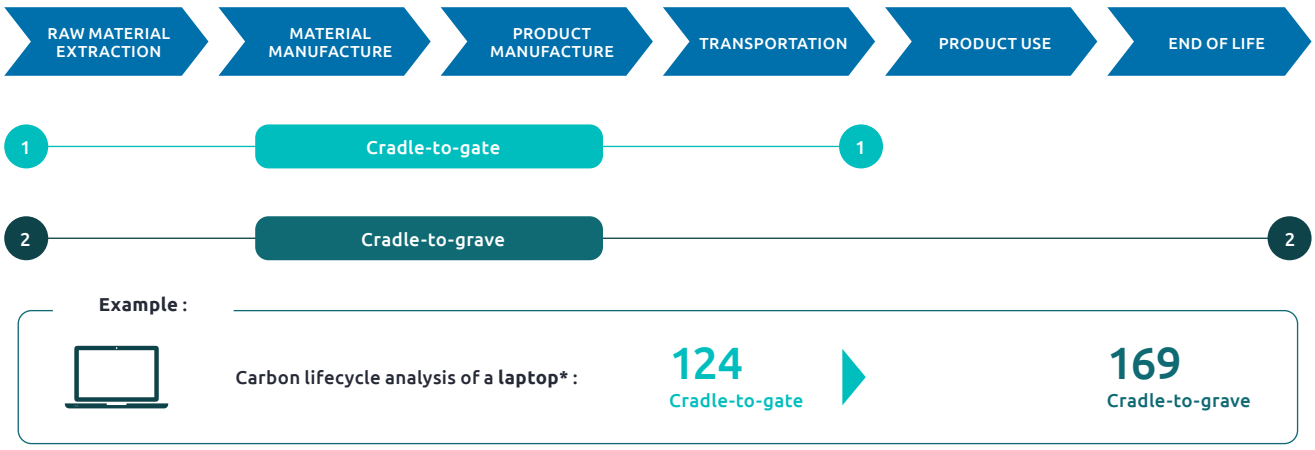
Capgemini illustrates the calculation guidance from the GHG Protocol through 5 types of calculation methodologies based on both access to data and accuracy:

UNIT	X	EMISSION FACTOR	UNIT	UNIT	EMISSION FACTOR	RESULTS	ACCURACY	METHOD NAME
Spend	X	Market average	26 M€ Of laptop purchased	X	0.36 KC02E/€	= 9335 TCO2E		Spend-based method
		Supplier data			0.29 KC02E/€	= 7540 TCO2E		Supplier spend-based method
Quantity (units, kg, etc)	X	Market average	24130 laptops	X	169 KC02E/€	= 4077 TCO2E		Average data method
		Market average			157 KC02E/€	= 3788 TCO2E		Supplier spend-based method
		Supplier data			152 KC02E/€	= 3667 TCO2E		Supplier specific method

The accuracy of the calculation will depend on the unit chosen. Generally, a spend-based calculation is less accurate than a quantity-based calculation, and the more accessible the information, the less precise it is.

Once the company has performed the first calculation, the aim is to update the calculation on a regular basis by using more precise types of calculations.

Emission factors can be found on a public and private database or calculated through a life cycle analysis based on either cradle-to-gate or cradle-to-grave methodology.



The database can be supplemented with information communicated by suppliers.

Most companies perform a first spend-based calculation to refine this calculation through a mix of spend-based and quantity-based methods, which provide more accuracy. There are additional options that apply according to specific company needs: supplier quantity-based, activity quantity-based, etc.

2 Second step: Focusing on the hotspot categories

Measuring your carbon footprint allows you to have transparency on your main sources of emissions (at the product or supplier level). It is interesting to identify the most emissive categories to focus most of your reduction efforts on and to target the potential adjustments to bring to the overall procurement ecosystem.

The main approach to doing this is based on the Pareto approach: 20% of your categories represent 80% of the total emissions.

To effectively address this challenge, a deep dive into the most emissions-intensive categories is essential.

By thoroughly examining these high-impact areas, we can fine-tune our calculations, identify suppliers and products that contribute significantly to our carbon footprint, and prioritize actions accordingly.

This approach allows us to not only target the broader issue but also dissect it into actionable components. Through this process, we can create a prioritization matrix that guides our efforts towards maximum impact reduction. By focusing on the categories, suppliers, and products with the highest emissions, we can make informed decisions to drive meaningful change in our carbon reduction initiatives.

3 Third step: Identifying and implementing your carbon reduction levers

Now that you have a clear vision of your emissions and your hotspot categories, to start acting on your carbon reduction, you need to identify carbon reduction levers.

The Capgemini methodology involves the identification of three types of levers:

- **Volume**
- **Product of service**
- **Supplier**



Prior to identifying the levers, it is strongly advised to define cross-functional internal and external stakeholders to be included in your approach.

TYPE OF LEVER	LEVERS	POTENTIAL SAVINGS
1 QUALITY MANAGEMENT	• IT devices restricted to 1 device per person • **Extension of laptop lifetime (5 years instead of 3)**	-39% Total laptop volume
2 PRODUCT *OR* SERVICE OPTIMIZATION	• Repairing instead of replacing • **Changing for less carbon-impact laptops**	-18% Per employee
3 SUPPLIER ENGAGEMENT	• Supplier's carbon neutral policy • **Supplier's recycling or upcycling policy**	Variable

There are multiple sources to identify carbon reduction levers. These sources may involve employing industry benchmarks or conducting interviews with suppliers. Notably, Capgemini has introduced a valuable resource in the form of the Capgemini Low Carbon Navigator tool. This unique and powerful tool effectively consolidates decarbonization strategies tailored to 25 specific sub-industries, providing a sector-specific approach alongside extensive data aggregation and comprehensive analysis.

Following the identification of these strategies, it becomes imperative to assess their impact on carbon reduction. While quantifying the precise reduction impact of a carbon lever remains a challenging task, it generally involves making estimations rather than achieving pinpoint accuracy in the calculations.

Furthermore, beyond evaluating carbon impact, it proves insightful to consider a broader spectrum of consequences, encompassing cost implications, business outcomes, and process transformations, among others.

4 Fourth step: Monitoring your carbon reduction impacts and adjusting your strategy

The only way to ensure the efficiency of your carbon reduction journey is to monitor related savings on a regular basis and adjust the action plan accordingly. In that regard, we have identified four key activities to ensure viable monitoring.

It is important to identify and implement your monitoring tool from the very start of the journey. This will allow you to monitor carbon reduction with the same rules all along the way. It is also critical to define governance around your reduction plan, pilot it with KPIs and dashboards to ensure your objectives are met, and adjust the trajectory with additional actions if necessary.

Another key activity is to initiate your suppliers on an action plan by monitoring the impact of the application of the different levers you identify with them. Levers can include reducing consumption (e.g., travel policy), increasing the product lifespan, reducing dependence on carbon-based energies, and many others.

Eventually, you will be able to adjust your carbon savings strategy over time and track the fulfillment of your commitments with the ultimate goal of achieving carbon neutrality (carbon emissions cut as close to zero as possible), and offset any remaining emissions through compensation initiatives. Remember that your carbon savings management is cyclical and will need constant adaptation.



Capgemini's vision on the next steps 2023/2024:

To include this carbon dimension in the procurement function, the procurement operating model needs to evolve over the next few years to ensure it considers not only the company's commitment but also the supplier's commitment. The procurement operating model requires comprehensive transformation across all dimensions, e.g., the procurement strategy needs to be aligned to the corporate Environmental, Social and Governance (ESG) strategy, including changes in policies and evaluation criteria, etc.

Capgemini has a proven methodology to support its clients in the implementation of sustainability in the procurement core model. Here are some examples:

- Modification of the tender process to include sustainability measures as a criterion in the supplier selection process, in addition to traditional criteria such as cost, quality, and timeline.
- Modification of procurement policies to sustainable procurement policies: how to implement the sustainable dimension in the tender process, supplier selection, and supplier performance.
- Modification of the supplier relationship management (SRM): how to onboard suppliers in the carbon reduction journey.

Sources: GHG Protocol, CDT, ADEME, Capgemini, SBTi, Paris COP[21], APQC

Managing the untamable: Inflation

Authors :
Dominik Knotte
Othman El Bouchattoui

Inflation is a leading agenda item for many CPOs following the recent rise in prices and eventually, procurement will need to learn to adapt to these escalating costs.

Unfortunately, there is no silver bullet that can mitigate all inflationary price increases. Rather, it requires a mix of traditional buying strategies and category knowledge, the leveraging of internal and external data and collaboration, digital tools, and robust processes to validate and anticipate price changes. The overall maturity of the procurement function, as shown in the following article, is a key differentiator to continue to thrive during periods of high inflation.

Inflation hit both Europe and the US significantly in 2022. The devaluation of money is rapidly growing across the globe within all sectors and businesses, which has led to a dramatic rise in prices. Consequently, inflation and how to deal with it became one of the top priorities for CPOs in 2023. The recent inflation we have seen in Europe and the US can mainly be attributed to rising energy costs, COVID-19 incentive programs by the government and central banks, and general disruption of supply chains, which lead to product shortages. As a result, suppliers were forced to raise prices for their goods and services to pass on costs to the buying companies as they continued to trickle down through the supply chain.

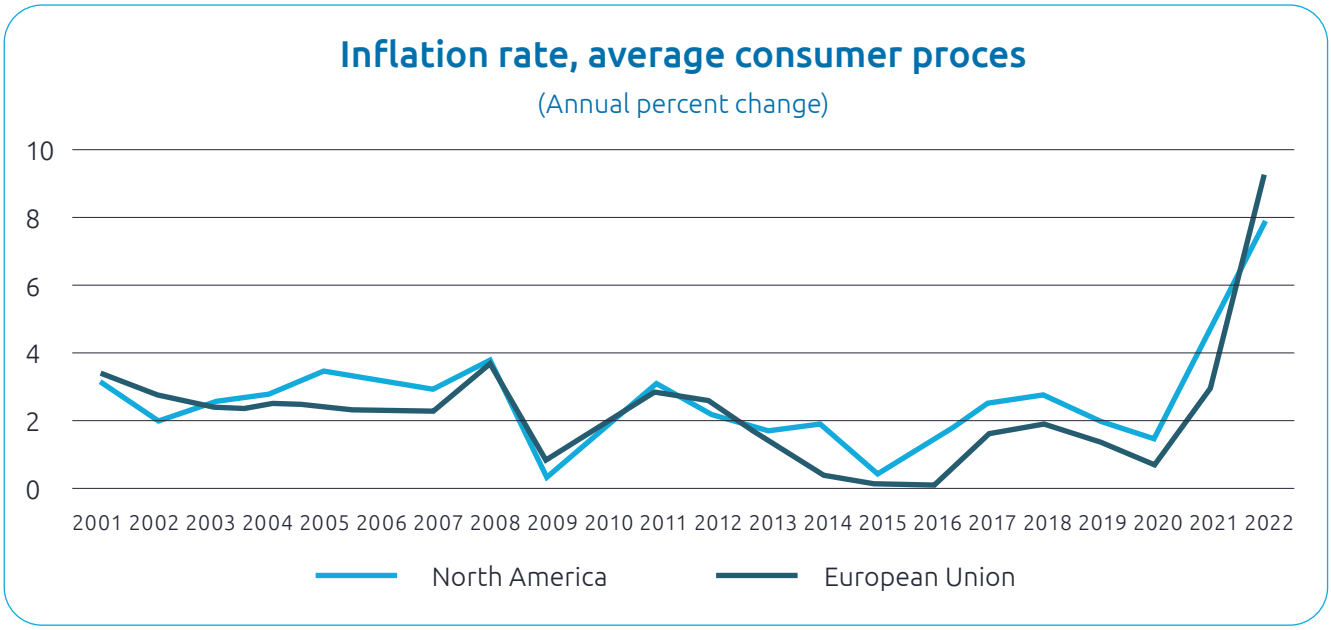
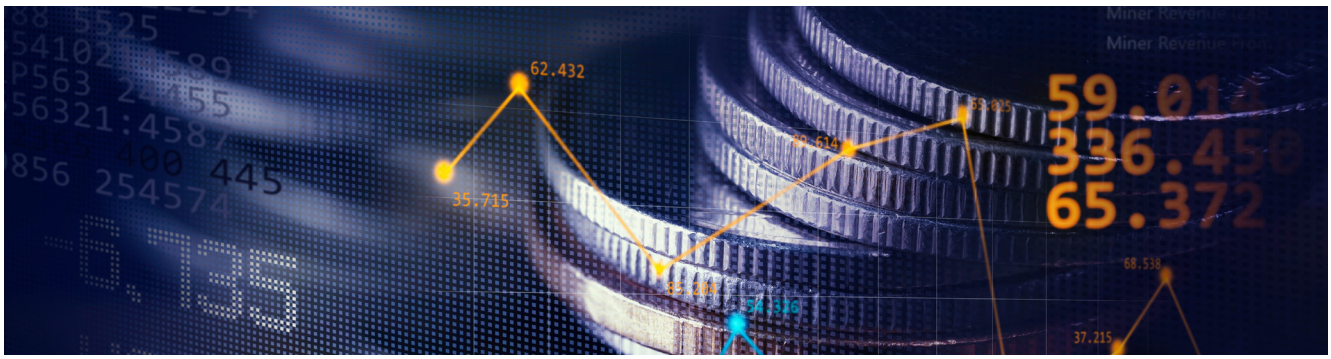


Figure 2: Inflation rate, average consumer prices | **Source:** IMF

Many procurement functions are not equipped to deal with these relatively sudden price increases. There are often no processes, instructions, or governance in place to anticipate, validate, and mitigate inflation-driven price increases. The necessary category insights at the appropriate level of detail (e.g., cost breakdowns) are rarely available, if at all. Buyers are forced to be reactive as they attempt to keep increases to a minimum by negotiating and settling based on instinct rather than data-driven evidence. An additional challenge is that the current generation of procurement professionals in Europe and the US don't have enough direct experience around how to deal with inflation, as the value of money was relatively stable over the last decade in those regions. Overall, many procurement organizations are hoping that they don't see that type of request from suppliers because they simply aren't confident in knowing how to deal with them when they do.

However, there is good news. We can see a path through the difficult situation businesses are dealing with today. Procurement functions have a tremendous opportunity to mitigate risks caused by inflation and help create a more resilient supply chain. By equipping buyers with the right knowledge, skills, and tools, they can maintain much better control over the overall cost. This article discusses potential solutions on how procurement can best deal with inflation. To achieve this, we will need to answer the following key questions:

1. What does the ideal target state look like?
2. How can inflation drivers in categories be identified and monitored?
3. What actions can a procurement function take to tackle inflation?



The target state

The target state is based on the culmination of deep procurement knowledge, robust digital processes, and seamless integration of third-party data. In an ideal world, buyers would have access to a dashboard that contains electronic cost breakdown data for each of their categories and subcategories. The cost information, depending on the category linked to external data sources such as market indices and developments in price components, is forecasted in both directions—upwards and downwards. Based on a well-defined evaluation process and metrics, inflation-sensitive categories can be mapped and monitored in the buyer's dashboard. In cases of a significant (expected) price increase, categories are automatically flagged so that they can be evaluated quickly by procurement. As part of their category strategies, buyers have discussed tactics and agreements with their suppliers to mitigate inflation risks (e.g., validation mechanisms for price increase requests from a supplier). The strategies are cross-functionally developed, aligned, and documented. The CPO or category managers can easily pull a report with inflation sensitivity per category to see expected trends and their impact on procurement spend.

Identifying and monitoring inflation drivers

The second question we would like to answer is how procurement can identify and monitor inflation drivers. To achieve this, a procurement function needs to first ensure that an appropriate category structure is in place. Categories are designed to cluster similar types of demand; hence the cost structures of goods and services in one category are alike. The category view is crucial for the prioritization of inflation risks. The inflation risks can then be evaluated against each other through a simple two-by-two matrix.

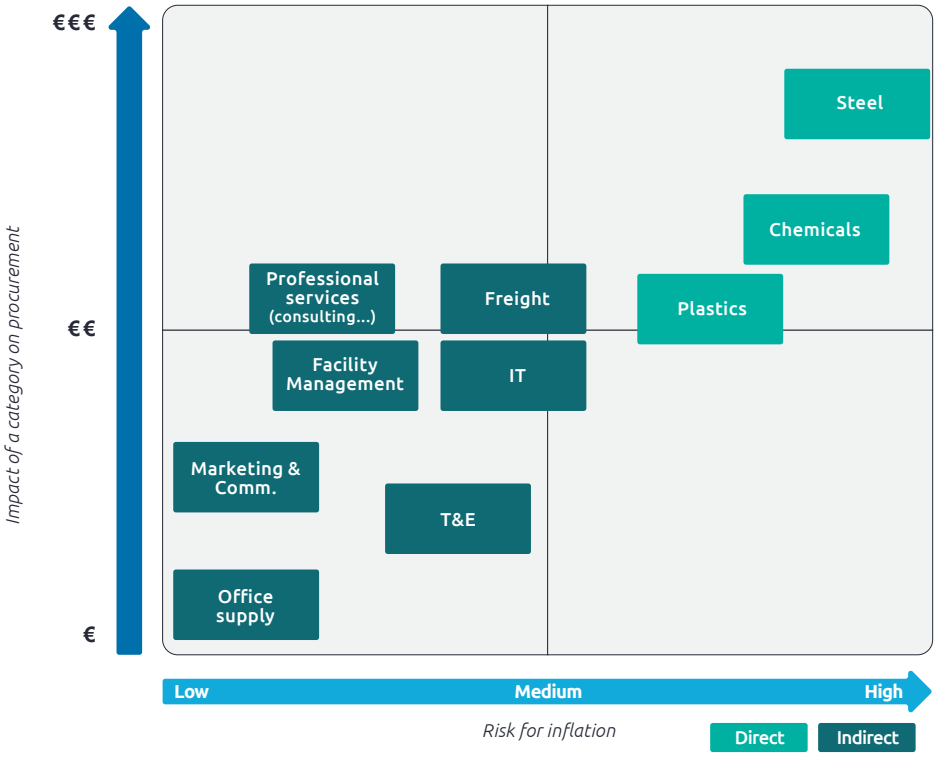


Figure 3: Exemplary Inflation risk matrix

One axis shows the impact of a category on procurement (e.g., based on spend volume), whereas the other axis shows the risk for inflation (e.g., based on historical price volatility). The matrix helps to prioritize categories, puts inflation risk into proper context, and helps to derive suitable mitigation strategies. To enable those metrics and evaluation logic, category managers need a detailed understanding of cost structures within categories through the utilization of cost breakdowns, which should be captured electronically throughout the requisition (RQ) process. The category managers need to identify and flag cost elements that are volatile for price increases. If we take the category aluminium coils as an example, the two main cost drivers are raw materials and the energy-heavy manufacturing process. This category is likely to be tagged with 'high risk for inflation' and should be monitored closely. The cost breakdowns need to be further enriched by external data sources (e.g., links to market indices, where possible). The dashboard is key to equipping procurement for ongoing monitoring of costs, and connecting internal and external data—and based on the underlying data model, it should create automated insights and flag changes to the price forecast. Category managers can become proactive and data-driven in the way they manage costs.

Make the provider make that case to you with data. As much as you can, have a data-based conversation; at least you can have a better understanding if it's real or not.

PHILIP IDESON

Our approach at a glance

In summary, we recommend the following steps to address inflation risks:

1. Enhance your category structure, upskill buyers, and improve the category strategy process for the demand and supply site

2. Build category knowledge with a focus on cost structures and capture cost data electronically throughout the sourcing process

3. Determine inflation-sensitive categories and establish strong governance around them to measure increases, decreases, and trends

4. Connect category-cost data with external data where possible and establish buyer dashboards and automated flagging of changes

5. Collaborate with internal and external stakeholders to improve demand, consumption, material, and process cost



Actions to tackle inflation

If procurement can get insights into areas of inflation impact, the third question is around capabilities and effective strategies and tactics when dealing with inflation-sensitive categories. All the tactics described are dependent on specific industries, clients, and maturity levels.

General considerations are category knowledge and buyers' skillsets; this is to ensure that proper category strategies are developed and the whole suite of countermeasures to inflationary categories are leveraged. A structured approach to category strategy development and the creation of category knowledge packs should be enforced and actively trained. It is the simplest way to organize category knowledge and potential levers that can be used across categories. Unfortunately, it is often underestimated and doesn't get the time and attention that it requires to drive successful category management.

Collaboration with external stakeholders

Let's begin examining the various traditional procurement levers on both the supply and the demand sides.

Supplier contracts

If we think about the supply side, a big lever is the right contractual agreement with the supplier. This can be as simple as closing a long-term agreement or extending a contract if rising inflation is expected. Another strategy for long-term contracts could be the linking of certain categories (or cost drivers in categories) to market-price indices to adjust the price of a good on a regular basis (e.g., once a year). There is a 'fair' increase or decrease based on the actual market price of a good. This can help the buyer focus on other cost elements of the piece price, such as other materials, components, overhead, and scrap.

Leveraging data for negotiation

The whole supplier management approach needs to become more data-driven. Category managers are overall in a much better position if they prepare for a negotiation using data and statistics rather than instinct or supplier proposals. The dashboard and cost breakdowns don't just help them in the context of inflation—but also make a positive impact on how they perform overall.



The other challenge that I have seen, while speaking to CPOs, is psychological. Because the psyche of a buyer in a lot of organizations is that their worth, their value, their performance and how they are measured—everything is based on cost savings.

PHILIP IDESON

Enhance collaboration

Enhanced collaboration with strategic suppliers can be the key to jointly improving material or process costs. If suppliers are treated as partners and there are structures in place so that the benefits of initiatives are shared, it can be fruitful to engage with suppliers and tackle inflation together. The ease of collaboration with suppliers is dependent on the overall maturity of the operating model. Some of our clients have collaboration platforms in place to enable internal and external stakeholders to work seamlessly together, exchange data and documents, and plan and monitor countermeasures.

Leverage supply base

Broadening the supply base and increasing competition among suppliers is another effective strategy to counteract inflation, depending on the specific cost driver of a category. Looking for alternative sources in other regions could help to seek out alternatives with supply chains that are not exposed to the same level of inflation, which could lead to a potential cost advantage.

Establish new metrics

Often, cost savings alone determine the value created within and outside of procurement. In inflationary times, it is very unlikely for procurement to achieve cost savings (depending on the calculation method). It is demotivating for category managers to be measured against targets that cannot be achieved. A simple solution for that is to extend the metrics and KPIs and measure the cost that procurement has repelled or the risk or revenue that has been 'protected'. This can showcase the tremendous value procurement can bring during inflationary times.

Collaborating with internal stakeholders

Reduce or shift demand

When discussing demand, collaboration with internal stakeholders is the key. It could be as simple as reducing the demand for inflationary categories (e.g., by challenging the demand, substitution, or rescheduling consumption). This is applicable for categories where inflation is driven by certain events, such as disrupted supply chains and where prices tend to normalize after the event is over. Collaboration with supply chain, manufacturing, and other requisitioners is the key to analyzing possibilities such as reshuffling a production program or shifting demands further into the future, if possible. Those mechanisms are in place in some industries, such as automotive, where manufacturing programs are adjusted based on material or component shortages. The same mechanism can work in the context of inflation, depending on whether a price increase is expected to be short- or mid- to long-term.

Pass on the cost to the customer

Procurement usually doesn't work a lot with sales, and there is little focus on the sales price of a good. The focus has been mainly on cost rather than the sales price a company can achieve for a product. In the context of inflation, there might be a fair increase in costs in the value chain. This increase might simply be passed on to the end customer. The job of procurement is to validate if a cost increase is fair and then share the results with sales and finance. They would further analyze the possibility and impact of passing on costs to the customer.



Demand management is another key area to look at. How much of these goods are actually used? Are they using too many of them? More the traditional procurement and sourcing, greater the emphasis on expense management strategies.

PHILIP IDESON

Increase process efficiencies

Finance plays a crucial role when dealing with business models that lean towards project-based work. The method of calculating projects can be a potential lever if the calculation is based on historical price data rather than the actual or spot purchase cost. In this regard, the process-cycle time to calculate offers is crucial and can often be improved. If there is a time lag between the calculation of an offer and the actual project confirmation, costs could be calculated based on outdated cost assumptions and the margins of the final product. A shorter process-cycle time mitigates this risk.

Improve the product and manufacturing process

Collaborating with key internal stakeholders, such as R&D and manufacturing, is the next crucial option to addressing inflation through material or manufacturing process enhancements. If there is transparency around the cost drivers of certain materials, it empowers procurement to work alongside R&D and manufacturing to optimize specific cost elements. For example, they can substitute or reduce materials through optimized design, new materials, or optimized manufacturing processes. From our experience, those initiatives can quickly lead to collaboration with suppliers, where ideas are shared and validated.

Improve working capital

There is another area that is indirectly linked to inflation that has gotten more and more attention from procurement and finance in recent years: working capital. The reason for that is the fact that central banks use the increase in interest rates to reduce inflation and keep it within their inflation targets, e.g., 2% at the European Central Bank. There is a positive correlation between interest rates and working capital; hence, the importance of actively managing payment terms by procurement and finance depending on the financial situation of a company's increases. Improving working capital is back on the agenda and should be considered as a lever to reduce finance costs.

Key takeaways

The frequency of events that disrupt supply chains throughout the last few years has increased dramatically due to things like increased political tension or environmental influences. This leads to significant supply chain disruptions and continues to add to inflation.

In the near term, we don't expect to see a meaningful change, and it is likely that the frequency of those events may increase. The encouraging aspect is that technology and data availability have also evolved, which helps procurement organizations to be better equipped and prepared to mitigate these inflation risks. The inflation countermeasures pointed out in this section are not new to procurement but rather emphasize that overall procurement maturity can be a game changer. Better utilization of tools and data, ensuring that your people are upskilled to match, and procurement can play a huge part in helping to mitigate inflation costs and making your supply chain overall more resilient.



How to manage your procurement in the era of global supply chain decoupling?

Author :
Maciej Żebrok

Is decoupling of global supply chains a long-term trend or just a hiccup on the path to globalization?

In the last couple of decades, the trend towards trade globalization seemed to be unstoppable and irreversible. According to the World Trade Organization (WTO), the value of world trade has grown from $62 billion in 1950 to $21678 billion in 2021, which is a growth of 347 times in just about 70 years. This trend accelerated after China announced its 'open-door' policy in 1978, moving away from Mao Zedong's isolationist policy and, with the end of the Cold War era, bringing hopes for the democratization of the former communist regimes. Since then, many global trade barriers have been lifted or softened, which has encouraged businesses to invest in new geographies in quest for new markets, cost reduction, and access to scarce resources. The global supply chains have not only become much more efficient and effective but have also grown in complexity and incurred higher risks.

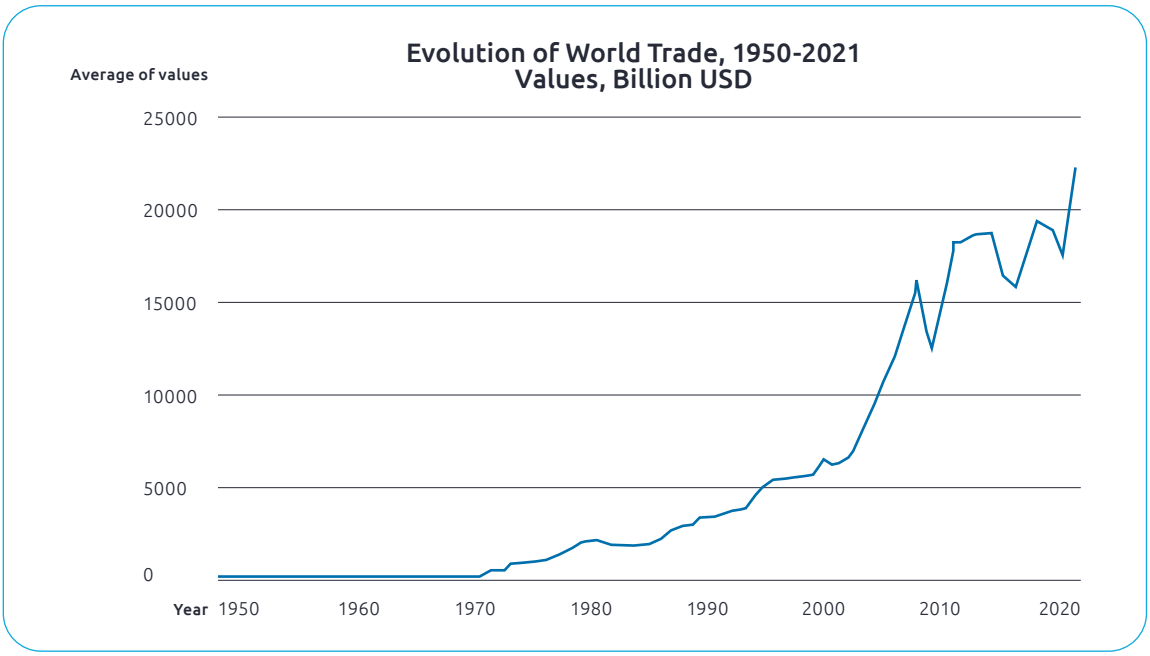


Figure 4: Evolution of trade worldwide

The risks and downsides connected with this successful path became apparent in the last couple of years, when—after decades of booming development—the global political and economic landscape underwent significant changes, exposing international supply chains to serious disruptions. The USA-China trade war, COVID-19, sustainability agenda, or the recent Russian invasion of Ukraine, to name a few, increased reflection and emphasis on risk management.

Although we can't predict with full certainty the direction of global trade development, from today's perspective it seems that there is no return to 'business as usual' soon. So, what can we expect?

Replacing suppliers in some areas will be easier than others. In general, for simple goods, for example, clothing, such a change is relatively straightforward and can be executed, although it may carry some cost disadvantages. On the other hand, it will prove difficult or even impossible for some high-tech industries, where the machinery sophistication and know-how are difficult to replicate. Even with government support and heavy investment, it may take 10 or 20 years to build an alternative.

Let's not forget that it's not only about the know-how or manufacturing capabilities but also the infrastructure that will enable efficient transportation of produced goods from a supplier to a buyer. Starting from roads and rail, through warehouses to seaports with enough capacity to store, carry, load, and transport the produced goods. And it's not enough to have them but they must work as a system to be efficient and competitive.

Given the above constraints, total decoupling is very unlikely because the supply chain cross-dependencies have been brought to the point where it's simply impossible to cut the ties from one day to another. Even adversary political blocks will, like it or not, continue collaboration at least in some areas, where they can't substitute current suppliers easily. However, we are likely going to experience gradual de-coupling, which will continue with the polarization of the geopolitical landscape.

We can already witness such a trend, with governments investing in their domestic, underdeveloped regions, or various forms of 'friend-shoring' or 'ally-shoring.' The example could be a series of government policies in the United States—specifically, the American Rescue Plan Act, the Infrastructure Investment and Jobs Act, the CHIPS and Science Act, and the Inflation Reduction Act (IRA)–that provide enormous amount of money for domestic investments, including green economy or attractive tax breaks. The European Union, while criticizing the US administration for protectionism, is also proposing its own programs, like the Green Deal Industrial Plan and individual countries follow the trend—see the German Supply Chain Act 'Lieferkettensorgfaltspflichtengesetz.' Eventually, because such policies favor their own businesses over others, there will be tensions between the allied blocks, and we can expect a period of collaboration that will be rough at times. However, we can expect stabilization at some point in time and the industrial countries in the western hemisphere are likely to keep the collaboration growing inside their geopolitical arena.

The other competing block is led by China. It's very apparent that Russia is more and more becoming a junior partner of China, especially after being sanctioned by many Western countries. Besides, while being protectionist and restricting free trade for a long time, China created strong bonds with many less-developed countries, especially in Africa or Asia, which had a high economic dependency on China. While this block is even less consolidated than the Western one, we can expect it to grow more and increase intra-collaboration over time.

There will certainly be countries that will try to balance the competing blocks, while taking benefits of collaboration with them and potentially serving as a 'connector' between them.

Summarizing our opinion, full decoupling is impossible and unlikely, but we can expect a shift towards competing blocks of supply chains, which will be closely connected with the global geopolitical landscape.

How can companies respond to the challenges arising from supply chain decoupling?

While the future of global trade development is not yet known, supply chain managers should be prepared to deal with any possibility. Proper planning and preparation, as well as organizational agility, will be the distinguishing factors between those who will win and those who will lose.

> *For me this should be a huge area for procurement to play a role. It's an opportunity to really step up and be proactive in de-risking your global supply chain. Because we're supposed, as procurement, to have a purview of all the providers within the supply chain.*
>
> ***PHILIP IDESON***

No doubt, changes like decoupling of supply chains can be painful, but they also bring opportunities. For example, every setup of a new production line is an opportunity for major process improvements and the introduction of state-of-the-art technology. In addition, this may result in a network of smaller production facilities, which would prove more resilient in case of disruptions.

So, what strategies should be applied in response to the changing supply chain landscape?

In our opinion, strategies to deal with the decoupling trend can be divided into technological approaches and strategic changes in procurement—see Figure 2. Let's take a closer look at them.

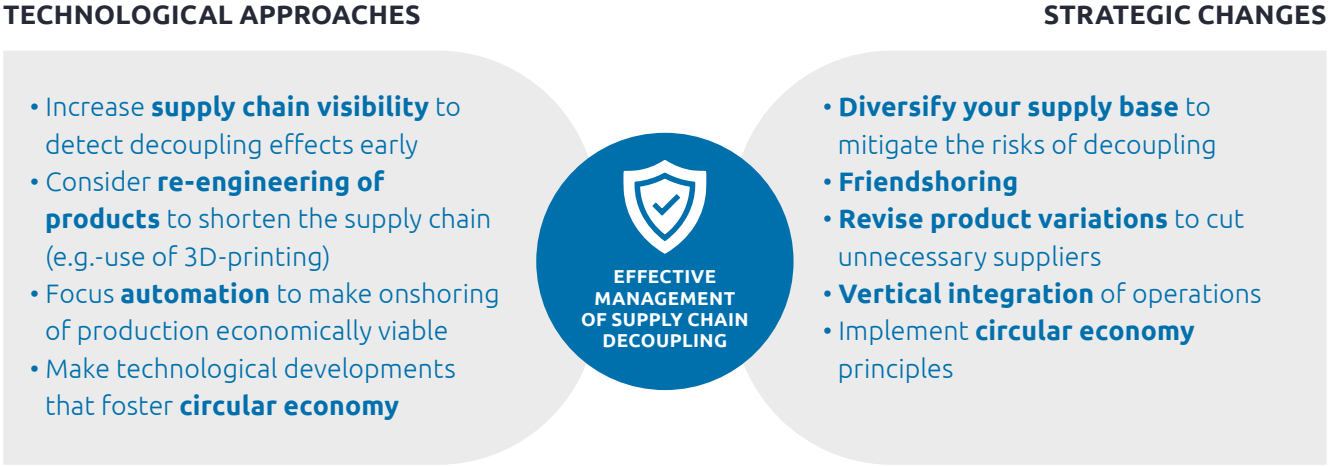


Figure 5: Overview of possible measures to tackle decoupling as a company

Increase supply chain visibility

To identify and address risks, buyers must understand their supply chain in detail—not only the direct suppliers, but also the tier-n suppliers, as well as the larger geopolitical dynamics that may impact their deliveries. With such deep and broad visibility into their supply chain, the buyers can effectively detect potential disruptions and start working on corrective actions early.

While it is not a common market practice yet, there are providers who help companies gain visibility and analysis of their tier-n supply chains. The technological advancements, including system integrations or the Internet of Things (IoT), enable real-time tracking of deliveries from the place of departure to the destination. If the disruption is identified early enough, the buying company can take corrective measures to avoid or at least minimize the impact of the supply shortage.

Re-engineering of products

Challenging times often birth innovative solutions. The risks connected with supply chain disruptions may prompt companies to look deeper into potential re-engineering of their products with the objective of reducing dependency on the supply base or enabling the shift of suppliers to less-sensitive locations. While it's not a short-term fix, it offers big potential long-term benefits and may stimulate innovation.

More focus on automation

As one of the key drivers for offshoring production was labor costs, to tackle this issue, companies may look for more automation of the production lines, thereby reducing the impact of the labor element on the product cost. This in turn may enable bringing production back to the country or nearshore, reducing dependencies on far-shore locations, and reducing supply chain complexity.

Expand the supplier portfolio

For years, one of the procurement mantras was the reduction of supplier bases, often called supplier optimization. Obviously, the thought behind this strategy was volume consolidation with fewer suppliers, expecting lower prices in return.

However, with recent challenges to supply continuity and a heightened focus on supply risk management, this traditional strategy should be revisited. Companies may consider building a larger supplier portfolio to enable purchasing from sources located in various geographies, and limit risks. This is already happening with the 'China plus one' strategy adopted by some companies as a response to raised tensions between the USA and China.

> *"I think that the most obvious strategy is just multiple sources of supply. Ten years ago, we had to rationalize our supply bases, so we only had, say, five suppliers to do everything.*
>
> *From a procurement perspective, what I see is just more suppliers, more options, being less reliant on a single source, as well as not having the geographic concentration. For example, you can have the same supplier, but you're buying goods from two or three of their locations, which are all based around the world, as opposed to everything being manufactured on the same line.*
>
> *PHILIP IDESON*

Friend-shoring

Friend-shoring is not a new concept, but it's getting traction with political tensions between the USA and China. In simple terms it means buying from suppliers or putting the production lines in allied countries, usually closer to the home market, for example Mexico for the US companies. Beyond reducing political risks, it may also support the sustainability agenda and reduce complexity of the supply chain.

Revisit product variations

Product variations are meant to increase the customer base, by better meeting their needs or tastes, which differ from each other. Consequently, the complexity of manufacturing and supply chain operations usually grows.

In response to supply chain challenges, the companies may review their product portfolio and related supply base and delist those that are more prone to supply chain risks, while not being the core offerings. Of course, it requires thorough analysis performed at the company level, not just a supply chain decision.

Vertical integration

Another way to tackle the risks coming from the decoupling trend is vertical integration. Instead of sourcing components from risky geographies or suppliers, manufacturers can start producing them in their own facilities. Such strategies are already being applied by some manufacturers, like those who invested in battery production.

Whilst such a move requires heavy investment and a longer planning horizon, it may pay off in the long-run, by making your own production less susceptible to external factors.

Circular economy

To handle decoupling of supplies of natural resources, the principle of circular economy provides the potential to source raw materials domestically, even in the absence of local natural sources. Achieving this will require both technological developments in recycling and product design and the strategic establishment of a circular economy.



Summary

As mentioned earlier, the decoupling of global supply chains is currently underway, albeit with varying effects on different industries. It is unlikely that this trend will reverse quickly; therefore, buyers must take proactive measures to mitigate the associated supply risks. Fortunately, there are numerous strategies to mitigate the adverse effects of this trend. In most cases, there is no single solution to this problem. However, the positive aspect is that buyers have a variety of levers at their disposal to address this challenge.

Moreover, it is not purely a procurement problem. Procurement managers should work even more closely with the business to develop and implement optimal strategies for their company.

While we can expect negative effects soon, especially in terms of cost and availability, the situation offers opportunities for long-term progress at both the technological and business strategy levels. Buyers who can adapt quickly to this new situation will be able to give their companies a competitive advantage.

Why procurement can be a main driver for innovation

Authors :
Marcin Sztafrowsk
Christopher Brendtner

In today's fast-paced and competitive world, innovation is essential for organizations to stay ahead of the competition, meet customer needs, foster creativity, handle disruptions, and drive economic growth. Procurement has a significant role to play in driving innovation within a company, by identifying and sourcing new and innovative products, services, and technologies, facilitating partnerships and collaborations with suppliers, and promoting a culture of continuous improvement within the organization.

The strategic potential of procurement can be realized through the prioritization of innovative dimensions, including procurement strategy, operational model enablement, procurement of goods and services, and supplier incentivization. The ability to innovate is crucial for procurement to become a key strategic department for the business.

Innovation plays a crucial role in driving progress, growth, and success in the modern world. The ability to constantly evolve and improve products, services, and processes is what sets successful organizations apart from their competitors. Innovation enables companies to stay ahead of the competition, meet the needs of their customers, foster creativity, handle disruptions, and drive economic growth. Organizations that embrace innovation as a core value will be better positioned for success in the future.

The Procurement department plays a key role in driving innovation in a company. Procurement teams can gain a strategic advantage by assuming responsibility for the supply chain relationship or forging a close collaboration with the supplier. This enables them to discover novel and inventive products, services, and technologies that can bolster the organization's competitive edge. Additionally, procurement can help facilitate partnerships and collaborations with suppliers leading to the development of new and innovative solutions. One of the leading logistics companies, thanks to joint sessions with suppliers, developed customized packaging, which reduced waste and improved efficiency in the supply chain. Hence, procurement has the potential to be in the driver seat for innovation.

Procurement is not only looking to find innovations outside the organization. It can also support innovation by promoting a culture of continuous improvement within it. By encouraging employees to identify areas for improvement and to find new and innovative solutions, procurement can help foster a culture of innovation that drives progress and growth.

Innovation as a strategic enabler

Procurement departments are the focus of the business right now. In these uncertain times, it's their responsibility to find new solutions and drive innovation, and there are several possibilities to do so within the business, but also together with suppliers. This is a huge opportunity to position

the procurement department as one of the most strategic departments in the business. There is a need to shift away from the traditional role of optimal product or service identification to finding more creative, explorative, and inquisitive approaches to solving problems or meeting business needs. Thus, to become strategic and accelerate inventive change, procurement departments must focus on the following dimensions of innovation:

Procurement strategy

When it comes to procurement strategy, the focus is on integrating new and creative ideas into the procurement processes. Spend analytics and supplier relationship management are used to drive better results and achieve procurement goals that align with the organization's overall strategy and objectives. The adoption of new technologies and a more collaborative approach with suppliers is the key to success in this area. To achieve this, procurement leaders need to step away from their focus on spend and instead look at their business margins to facilitate a more proactive and flexible approach and nurture innovation. To operationalize innovation in procurement, one effective method is to establish innovation awards for suppliers. These awards can recognize and reward suppliers who demonstrate innovation in their products, services, and processes. The criteria for the awards can be based on specific innovation metrics such as the number of patents filed or new product development, cost reduction or quality improvement. For example, an automotive company can award suppliers who will develop more efficient batteries for electric cars.

The enablement of the operating model

The enablement of the operating model for internal and external collaboration and execution should include, for example, data analytics to improve efficiency, effectiveness, and cost-savings. This entails the implementation and utilization of scalable automation solutions, such as guided buying with intelligent recommendations, which can reduce both requesters' and buyers' operational tasks, allowing them to concentrate on more strategic subject areas. For example, a procurement platform, which helps to identify potential suppliers by categories and the text provided by the requestor. On this platform, the supplier would see the progress of the case he has been invited to, can check the order, and send the invoice. On the other hand, the buyer can see the progress of the delivery and goods receipt. The Accounts Payable team could see the invoice attached to the order and the goods receipt all in one place, streamlining the process. All in one place, streamlining the process.

Procurement of goods and services

Procurement of innovative goods and services involves identifying the need for such products by consulting stakeholders, conducting market research, and analyzing trends and best practices. Procurement should on one hand develop partnerships and collaborations with suppliers, and on the other hand, with internal stakeholders like R&D or quality departments to bring these innovative products and services into the organization. This can potentially save time and money on research and development. Using a trend radar can help you identify new technologies like biometric sensors, or AI-powered coaching algorithms if a company is a producer of wearable fitness technology. This could help in the production of innovative products.

Supplier engagement

Finally, supplier engagement is the key to fostering an environment of innovation. Procurement should create an environment where suppliers feel encouraged to bring forward new ideas and solutions. This could be done through regular supplier innovation workshops, sharing best practices and success stories, and encouraging collaborations between suppliers. The resultant opportunities to work closely together, co-create solutions, and share knowledge and expertise are likely to be of great interest to suppliers. For example, in the food and beverage industry, many companies have partnered with suppliers to develop plant-based meat alternatives, which have gained popularity among health-conscious consumers, leading to the development of new and innovative solutions for the industry.

Procurement can also promote innovation within the organization by encouraging employees to identify areas for improvement and find new and innovative

solutions. By fostering a culture of continuous improvement, procurement can help drive progress and growth.

For instance, a major retailer has implemented a system where employees can submit ideas for new products or ways to improve existing processes. The procurement team evaluates these ideas and works with the relevant departments to implement the best ones. This has led to a steady stream of new and innovative products, and it has also helped to keep the employees engaged and motivated.

This system can also be connected to a pitch portal, where the ideas of the employees are visible to suppliers, who can react to them and analyze the potential benefits together with the R&D department. The suppliers could also add their own ideas on how to make sure the components stay a step ahead of the market.

Another example is the case of IBM and Cisco having successfully collaborated to generate collective innovation through their global partnership. Together, they aim to bring business insights to the edge of the network for IoT solutions. IBM's Watson leverages analytics and cognitive computing capabilities to process IoT data and contextual inputs, which helps to uncover new patterns and insights. On the other hand, Cisco provides edge and fog processing that connects specific business use cases to data at the edge of the network. By working together, IBM and Cisco can access leading technologies, which they leverage to develop a marketplace offering. Recently, a Canadian telecom company used this solution to improve performance reporting and reduce the frequency of service interruptions by transmitting only important data from remote locations over mobile networks for analytics.

In an interview with successful international procurement professional and podcast host Philip Ideson we discussed the role of procurement in driving innovation. Ideson believes that procurement can be the main driver for innovation, since the R&D capability of the supply base is many times greater than that of an individual company. However, the main challenge faced by procurement is the perception surrounding its engagement later in the process. Ideson suggests that to be considered a partner, procurement needs to do several things, such as keep an eye on the supply markets, find interesting things among suppliers, and develop players early in the process. He also notes that early supplier development is important for developing alternatives and increasing competition in the market. However, he thinks that scaling this kind of capability in the team is hard and, historically, has depended on individuals rather than processes or tools.

The future of procurement innovation

In such disruptive and uncertain times, the need for innovation in the ways of working (supply chain disruptions), as well as finding advantages in the market and possibilities for improvement, is more important than ever.

Yet, these times have brought more change to procurement than the last 30 years combined and has given the procurement department the possibility to be visible as a strategic partner for the business.

Recent trends show that the procurement organization also must learn to be agile and flexible to react to sudden changes and foster innovation by taking calculated risks, encouraging decision-making, and simplifying processes. Facilitating a certain level of agility allows people in the organization to come up with new ideas without being stopped by tedious processes or a management that is too afraid to take a leap.

Automation and technology have a profound impact on business. Procurement technologies must become more consumer–like and intuitive. This will help improve adoption, raise cooperation between stakeholders, and make the process more streamlined.

If the role of procurement can be transformed from that of a business partner to that of leadership, the procurement department will move from a service function to a high-visibility function—a function that not only identifies opportunities but also challenges in the supply chain in general.

In these times, the ability to access data and knowledge will decide success or failure for businesses. Sustainability will continue to be a key focus for many companies, and procurement will play a critical role in identifying and sourcing sustainable products and services.
In future, procurement will rise in prestige and drive innovation within and outside the business, fostering a culture of continuous improvement by, and exploring new technologies and trends in the market.

Key takeaways

In summary, what you should take away from this chapter are the following five points:

1. Innovation is a driving force behind progress, growth, and success in today's competitive world.

2. Procurement has a key role to play in driving innovation within a company by owning the relationship with the supply base, identifying and sourcing new and innovative products and services, and promoting a culture of continuous improvement within the organization.

3. To become strategic and accelerate inventive change, procurement departments must focus on innovation in procurement strategy, enablement of the operating model, and supplier encouragement.

4. Supplier encouragement is key to fostering an environment of innovation and can be achieved by creating opportunities for suppliers to work together, regularly holding supplier innovation workshops, and encouraging collaboration between suppliers.

5. Procurement can also promote innovation within the organization by encouraging employees to identify areas for improvement and by evaluating and implementing their ideas.



The application of Generative Artificial Intelligence in Procurement

Authors :
Pia Steffes
Sarah Wozny
Thorben Riske

The development and utilization possibilities of Generative Artificial Intelligence (Gen AI) are now rapidly gaining interest in private as well as professional lives, despite being in existence for some years now. Various AI-based tools are unfolding their potential in the field of procurement, revolutionizing procurement processes and the professional lives of procurement managers. Without requiring a drastic change in business models, the targeted introduction of Gen AI to specific inefficiencies in the procurement process enhances capabilities, frees up resources, and unlocks new opportunities for development. These potentials qualify Gen AI to be the hot topic of discussion in 96% of organizations' boardrooms (Capgemini Research Institute, 'Harnessing the value of Generative AI,' 2023).

Gen AI is one facet of the broader field of Artificial Intelligence (AI). AI encompasses the development of computer systems capable of performing tasks that typically require human intelligence, including, for example, problem-solving, learning and perception tasks, and language understanding. Potential AI use cases are the analysis of historical supplier performance, delivery time tracking, and prediction of supply chain disruption. Gen AI, however, generates entirely new content in various forms, like audio, video, or text, that has never existed before. It can learn from existing content and apply this knowledge to a new situation. For example, Gen AI supports the procurement manager in preparing a supplier negotiation by creating a negotiation protocol incorporating historic supplier data and current market situations.

What are the possible key application fields of Gen AI in procurement? This chapter presents a selection of use cases, focusing on three main activities conducted by procurement managers daily, which involve managing contracts, conducting tenders, and identifying cost-saving opportunities.

Gen AI supports in managing legal documents

The challenge in working with contracts and legal texts consists of quickly capturing information, understanding the complex structures, and changing legal requirements to the extent of being able to interpret the information and employ it in a valuable way for the individual situation at hand.

- **Advice and explanation**
  Gen AI is used to analyze, generate, and extract information from legal documents and review them at the same time, supporting the procurement manager in risk assessment. By understanding specific clauses and terms, it comprehends and processes text in documents, enabling semantic search and analysis, thereby explaining the document to the user. It answers basic questions about contracts or legal provisions by automatically scanning the text.

- **Templates and customization**
  Gen AI automatically generates a suitable contract template based on pre-defined requirements. As an output, Gen AI provides the contract template in the appropriate corporate design and ensures that the contract is compliant. Based on chat interactions, it helps customize or modify contracts. Users can communicate change requests, and Gen AI makes appropriate suggestions to adapt the contract in a legally compliant way.

- **Contract analysis and renewal**
  Gen AI performs an analysis to highlight potential risks, emphasize important clauses, or point out possible inconsistencies in the provided contracts or legal agreements. It can manage contracts by providing reminders for renewals or terminations and assembling metrics on contract performance.

Gen AI accelerates the tender process

During the tendering process a lot of data points from different suppliers are acquired, oftentimes in various formats, that need to be structured, analyzed, and compared by the procurement manager, which is predominantly a manual and time-consuming task.

- **Market research**
  Gen AI supports the procurement manager in collecting real-time information on specific supplier markets, their capabilities, and current pricing information, as well as relevant price indices.This provides the procurement manager with a solid basis for later evaluation and benchmarking of supplier answers as well as leveraging for more effective negotiation strategies.

- **Compliance monitoring**
  Gen AI monitors procurement processes to ensure compliant operations. Especially when it comes to developing complex EU tenders with legal requirements, the use of Gen AI is highly efficient in reducing the risk of legal and regulatory issues.

- **Automating tasks**
  Automated generation of RFPs and RFQs based on predefined criteria ensures not only a stable quality of tenders but also a low effort of creation and is the basis for further automated evaluation of supplier answers due to standardization. Customized reports, documents, and summaries can be created automatically, making it easier to review and assess tenders.

- **Data analysis**
  Automated analysis of bid answers ensures an objective and equal evaluation of data and facilitates the comparison and, subsequently, the selection of suppliers. Additionally, Gen AI identifies trends and patterns by analyzing market data or historical supplier data, enriching the supplier picture, and enabling a more profound awarding decision.

Gen AI supports cost saving goals

In the dynamic procurement landscape, companies face a variety of challenges in their search for cost savings. To remain at a competitive level in the market, corporate goals are firmly associated with cost reduction measures and the continuous establishment of a cost-efficient strategy. Besides having transparency in their spending, organizations are challenged to proactively manage cost savings via strategic decision and resource optimization while remaining at operational efficiency and maintaining quality standards.

- **Efficient supply chain management**
  Leveraging Gen AI in supplier management facilitates the identification and monitoring of reliable partners, detecting positive reviews and cost-effective offerings and ensuring a streamlined and resilient supply chain while reducing transportation cost and costly delays by route optimization.

- **Transparency and predictive insights**
  Gen AI enables organizations to gain a comprehensive view of their spending patterns, and by combining them with predictive insights into future trends, it empowers procurement professionals to proactively adjust cost-saving strategies and resource allocation to respond to market conditions and mitigate risk in the most efficient way. The process of budgeting and cash flow forecasting is substantially supported by the functionalities of Gen AI.

- **Process optimization and automation**
  By assisting in streamlining processes through automation, e.g., by reducing mainly manual and repetitive work, Gen AI enhances operational efficiency, process lead time, and output accuracy.

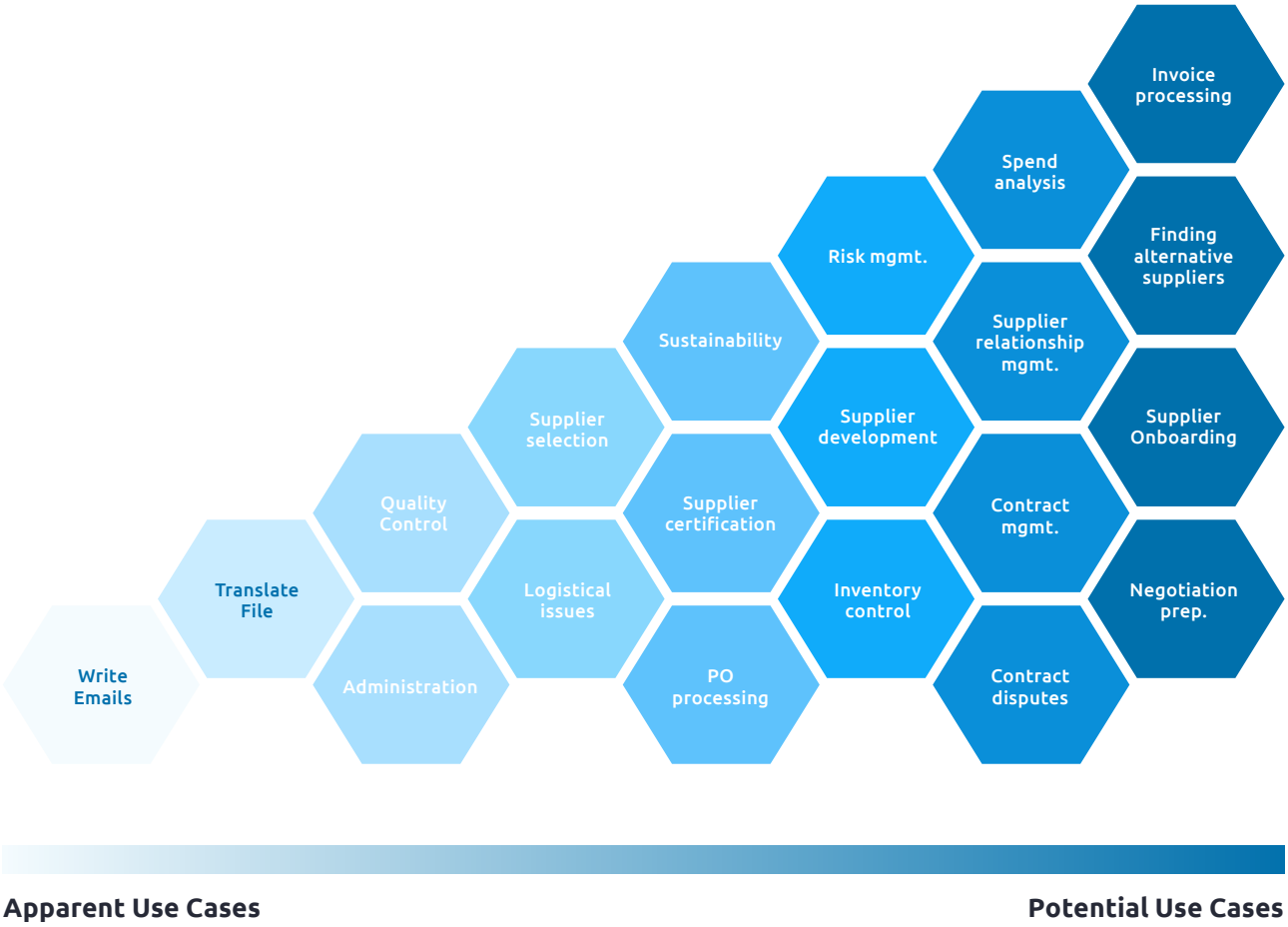


Figure 6: Gen AI Use Cases

While these three use cases only give a brief insight, Gen AI has the potential to transform knowledge worker roles and reduce their workload, as recognized by 70% of organizations (Capgemini Research Institute, 'Harnessing the value of generative AI,' 2023), this involves a shift from traditional creation activities to reviewing and refinement. Consequently, Gen AI can not only revolutionize but also accelerate the ways of working across departments and industries. Four in ten organizations have already formed dedicated teams and budgets for Gen AI, while the other half is actively taking this step within the next twelve months (Capgemini Research Institute, 'Harnessing the value of generative AI,' 2023). By leveraging its power, companies are not only at the forefront of innovation but are simply keeping up with the standard to not fall behind.

The right time to act is now – how to start

> *Ideas don't come out fully formed, they only become clearer as you work on them. You just must get started.*
>
> ***MARK ZUCKERBERG,*** *founder, chairman and CEO of Meta*

The most difficult step is always the first one. Start with a gap analysis and then deep dive into the technical functionalities and requirements.

1. **Assessment of use cases:**
   Leveraging Gen AI in supplier management facilitates the identification and monitoring of reliable partners, detecting positive reviews and cost-effective offerings and ensuring a streamlined and resilient supply chain while reducing transportation cost and costly delays by route optimization.

2. **Data readiness:**
   The organization's data infrastructure must be prepared for the integration. This involves assessing the status quo of master data management, data quality, and data cleaning techniques, building data flows from different sources to databases, and practicing active data stewardship. Establishing security measures suitable for the later employed technology is a must.

3. **Skill development:**
   No matter how seamlessly Gen AI integrates into processes, training is essential for applicants to effectively use it. This could mean employing a team with AI expertise and data science knowledge or collaborating with a knowledgeable external partner.

4. **Technology selection:**
   The choice for the right technology is based on your defined goals and field of application. Factors like complexity of tasks, data volume to manage and level of customizations must be considered.

5. **Scaling pilot projects:**
   Conducting pilot projects to test the feasibility and effectiveness of the technology on a smaller scale offers the opportunity to revise the approach before scaling it to a broader level in the organization.

6. **Ethical considerations**
   Compliance and governance regulations should always be the basis for any actions. Establishing trust among users in AI systems is crucial. Strengthening user acceptance can be achieved by creating transparent guidelines for AI use, e.g., by addressing data privacy or bias mitigation.

Key takeaways

The key impact Gen AI has on the procurement processes and managers can be summarized as follows:

- Gen AI supports the procurement manager in collecting real-time information on specific supplier markets, their capabilities, and current pricing information, as well as relevant price indices. This will provide the procurement manager with a solid basis for later evaluation and benchmarking of supplier answers as well as leveraging for more effective negotiation strategies.

- The applications of Gen AI in procurement are diverse. Build SMART use cases to set a clear and measurable scope of implementation. Also, fast and seemingly small automation improvements have big impact on the procurement managers' daily operations.

- Gen AI is not replacing the role of the procurement manager but rather enhances and streamlines the activities, like a supporting virtual assistant.

- The transformational power of Gen AI is unmatched by that of traditional methods, without disrupting well-functioning operational models.

- By leveraging Gen AI, the procurement function can strategically position itself as a pioneer within the company, contributing significantly to or redefining substantial value.





SECTION 2

PROCUREMENT PRIORITIES

Author :
Nimish Sarraf

We conducted a survey to highlight our clients' perspective on key challenges and trends. Through this study, we analyze these challenges to:

1. Be prepared for them and recognize them when they arise
2. Recover from the impacts associated with these challenges and trends
3. Understand how procurement organizations can adapt to these challenges and remain competitive
4. Ensure a solid understanding of the importance of procurement and the role it plays within the company

We tapped into our vast network of client contacts in leadership positions at companies all around the world to gather survey responses. Most of our contacts polled are within our clients' procurement organizations, however, we also contacted some finance and supply chain leaders to provide additional perspective. Also represented in our sample set were clients from all over the globe, including the Americas, Europe, and Asia. We shared a survey with these contacts that consisted of a wide range of questions ranging from procurement operations to strategy, basic technology support to advanced AI/ML applications, and supplier performance monitoring to intentional supplier risk and sustainability management.

The overall results pointed to some interesting takeaways as they relate to digitization and the use of advanced technology in procurement applications, the importance of risk and sustainability (both in operations and supplier management), and the skillset required to enable the procurement function.

Optimal procurement risk management to excel

Authors :
Jan Piet Hoekstra
Shiva Prasanna
Robin Jaspers

For the last three decades, the geopolitical development and globalization have led to increased global commerce and steady economic growth. Even with some major disruptions like 9/11 or the financial crisis in 2008, it seemed that the global economy would continue to grow and goods and services would flow around the world with few interruptions. Most companies, therefore, neglected or at least underestimated the need for thorough risk management, which led to severe problems and high losses in the recent crisis situations following the pandemic, wars, conflicts, and inflation. For this reason, we believe that it is worth taking a closer look at the supply chain and procurement risk management.

Every time a business decides to make a purchase, there are inherent internal and external risks that

come along with the decision. Internal risks stem from the organization's operations, employees, and processes, while external risks enter through the supply chain in the form of global events, political events, supplier relationships, or outside actors.

By proactively addressing these risks and implementing effective risk management strategies, an organization can minimize the impact of potential disruptions and maintain the stability of its procurement function. Procurement risk management involves identifying, analyzing, mitigating, planning, and monitoring potential risks to the supply chain to ensure that the organization can remain operational and can react swiftly in the event of a disruption (see also Section 1, 'How to manage your procurement in the era of global supply chain decoupling'). Therefore, it is critical to understand how risks affect the organization, what types of risks exist, and what opportunities exist to mitigate them.

It is important to note that risk management is not a one-time event but rather a continuous process that requires regular risk assessments to ensure that the organization is prepared for any potential disruptions. The risks we face today may not be the same as tomorrow. We, therefore, asked several procurement experts to explain the risks they face today.

In our survey, we polled participants to identify their biggest perceived risks. The three biggest risk areas are external risks, legislation, and lack of available resources, as we will elaborate in the following section.

External risks

Lack of available resources	**22%**
Legislation	**17%**
External risk factors	**53%**
Others	**8%**



External supply chain risk refers to the potential disruption that can occur in a company's supply chain. A supply chain is a complex network of suppliers, manufacturers, distributors, and retailers, all working together to produce and deliver products or services to customers. Any disruption or breakdown at any point in the chain can have serious consequences for the entire operation.

There are many potential sources of supply chain risk. On the one hand, there are natural disasters such as earthquakes, hurricanes, or floods that can disrupt transport routes or damage production facilities, leading to delays or even complete shutdowns. On the other hand, there is political instability, trade wars, or changes in regulations that can disrupt the cross-border flow of goods or make the procurement of raw materials and components more difficult or expensive.

The COVID-19 pandemic highlighted the importance of supply chain risk management. Lockdowns and travel restrictions disrupted transportation routes and caused delays in the delivery of goods, while closures of manufacturing facilities and warehouses disrupted production and distribution. Companies that had diversified their supply chains or had backup plans in place were better equipped to weather these disruptions, while those that relied heavily on a single source or location were more vulnerable.

To manage supply chain risk, companies can take several steps. First, they can identify potential sources of risk and assess the likelihood and potential

impact of each one. This can involve analyzing the supply chain at every level, from raw materials to finished products, and identifying the critical components and suppliers that are most vulnerable to disruption. Second, they can develop contingency plans for each source of risk, such as alternative suppliers or transportation routes. Third, they can implement monitoring and tracking systems to quickly identify any disruptions and take action to minimize their impact.

In conclusion, supply chain risk is a significant concern for companies that rely on complex global networks to produce and deliver their products or services. By identifying potential sources of risk, developing contingency plans, and implementing monitoring and tracking systems, companies can better prepare themselves to withstand disruptions and minimize the impact of any potential disruptions.

Below are the common external factors that are the main cause of supply-chain disruption and risk, along with associated mitigation strategies for each.

- **Price instability**
  Have an additional budget to cover any unexpected price increases and additional expenses. Be ready to negotiate any increased prices with your supplier directly. Try to lock in low fixed rates. During transactions if there is a change in price, that would impact the timeline of releasing the final purchase order as per the latest pricing of suppliers and that would cause delay in the approval process as well.

- **Increased lead time**
  Regular contacts with suppliers will help to analyze market trends and raise necessary questions on the process map to validate and eradicate non-value-added steps or reduce waste in the production lifecycle. The increase in lead time will impact the delivery of the raw materials, which would ultimately result in a delay in shipping the finished good (FG) to customers.

- **Supply chain disruption due to natural and man-made Disasters**
  Global supply chain disruptions could happen due to natural disasters like earthquakes, volcanic activity, landslides, drought, wildfires, and storms, as well as man-made disasters such as the pandemic, the Russia-Ukraine war, and even a cargo ship getting stuck in the Suez Canal. The best way to avoid disruption of the supply chain is by having a diversified supplier set up where the dependency on a particular supplier can be minimized and secondary suppliers can be utilized to have the demand fulfilled.

- **Complicated/complex projects**
  To have clear communication and understanding of the project and its procurement demand. Dynamic demand would create a lot of challenges between buyer and supplier; it's better to have a clear and clean demand and set expectations. The more complicated the demand, the more challenges are expected to arise. The high criticality and complexity of the project may cause more challenges for both the parties.

- **Corruption/fraud**
  Have a strict policy for all aspects of business so that everything is automated through a system and there is no manual intervention. This will help to have a transparent procurement process and reduce blind spots. Ensure that the right compliance controls are in place throughout the process. Having non-disclosure agreements (NDAs) and effective conflict management in the workplace can reduce the risk of fraudulent activities.

- **Multiple work environments/tools**
  Usage of limited channels and common tools would ease the workflow and enable more collaboration for business transactions.
  The best case would be the transmitting of Purchase Orders (POs) through Electronic Data Interchange (EDI), where two ERPs are integrated into a single channel, but in most cases, the order needs to be printed and then emailed to the supplier; hence, multiple tools are being used.
  Supplier governance and performance are the key areas that need to be focused on, and using limited and effective tools would improve the overall performance.

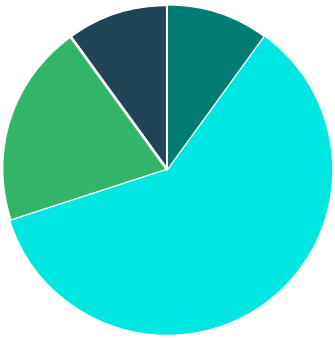
As organizations approach supplier and supply chain risk management, it is evident that there is a need for a better governance model to mitigate risks pertaining to suppliers. It can be achieved by:

- Effective alert mechanism with regards to supply chain disruptions
- Usage of predictive analysis and classical due diligence methodologies

Let's look at the response with regards to the question whether organizations are able to deal with sudden supply disruptions. From the responses received, more than 60% of the respondents confirmed that they were able to manage sudden supply disruptions. This is possible in the following ways:

- Implied lessons learned from past experiences.
- To be aware and adopt best practices across the globe.
- Have an effective network of channels to gather information on a proactive basis.

Extremely Well	11%
Somewhat Well	57%
Neutral	22%
Somewhat not Well	8%
Extremely not Well	2%





Internal risks

Like any other business function, procurement is not immune to internal risks that can significantly impact an organization's success. Internal risks are those factors that cause disruptions in internal operations or processes. These can vary from machine break downs or production problems to IT failures. Only 20% of the respondents claimed that they were able to meet the needs of their business very well.

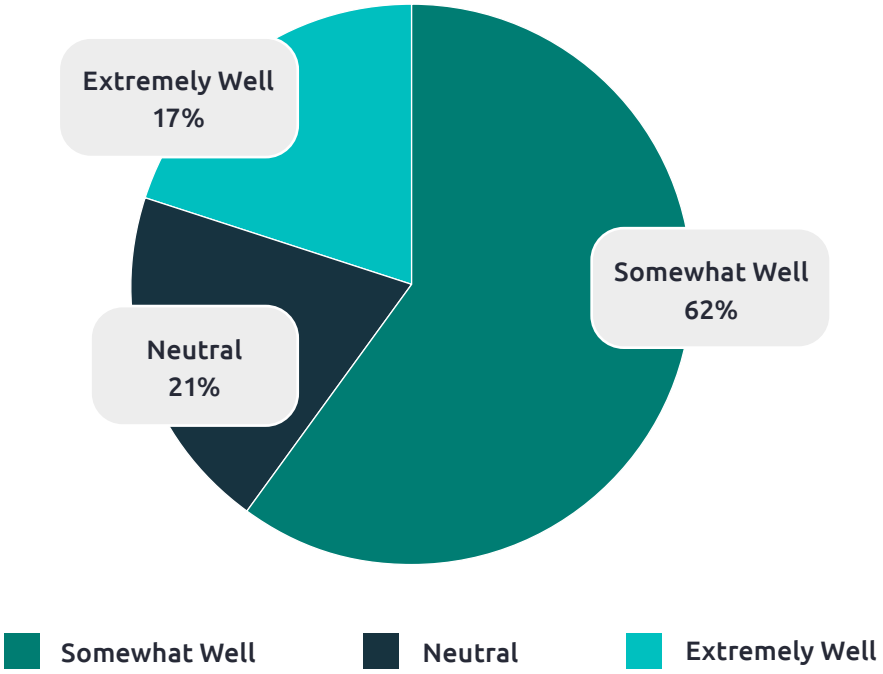


Figure 7: We asked respondents: How well do you think your procurement organization is currently meeting the needs of the business?

Our respondents replied that they face challenges in meeting their organizational needs and we found that those challenges involved data, people, and strategy.

Data quality plays an important role in enabling businesses to meet their needs

Within procurement organizations, data needs to be accurate and visible due to the important role it plays in the processes of forecasting and spend analysis. Data can provide insights into supplier costs, trends, and capabilities. This information can be used to negotiate better prices, identify cost-savings opportunities, and select the most qualified suppliers.

The risk of not having accurate data can have several effects. A spend analysis may lead to unclear categorization or invalid amounts and affect the decision-making process in defining opportunities to improve spend.

Finding people with suitable procurement profiles is a challenge

Procurement requires a high level of expertise and specialized knowledge. If the procurement function does not have the necessary expertise, it can lead to poor decision-making, inadequate contract negotiation, and suboptimal supplier selection.

Determining procurement strategy and needs

Non-compliance with policies and procedures is one of the internal risks faced by the procurement function. Procurement policies and procedures are put in place to ensure that procurement activities are conducted ethically, transparently, and in compliance with relevant laws and regulations. Failure to comply with these policies and procedures can lead to reputational damage, legal penalties, and financial loss.

Inefficient procurement processes are a big threat to procurement departments, as they can lead to delays, poor decision-making, and unnecessary costs. This can be a result of poor communication between procurement teams, a lack of standardization in procurement processes, and the use of outdated technology.

How to mitigate risks

To effectively mitigate these internal risks and bolster the resilience of the procurement function, organizations can adopt several proactive measures:

Robust procurement policies and procedures:
Implement and uphold clear and comprehensive procurement policies and procedures. These guidelines should outline ethical standards, compliance requirements, and best practices to ensure that procurement activities are conducted transparently and in accordance with relevant laws and regulations.

Effective supplier management:
Develop a robust supplier management framework that includes rigorous supplier evaluation, monitoring, and performance assessment. Establishing strong supplier relationships and holding suppliers accountable for their commitments can help mitigate risks stemming from supplier-related issues.

Leveraging modern technology:
Embrace cutting-edge technology and procurement tools to streamline processes and enhance data accuracy. Modern procurement software and data analytics can provide valuable insights into supplier performance, market trends, and cost-saving opportunities, enabling more informed decision-making.

Investing in expertise:
Ensure that procurement teams possess the necessary expertise and skills to navigate complex sourcing decisions, negotiate contracts, and manage supplier relationships effectively. Regular training and professional development can enhance the capabilities of procurement professionals.

Promoting ethical culture:
Foster a culture of transparency, ethics, and integrity within the procurement function and the organization. Implement and enforce codes of conduct and ethical guidelines to prevent fraudulent activities and corrupt practices in procurement.
By effectively managing these internal risks, organizations can ensure that their procurement function contributes positively to the success of the organization.

Key takeaways

Globalization and geopolitical development:
The past three decades have seen significant globalization and economic growth, but this has also led to increased risks, making thorough procurement and supply chain risk management crucial.

Proactive risk management:
Organizations must proactively identify, analyze, and mitigate both internal and external risks associated with procurement decisions.

Continuous process:
Risk management is not a one-time event; it's an ongoing process that requires regular risk assessments to adapt to changing circumstances.

External risks:
External risks in the supply chain include natural disasters, political instability, trade wars, and regulatory changes. The COVID-19 pandemic highlighted the importance of diversifying suppliers and having contingency plans.

Mitigation strategies:
To mitigate external risks, organizations should budget for price instability, manage lead times, diversify suppliers, and adopt common tools for collaboration.

Internal risks:
Internal risks can stem from issues like data quality, talent shortages, non-compliance of policies, and inefficient processes within the procurement function.

Mitigating internal risks:
Mitigating internal risks involves implementing robust procurement policies, effective supplier management, modern technology, and expert procurement teams.

Governance and alert mechanisms:
Organizations need better governance models and alert mechanisms for supply chain disruptions, predictive analysis, and due diligence methodologies to manage risks effectively.

Lessons learned:
Organizations that have successfully managed supply disruptions have learned from past experiences, adopted best practices, and maintained effective networks for proactive information gathering.

Success through risk management:
Effective procurement and supply chain risk management contribute positively to an organization's overall success.

These takeaways emphasize the importance of proactive and continuous risk management in procurement and supply chain operations to navigate the complexities of today's global business landscape.

Unleashing the power of AI in digital procurement: Opportunities, challenges, and the path to innovation

Author :
Greg Bateup

Digital procurement, once regarded as the esoteric art of wielding enterprise resource planning (ERP) via codes and spreadsheet extracts, is now amid a fundamental shift.

A series of seemingly unrelated phenomena may have created the perfect conditions in which emerging procurement technologies can thrive—the COVID-19 pandemic angled businesses towards a digital-first approach, digital natives make up an increasing proportion of the modern workforce, and deeply interconnected global supply chains are presenting complexity that may soon exceed human decision-making capabilities, among other trends.

The response to these changes for many organizations has been to embrace digital solutions that drive value within procurement, such as intelligent ERP systems, artificial intelligence (AI)-based sourcing tools, sustainability monitoring, risk management, or end-to-end (E2E) control tower decision tools. These innovative solutions not only enhance efficiency and reduce costs but also promote sustainable and ethical practices throughout the supply chain. Thus, the following article explores various possibilities and opportunities for how technology is reshaping procurement while focusing on the challenges and benefits of integrating AI into the procurement function.

Technology & procurement survey

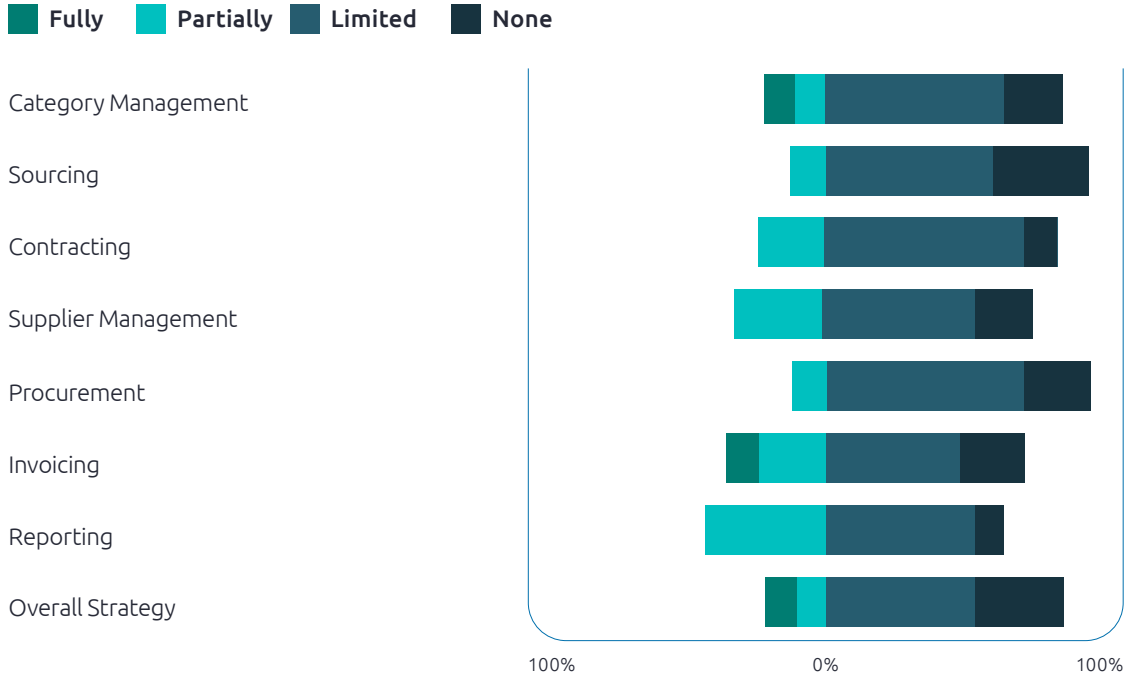
Capgemini conducted a survey to explore the engagement and deployment challenges of various forms of technology within procurement. We engaged with senior leaders within procurement from a range of industries and had participation from organizations of varying sizes.

The survey we conducted indicated that there was a generally positive view of the support provided by digital solutions for business goals. Eighty percent of the participants indicated a somewhat good or neutral view of the contribution of technology solutions (Oracle, SAP, Coupa, and Power BI). However, it was indicated that there are issues when adopting these solutions.

There seems to be hesitancy around the adoption of artificial intelligence (AI) and machine learning (ML) tools. As earlier research indicates, this could be due to factors such as technology maturity and a lack of available in-house resources with relevant competence. Building on this, our research shows that lack of budget and missing data visibility are also contributing factors to slow adoption. In procurement, invoicing and reporting were areas where AI/ML technologies saw the most adaptation, while sourcing, core procurement, and strategy saw the least use of these technologies.

How is your Procurement technology stake making use of AI / ML to automate decision making?

More Details



Our survey also revealed that common challenges to adopting digital procurement solutions are seen in the areas of IT capacity and capability, budget constraints, and concerns about integrating solutions into complex IT ecosystems (legacy, geography).

According to our expertise, visibility of procurement data (spend, payables, forecast) in organizations is pivotal to enabling quality decision-making. Extracting meaningful information from large, complex procurement data sets enables businesses to align maps and territories to uncover cost savings opportunities, make strategic sourcing decisions, and identify emerging risks.

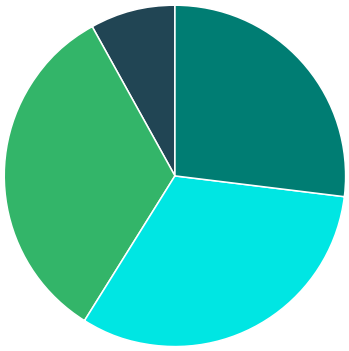
In our survey, procurement data visibility was assessed as good or very good by 60% of the respondents. Conversely, 40% of our respondents rated visibility as fair or poor. Therefore, we noted that there are still enduring challenges around data quality and consistency, despite advanced procurement solutions. Therein lies a pertinent lesson: that newer technology should not be conflated with progress. As reflected earlier, complex application ecosystems that are not integrated contribute significantly to this issue. Coupled with the enhancement of business processes, organizations should seek out solutions that enforce process discipline and actively improve data quality.



How would you rate the visibility of your Procurement Data (E.g. spend, payables, forecast) across your organization?

More Details

Very good	27%
Good	32%
Fair	33%
Poor	8%



The above insights bring into focus some of the most pertinent opportunities and challenges affecting the adoption of digital procurement technologies. The survey reveals the optimistic view that most businesses have toward more established technology solutions. Yet, it also underscores the hesitancy hindering the adoption of more advanced technologies like AI and ML in procurement.

Despite this slow adoption, current trends around AI establish this family of technologies as a significant player in the ever-evolving landscape of procurement technology—from predictive analytics to automated sourcing tools, it offers a host of benefits such as increased efficiency, cost savings, and improved sustainable practices.

The following section will dive deeper into the capabilities of AI, providing insights into its applications in procurement, its challenges, and its potential to transform the function. AI, with its ability to process, analyze, and learn from vast amounts of data, is perhaps one of the best tools to address some of the challenges that have been highlighted, including data visibility and quality. Simultaneously, this broader conversation falls within the larger context of trending procurement technology themes, charting a course between the tried-and-true technologies of the past and the transformative potential of AI and machine learning.

But what is artificial intelligence (AI)?

AI is known as a technology which can solve cognitive problems, usually being associated with human intelligence, such as problem-solving, pattern recognition, and learning. Powered AI digital tools can perform tasks that would typically require human intelligence. These tasks can range from recognizing images to making decisions based on complex data analysis. Thus, with the help of AI, valuable insights with fewer human interventions and human errors can be analyzed and processed out of structured and unstructured data. However, companies interested in making use of the technology should understand that AI covers many technologies before fully taking advantage of all that AI has to offer. For example, AI covers machine learning, logic-based AI systems, as well as semantics-based AI.

Machine Learning (ML) represents a sub-discipline of AI that automatically identifies and extracts patterns between variables based on large data sets. Using computational methods and mathematical models, ML algorithms can learn from data, provide predictions, or take decisions without being explicitly programmed. Thereby, specific tasks can be improved.

Logic-based AI systems cover robotic process automation which can organize and store structured data and makes decision with rules.

Natural Language Processing (NLP) is another sub-discipline of semantics-based AI which assesses textual content for language translations, text summarization, or sentiment analysis. Some popular examples of NLP applications include virtual assistants like Siri and Alexa, and chatbots.

Now that a generic overview of AI technology has been shared, an understanding of AI use cases is indispensable. In procurement, there are five main use cases where AI can deliver value. These use cases have been listed below:

- **Predictive analytics:**
  Analysis of historical procurement data and identification of patterns to predict future demand, potential supply chain disruptions, and pricing trends. This can help procurement professionals make informed decisions about purchasing, negotiating contracts, and managing inventory levels.
  Examples: SAS demand-driven planning and optimization, IBM Watson supply chain insights, JAGGAER's Advanced Sourcing Optimizer

- **Automated sourcing:**
  Automation of the supplier discovery process by analyzing supplier data and identifying potential suppliers based on criteria such as price, quality, and delivery time. This can save procurement professionals time and effort in sourcing and evaluating potential suppliers.
  Examples: Zycus iSource, Jaggaer ONE, SynerTrade

- **Spend analysis:**
  AI can analyze procurement data to identify patterns and trends in spending. This can help procurement professionals identify areas where cost savings can be achieved and make informed decisions about negotiating contracts and managing spending.
  Examples: Coupa Spend Analysis, SAP Ariba Spend Analysis, Ivalua

- **Contract management:**
  Analysis of contract data and identification of key clauses and terms that require attention. This can help ensure that contracts are being effectively managed and that suppliers are meeting their contractual obligations.
  Examples: Zycus iSource, Jaggaer ONE, SynerTrade

- **Supplier relationship management:**
  Provide insights into supplier performance, allowing procurement professionals to make informed decisions about supplier relationships and identify opportunities for improvement.
  Examples: SAP Ariba Supplier Risk, SynerTrade Supplier Management, Oracle Procurement Cloud

Despite the potential benefits of AI in procurement, there are also several challenges that need to be addressed and an understanding of the unintended 'second order' effects of the spread of this technology. In the following section, our Global Head of Cognitive Procurement Services, Greg Bateup, has pointed out the technical and organizational challenges of AI in procurement:

Challenges of AI in procurement

AI algorithms rely on substantial amounts of high-quality data to work effectively. However, procurement data can be complex, inconsistent, and spread across multiple systems, making it difficult to gather and use effectively.

From an implementation and integration perspective, integrating AI into existing procurement processes can be challenging, as it requires significant changes to existing systems and processes. This can involve significant investment in technology, infrastructure, and personnel.

AI algorithms can also be complex, making them difficult for non-technical users to understand and use effectively. This can lead to resistance from procurement teams, who may be hesitant to adopt modern technologies that they do not fully understand.

AI algorithms can be biased if they are based on incomplete or biased data, which can lead to unfair treatment of suppliers or other stakeholders. It is important to ensure that AI applications are developed and used ethically and transparently.

While AI can provide valuable insights and recommendations, it cannot replace human expertise entirely. Procurement professionals still need to be involved in decision-making processes to ensure that AI recommendations are appropriate and aligned with business objectives.

The recent bounds in AI technology have led to prominent technology leaders and governments requesting various forms of hiatus on the development of AI technology and the establishment of guardrails. Like the shift initiated by General Data Protection Regulation (GDPR) legislation, this future legislation presents uncertainty to the procurement community in how and where it is deployed, if at all.

Finally, cybersecurity considerations must be made for AI-powered procurement technologies. Both as a threat and a victim, AI can first be used to mount increasingly sophisticated attacks, mimicking human behavior accurately when presented to the buyer or supplier; conversely, it may be possible to feed an AI system with manipulated data to effect supplier selection and pricing decision-making processes, among others.

Second degree effects of AI adoption

We should also consider the potential unintended consequences of the adoption of intelligent technologies in procurement. As AI-powered systems become more advanced, they may tend to converge towards similar outputs. This can lead to a lack of diversity in AI applications, resulting in a limited range of solutions.

Another second-degree effect of AI is the potential for bias or gaming in AI-powered systems. AI is only as unbiased as the data it is trained on. If the procurement data is biased or incomplete, the AI system may learn to replicate those biases in its outputs. An analogy would be the use of search engine optimization (SEO) algorithms in search engine technologies—it can be argued that the

companies most competent at search-engine result manipulation are best represented in search results, not necessarily the most suitable result for the user. The effect on the procurement end-user could have a number of adverse outcomes, including: the user may be presented with a biased selection when using supplier selection systems or reinforce existing supplier biases; inefficiencies could permeate the process as a result of false or misleading information; the trust and transparency in the procurement process can be eroded; or both suppliers and users may become skeptical of the output produced by AI systems.

Despite rapid advancements in AI, there are still theoretical limitations to what AI can achieve. Regarding supplier selection, it may be challenging for a 'smart' tool to assess nuanced factors such as supplier reputation, cultural fit, or innovation potential. If these capabilities did exist, they would be a product of human design and, as such, raise their own challenges.

Demand forecasting is another area for the application of AI within procurement; however, in volatile, unpredictable situations, its value is limited—further still, this anomalous data will then fall into historic data sets, altering the tools' definition of 'normal' circumstances and affecting the quality of future decisions. Conversely, this may improve the capability of the tool to foresee adverse events that are developing. As a final example, innovation in procurement could be hindered by overlooking opportunities for new unconventional buying strategies, business models, or even new products and services that have the potential to redirect the strategic direction of a business.

To conclude, AI systems rely on data modeling to make predictions and decisions. However, real-world events are often unpredictable, nuanced, and complex, making it difficult for AI systems to accurately model them. As such, there is a risk that AI systems may oversimplify complex problems or miss crucial factors. One could argue the same blind spots exist in human analysis and interpretation of real-world events, but we must be cautious when using AI to mitigate these weaknesses and not exacerbate them.

All said, probably everyone knows about the new generation of AI represented by ChatGPT (Generative Pre-trained Transformer). This technology can extract valuable information from vast amounts of textual data. Through rigorous training, ChatGPT developed the ability to produce intricate and remarkably human-like output, and it possesses the capacity to generate textual responses.

We were curious how ChatGPT imagines a future world of AI in procurement. Thus, the following paragraph is ChatGPT's response to the prompt, "Describe a typical day for a procurement manager in the future where AI is commonplace and how this would be different from today."

A future imagined with AI in procurement

Ashley is a purchasing manager at a manufacturing company. She starts her day by checking her email and sees an email from an AI-powered supplier discovery and evaluation tool, recommending a new supplier for one of the materials she has been sourcing. Ashley clicks on the link and is taken to the supplier's profile, which includes detailed information about the supplier's capabilities, quality standards, and pricing. Ashley is impressed and decides to add this supplier to her list of approved suppliers.

Later in the morning, Ashley receives an email from a supplier who is requesting a change to the terms of their contract. Ashley uses an AI-powered contract analysis tool to quickly review the proposed changes, identify any potential risks or compliance issues, and provide a response to the supplier. The tool also suggests alternative contract clauses that may be more favorable to the company, allowing Ashley to negotiate a better deal. The tool also integrates with a blockchain-based contract management system, which ensures that the contract terms are immutable and transparent.

After lunch, Ashley receives a notification from a virtual assistant that a supplier has responded to a request for proposal. The assistant provides a summary of the supplier's proposal and suggests next steps, such as scheduling a meeting with the supplier or requesting more information. Ashley approves the suggestion and uses an augmented reality (AR) tool to visualize and interact with the supplier's products. The AR tool allows her to evaluate the products in detail with the R&D team.

Later in the afternoon, Ashley uses a predictive analytics tool to analyze inventory levels and predict future demand for materials. The tool provides insights into which materials are likely to be in high demand in the coming weeks, allowing Ashley to order the right materials in advance and avoid stockouts. The tool integrates with a cloud-based enterprise resource planning (ERP) system, which allows Ashley to manage inventory and production processes in real-time. She uses a 3D printing platform to send and quickly produce prototypes of new bespoke spares to evaluate in production.

Later in the day, Ashley is working on a sourcing strategy for a new product line. She uses the predictive analytics-based demand forecasting and planning tool to get insights into the market trends and demand for the product. Based on the data, she develops a sourcing strategy that includes multiple suppliers and a mix of make-to-order and make-to-stock production.

As the day ends, Ashley reviews a dashboard of supplier performance metrics generated by an AI-powered supplier performance management tool. The dashboard provides insights into each supplier's delivery performance, quality ratings, and compliance with sustainability requirements. Ashley uses the information to identify areas for improvement and uses a smart contract platform to automate payment processing and ensure that suppliers are paid promptly.

Overall, as the above text suggestion by ChatGPT shows, Ashley relies on a range of AI-powered tools and technologies throughout her day to manage procurement processes more efficiently and effectively. By leveraging the power of AI, Ashley can make data-driven decisions, automate routine tasks, and transform collaboration with internal functions and external partners.

In conclusion, while AI has undeniable potential to improve procurement effectiveness, we need to carefully consider its challenges and second-degree effects. We need to ensure that AI systems are developed with fairness and accuracy in mind, and that we are aware of the theoretical limits of AI.

Ultimately, the successful adoption of AI in digital procurement enablement requires a combined approach where human expertise is combined with the power of AI to drive innovation and create value—the foundations of Industry 5.0. By addressing these challenges and harnessing the power of AI, organizations can unlock the full potential of procurement data, achieve their business objectives, and work towards creating a more innovative and sustainable future.



Sustainability as a solution for future generations' needs

Author :
Jan Piet Hoekstra

Business sustainability—both in terms of ecological sustainability and the employability of staff—is an increasingly important theme. Organizations can make a significant impact by redesigning their procurement practices. For example, companies can transition to using sustainable materials for their packaging. Additionally, the rapid acceleration of technological advancement shifted the division of labor between humans and machines. For example, in the previous chapter, we saw the impact of AI on the effectiveness of procurement.

With the growing awareness of environmental and social issues, organizations consider sustainability as a crucial factor in their procurement decisions. The entire life cycle of a product—from the sourcing of raw materials to their disposal—is analyzed. We asked our respondents how they perceived their impact and performance.

The organization of tomorrow

None of the respondents mentioned that the procurement department is meeting the sustainability needs of the organization extremely well. As such, we took a closer look at the current obstacles and the most pressing challenges faced by the procurement function that are preventing them from meeting the sustainability needs of the organization: lack of prioritization—both by the business itself and by the government in terms of legislation—and the need for investments.

1. Low prioritization by the business

Sustainability has been the fastest-growing strategic business priority in the past couple of years, with more and more companies turning their focus on this topic. Moreover, consumer manufacturing and retail CEOs report that environmental, social, and governance (ESG) and corporate social responsibility (CSR) are their second priorities.

One way that organizations are incorporating sustainability into their procurement practices is by developing supplier codes of conduct. These codes outline the organization's expectations from suppliers in terms of environmental and social responsibility, such as reducing greenhouse gas emissions, eliminating child labor, or respecting human rights. By setting these expectations, organizations can encourage suppliers to adopt more sustainable practices and ensure that their own operations are aligned with their sustainability goals.

Organizations are already starting to evaluate suppliers based on their sustainability performance. This evaluation can involve assessing suppliers' environmental and social practices, such as their use of sustainable materials, labor practices, and waste reduction strategies. By working with suppliers who prioritize sustainability, organizations can reduce their own environmental and social footprint and promote sustainable practices throughout their supply chain.

Another way that organizations are promoting

sustainability in procurement is by using eco-labels and certifications. These labels indicate that a product has been produced in a way that meets specific environmental or social standards, such as using renewable energy sources or avoiding harmful chemicals. By choosing products with eco-labels, organizations can make more informed decisions about the environmental and social impacts of their procurement decisions.

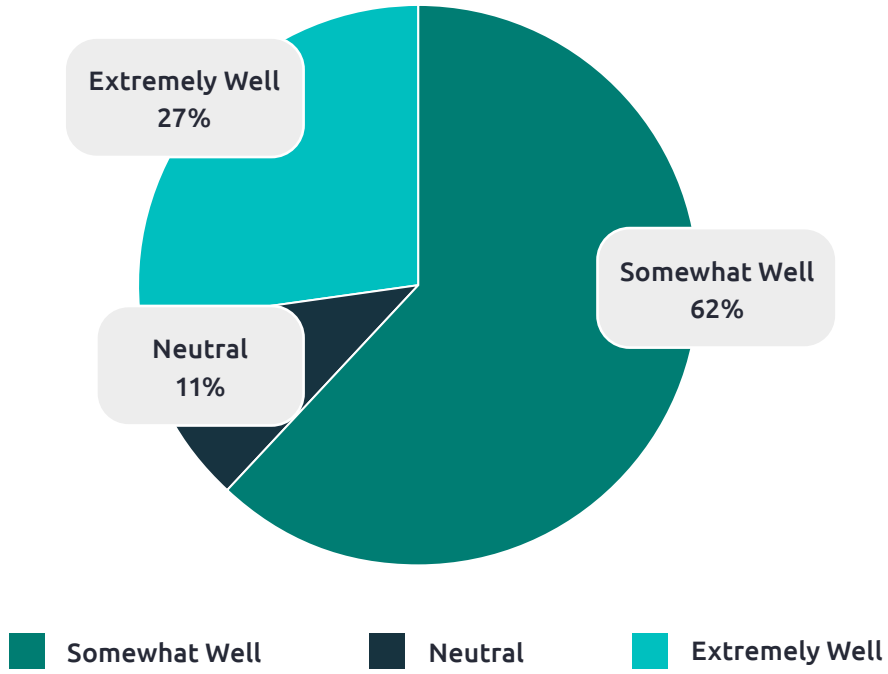


Figure 8: We asked our respondents: How well is your procurement organization meeting the sustainability needs of the organization?

2. Lack of sustainability legislation

Our respondents indicated that they experienced a lack of legislation. However, we see a trend in which legislation is getting stricter at the global, continental, and regional levels.

An example of a global environmental law is the 2015 Paris Agreement. It is a legally binding agreement between 196 countries to limit global warming to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius. Under the Paris Agreement, countries submit nationally determined contributions that outline their climate goals and plans to reduce greenhouse gas emissions. The agreement also establishes a transparency and accountability framework to ensure that countries are meeting their commitments and to facilitate the exchange of information and best practices.

Stricter legislation also occurs at the continent level: in 2023, the Corporate Sustainability Reporting Directive (CSRD) came into force in Europe. The CSRD aims to improve the quality, consistency, and comparability of sustainability reporting by companies to provide investors and stakeholders with better information on companies' sustainability performance and risks. The CSRD requires companies to disclose information on the physical risks of climate change, such as the impact of extreme weather events, as well as the transition risks associated with the shift to a low-carbon economy.

Even at the country and lower regional levels, legislation is becoming stricter. In 2019, the city of Seattle passed the Green New Deal, which sets goals to reduce greenhouse gas emissions, transition to 100% renewable energy, and create

green jobs. The resolution includes specific targets for reducing emissions from buildings, transportation, and waste and establishes a new Green New Deal Oversight Board to oversee implementation.

There are various sustainability rankings and indices that evaluate countries' performance based on a range of social, environmental, and economic indicators. One of the most renowned indices is the Environmental Performance Index.

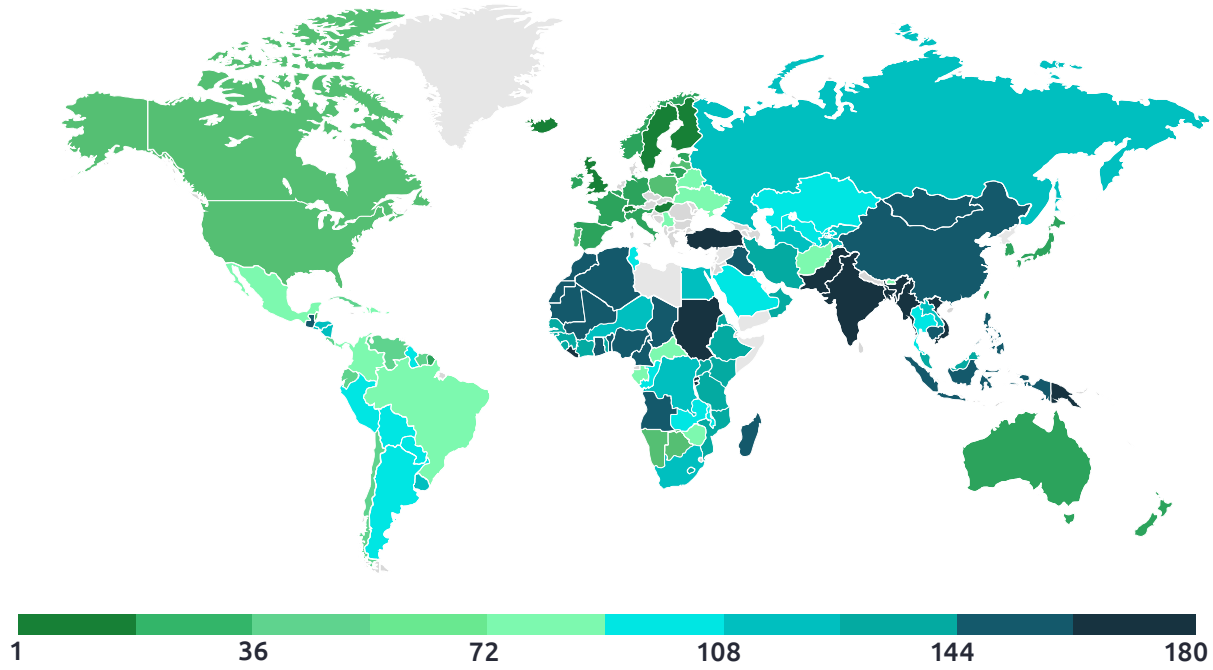


Figure 9: Rankings in the 2022 Environmental Performance Index for 180 countries

3. The need for investment in sustainability

The need for investment in sustainability in a business context can be understood from several perspectives:

- **Reputation and brand image:**
  Consumers are increasingly demanding that companies take responsibility for their impact on the environment and society. Investing in sustainability can help businesses demonstrate their commitment to social and environmental issues.

- **Risk mitigation:**
  A natural disaster or supply chain disruption due to climate change can lead to production delays, revenue losses, and reputational damage. Investing in sustainability can help businesses reduce their exposure to these risks by improving their resilience to environmental and social challenges.

- **Cost savings:**
  Sustainable business practices can lead to cost savings by reducing waste, improving energy efficiency, and optimizing resource use. For example, implementing renewable energy sources and reducing water consumption can lower operational costs over time. Sustainable practices can also reduce legal and regulatory costs associated with environmental compliance.

- **Innovation and Competitive Advantage:**
  By investing in sustainable technologies and processes, businesses can develop new products and services that meet the growing demand for environmentally and socially responsible options. Companies that are early adopters of sustainable practices can gain a competitive edge and position themselves as leaders in their industry.

As such, businesses should prioritize sustainability and integrate it into their strategic planning and decision-making processes. There are a variety of metrics and tools that organizations can use to measure their sustainability performance. Some of the most common ones include:

- **Environmental Impact Assessments (EIAs):** Are a comprehensive analysis of the environmental impacts of an organization's operations, products, or services. EIAs can identify areas where the organization can improve its sustainability performance and provide a baseline for tracking progress over time.

- **Carbon footprint assessments:** Measure the amount of greenhouse gas emissions (GHG) that an organization produces because of its activities. GHG emissions are a key contributor to climate change, and reducing emissions is a key part of sustainability.

- **Life Cycle Assessments (LCAs):** Measure the environmental impact of a product or service throughout its entire life cycle, from production to disposal. LCAs can help organizations identify areas where they can reduce their environmental impact.

- **Sustainability reporting frameworks:** Sustainability reporting frameworks, such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), provide guidelines and standards for measuring and reporting on sustainability performance. These frameworks can help organizations track their progress and benchmark against industry peers.

- **Chief Sustainability Officer (CSO):** Supports their company to balance business objectives and environmental protection. Common responsibilities of a CSO include developing sustainability policies and programs, ensuring compliance with environmental regulations, measuring, and reporting on sustainability performance.

- **Green Teams:** Are a dedicated group of professionals, independent of discipline or organizational level, which enable their department to implement sustainable operations concepts in a practical setting on a voluntary basis.



The skills of tomorrow

The impact of the COVID-19 pandemic accelerates organizational change and the need for digital transformation and process automation. Our respondents reflected upon what skills they are currently looking for.

Recruiting new procurement employees

Only 18% of the respondents mention that they can recruit and develop the competencies in their team to be able to deliver next-generation procurement services, while 82% state that it is somewhat possible.

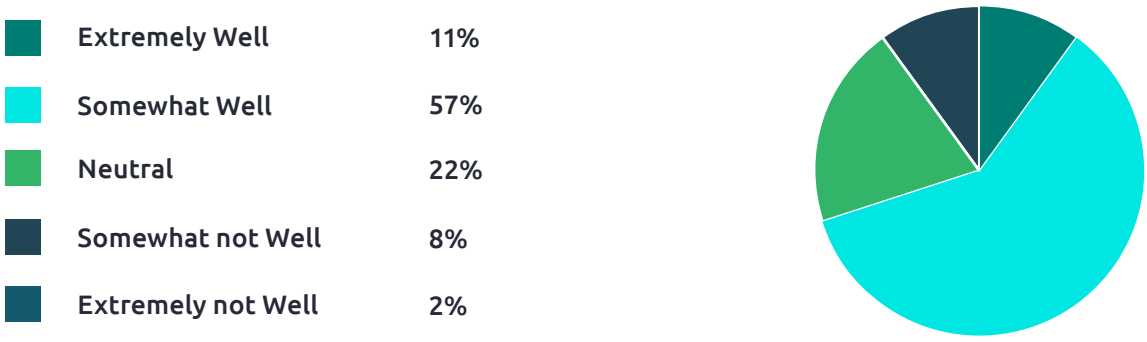


Figure 9: We asked our respondents: Are you able to recruit and develop the competencies in your team to be able to deliver next generation procurement services?

There can be several reasons why it may be challenging to recruit new procurement employees:

- **Competition/high demand**
  Other industries may be offering more attractive compensation packages or benefits, making it difficult for procurement departments to compete for top talent. Simultaneously, the importance of procurement grew. For example, procurement can help companies minimize the pandemic's economic impacts.

- **Lack of awareness**
  Many people may not be aware of what procurement entails or the important role it plays in organizations.

- **Limited advancement opportunities**
  In some organizations, procurement is perceived as a support function rather than a core business unit. As a result, there may be limited opportunities for advancement.

- **Specialized skills**
  Procurement requires a unique set of skills, including negotiation, relationship building, and data analysis. Finding candidates with these skills can be challenging.

Especially the last point—specialized skills—requires some additional attention. We asked our respondents what skills they expect to be needed for their procurement function.

Reskilling the current procurement workforce

According to our respondents, future required skills are awareness about global supply chain changes, digitalization, relationship building, and commercial skills. In the following, we touch upon the four main themes.

Awareness about global supply chain changes

There have been several major global supply chain issues in recent times. In March 2021, the Evergreen blocked the Suez Canal, obstructing one of the world's busiest shipping lanes for several days. This caused significant disruptions to global trade. Furthermore, the COVID-19 pandemic has caused disruptions in supply chains around the world,

leading to shortages of raw materials, components, and finished goods. Lockdowns, factory closures, and transportation disruptions have impacted the global supply chain, caused delays, and increased costs. Thirdly, the current global shortage of shipping containers leads to delays in shipping and increased costs. This is partly due to the surge in demand for goods during the pandemic and a backlog of containers in ports.

Awareness about global supply chain changes can help procurement employees in several ways:

- **Better understanding of risks and opportunities**
  Procurement employees can identify potential risks and opportunities associated with changes in the global supply chain. For example, changes in tariffs, transportation costs, and sourcing locations can impact prices, lead times, and product availability. With a better understanding of these changes, procurement employees can make informed decisions to mitigate risks and capitalize on opportunities.

- **Improved supplier relationships**
  Procurement employees can work with suppliers to develop strategies to address changes in the global supply chain. For instance, if a supplier is facing challenges due to supply chain disruptions, procurement employees can work with them to identify alternative sourcing options or negotiate favorable pricing terms. Such collaboration can help build stronger relationships with suppliers and improve the overall performance of the supply chain.

Digitalization

Digitalization in the procurement function refers to the use of digital technologies to automate and optimize procurement processes. It involves leveraging technology to streamline the procurement cycle, from sourcing to supplier management, order processing, invoicing, and payment.

Digitalization can help organizations improve efficiency, reduce costs, increase transparency, and enhance supplier relationships. Some examples of digital tools that can be used in procurement include:

- **Electronic procurement platform**
  These are online platforms that connect buyers and suppliers, making it easier to find and purchase products and services.

- **E-sourcing tools:**
  These are tools that enable organizations to identify and evaluate potential suppliers, negotiate contracts, and manage supplier relationships.

- **E-procurement software**
  This software automates the procurement process, from creating purchase orders to receiving invoices and making payments.

- **Supplier relationship management (SRM) tools**
  These are tools that help organizations to manage their relationships with suppliers, track supplier performance, and collaborate on projects.

Digitization can help procurement employees in several ways:

- **Improved efficiency**
  Digitization can help automate many procurement processes, making them faster and more efficient. For example, electronic procurement systems can streamline the procurement process by automating tasks such as request for proposal (RFP) creation, supplier selection, and purchase order processing.

- **Enhanced transparency**
  Digitization can improve transparency by providing procurement employees with real-time data on supplier performance, contract compliance, and spend analysis. This information can help them make more informed decisions, identify potential risks, and develop strategies to mitigate them.

- **Increased collaboration**
  Digitization can enable better collaboration between procurement employees and other stakeholders, such as finance, operations, and suppliers. For example, electronic procurement systems can facilitate communication and document sharing between teams, ensuring everyone has access to the same information.

- **Better analytics**
  Digitization can enable procurement employees to analyze large amounts of data quickly and easily. This can help them identify trends, patterns, and insights that can inform procurement decisions, such as identifying opportunities to consolidate spend or negotiate better pricing.

Relationship building

Relationship building in the procurement function refers to the process of building strong, long-lasting relationships with suppliers and other stakeholders involved in the procurement process. It involves fostering collaboration, communication, and trust between the procurement team and suppliers. Relationship building can help procurement employees in several ways:

- **Improved supplier performance**
  Building strong relationships with suppliers can help future procurement employees improve supplier performance. Strong relationships can encourage suppliers to go above and beyond to meet procurement needs, including delivering high-quality products and services, meeting delivery deadlines, and offering competitive pricing.

- **Better negotiation outcomes**
  Building relationships with suppliers can also help future procurement employees negotiate better deals. By establishing trust and rapport with suppliers, procurement employees can often secure more favorable terms and conditions, such as longer payment terms, volume discounts, or reduced prices.

- **Increased access to market intelligence**
  Strong relationships with suppliers can provide future procurement employees with valuable market intelligence. Suppliers can share information about industry trends, competitor activity, and emerging technologies, providing valuable insights that can inform procurement decisions.

- **Improved risk management**
  Building strong relationships with suppliers can also help future procurement employees manage risks more effectively. By working collaboratively with suppliers, procurement employees can identify potential risks and develop strategies to mitigate them.

Commercial skills

Commercial skills in the procurement function refer to the ability to negotiate contracts, manage supplier relationships, and analyze market trends to achieve the best value for an organization. It involves a combination of analytical, negotiation, and communication skills. Commercial skills can help future procurement employees in several ways:

- **Improved negotiation skills**
  Procurement employees with strong commercial skills can negotiate better deals with suppliers, including lower prices, longer payment terms, and more favorable contract terms. Effective negotiation skills can help procurement employees secure the best possible deals and improve the overall performance of the supply chain.

- **Better contract management**
  Commercial skills can also help future procurement employees manage contracts more effectively. By understanding contract terms and conditions, procurement employees can ensure that suppliers are meeting their obligations and that the organization is getting the expected value from the contract.

Dealing with contemporary risks and—the need for—sustainability forces an organizational change

To summarize, the need for sustainability is driving organizations to rethink their procurement practices. By incorporating sustainability into their procurement decisions, organizations can reduce their environmental impact.



At your service—how to employ technology and data to secure the greatest benefit for the procurement organization

Author :
Karolina Gogol-Milkowska

How do I enable successful procurement in my organization with an eye for financial as well as non-financial aspects, such as innovation, risk management, and resilience?

Questions like this engage heads of procurement today, and for a good reason. Viewing procurement as a matter of logistics and cost containment is overdue for greater consideration. Adopting the right procurement tools is the key, and connecting procurement, stakeholders, finance, and suppliers with easy-to-use spend-management technology can drive several immediate business results.

In this article, we delve into client priorities around procurement technology and data analytics (that have been expressed by procurement professionals in our survey conducted earlier this year). Hopefully, our shared insights will help you take the right approach towards new reality where technology serves you the way it should—supporting your business objectives and creating an amazing user experience.

Whether it's savings, supplier management or compliance, technology plays a crucial role in streamlining procurement processes and meeting business needs.

Typically, procurement has several expectations with regards to technology, including:

- **Efficiency and cost savings**
  One of the primary expectations of procurement is that technology should enable them to operate more efficiently and save costs. This can be achieved using software tools for procurement planning, sourcing, and contract management, as well as automation of repetitive tasks.

- **Transparency and compliance**
  Another key expectation is that technology should provide transparency into the procurement process and ensure compliance with policies, regulations, and ethical standards. This can be achieved with digital systems that track procurement activity, provide audit trails, and facilitate reporting.

- **Risk management**
  Technology is also expected to help manage risk in procurement by providing early warning systems for potential supply chain disruptions, assessing supplier risk, and facilitating effective supplier performance management.

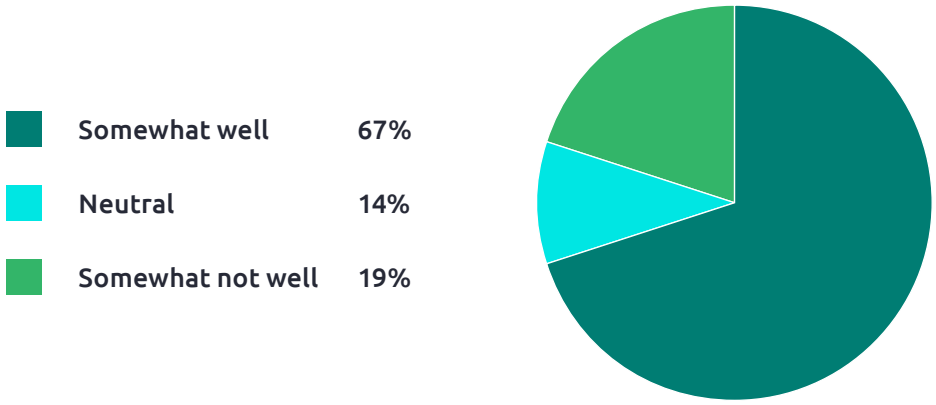
- **Integration and collaboration**
  Procurement teams also expect technology to integrate with other corporate systems (e.g., ERP, CRM, finance systems, etc.) and enable collaboration with stakeholders across the organization. This can be achieved using cloud-based procurement platforms and other digital collaboration tools.

- **Digitization and automation**
  Procurement teams need to leverage technology to automate manual processes, streamline workflows, and gain visibility into spend data. Moreover, digitization and automation are expected to improve collaboration with suppliers by removing manual effort and reducing turnaround time.

- **Innovation and Continuous Improvement**
  Finally, procurement teams expect technology to support innovation and continuous improvement in procurement processes and practices. This can be achieved by using data analytics, machine learning, and other advanced technologies to drive insights and identify opportunities for optimization. So, while it is recognized that technology has a crucial role to play in an effective procurement organization, 30% of the respondents were neutral to negative on how well their technology landscape supported their procurement function. Interestingly, while the first group of respondents reported usage of leading (according to Gartner Magic Quadrant for Procure-to-Pay Suites[2]) procurement platforms, none of them responded "extremely well." Hence, there's work to be done.

[2] *Gartner Magic Quadrant for Procure-to-Pay Suites*

How well does your technology support your business goals?



Procurement functions can only be elevated by providing efficient tools and processes to streamline procurement activities, whether it's automation, data analytics, e-procurement, or supplier relationship management.

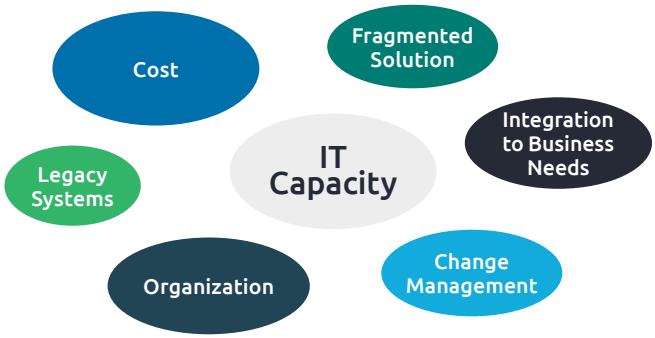
But deploying the right technology for procurement can be a complex and challenging process. Some specific challenges named by our respondents include:

- **Cost and return on investment (ROI):** Deploying new technology can be expensive, so the organization must weigh the costs against the potential benefits. Understanding the ROI of the new technology is critical to justifying the investment and ensuring long-term sustainability.
- **Organization:** Siloed functions, large organizations distributed over the world, and complex international set-ups do not contribute to a successful technology deployment, but overcoming or at least minimizing the impact is critical to success.
- **Legacy systems:** Many organizations already have various systems in place for procurement, such as ERP, e-procurement, or supplier management software. Ensuring that the new technology is compatible with these existing systems can be a challenge.
- **Integration to business needs:** Procurement does not operate in isolation within an organization, and its technology must integrate with other functions such as finance, accounting, and inventory management. This requires a comprehensive understanding of the organization's processes and workflows.



What are the specific challenges you have in deploying the right technology for procurement?

Cost	**32%**
IT Capacity	**31%**
Organization	**26%**
Other	**10-12% each**



There is an additional key element and, at the same time, a challenge: change management (indicated by 11% of our respondents) and, in particular, **user acceptance**.

The success of any technology deployment depends on how well it will be adopted by those working with it daily. Ensuring that the new technology is intuitive, user-friendly, and meets the needs of end-users is crucial. Providing sufficient training and support can help address any resistance to change and encourage user adoption.

Our survey has revealed that even companies with best-in-class solutions suffer from low user adoption due to—among others—poorly executed change management and a fixed mindset among employees.

There are several challenges that businesses can face when it comes to the adoption of new technologies among their users. Some of these challenges include:

- **Resistance to change:**
  People are often resistant to change, especially if it requires them to learn new skills or ways of doing things. This can be a significant barrier to user adoption, as employees may prefer to stick with familiar tools and processes rather than taking the time to learn something new.

- **Lack of training:**
  Even if employees are willing to learn new technologies, they may not have access to the right training or resources to help them get up to speed quickly. Without proper training, employees may struggle to use the new technology effectively, which can lead to frustration and a lack of adoption.

- **Poor user experience:**
  If the new technology is difficult to use or doesn't provide a good user experience, employees may be less likely to adopt it. This is especially true if the technology is supposed to streamline processes or make work easier but ends up being more of a hindrance than a help.

- **Lack of buy-in from leadership:**
  Without buy-in from leadership, employees may be less likely to take new technologies seriously. If management doesn't prioritize the use of new tools and processes, employees may assume that the technology is optional or not important.

- **Integration issues:**
  New technologies may need to be integrated with existing systems, which can be a challenge if the systems are outdated or incompatible. Without seamless integration, employees may be less likely to adopt the new technology.

- **Security concerns:**
  New technologies may introduce new security risks, which can make employees hesitant to use them. Without proper security measures in place, employees may be reluctant to adopt the technology out of fear that it could put sensitive data at risk.



But there is more to it. Technology, even if it is at the very center of the digital transformation, won't do the job on its own. To make transformation sustainable and resilient, companies must develop a **digital culture** where skills are developed and maintained to secure successful implementation and adoption by users.

Seemingly, even in today's digitized world, a shift to a digital mindset is easier said than done. Our study reveals the need of external support with change management and employee digital upskilling.

Creating a digital culture in corporate procurement requires a multi-pronged approach that involves **technology, processes,** and **people**. Here are some steps to get started:

1. **Assess the current state:**
   Assess the current procurement processes, systems, and technology to identify gaps and areas for improvement. This will help in identifying the technology needed and the processes to be streamlined.

2. **Invest in digital procurement technology:**
   Invest in digital procurement technology that streamlines the procurement process and eliminates manual tasks. This could include e-procurement platforms, e-sourcing tools, and digital contract management tools.

3. **Train employees:**
   Train employees to use digital procurement technology and embrace a digital culture. This includes training on how to use new technology, how to adopt new processes, and how to leverage data analytics to make informed decisions. Also, proactively recruit people with an affinity for IT to expand the digital culture.

4. **Encourage collaboration:**
   Encourage collaboration between procurement and other departments such as IT, finance, and legal. This will help in identifying new technology solutions, streamlining processes, and improving the overall procurement function.

5. **Embrace data analytics:**
   Use data analytics to gain insights into procurement spend, supplier performance, and contract compliance. This will help in identifying opportunities for cost savings and process improvements.

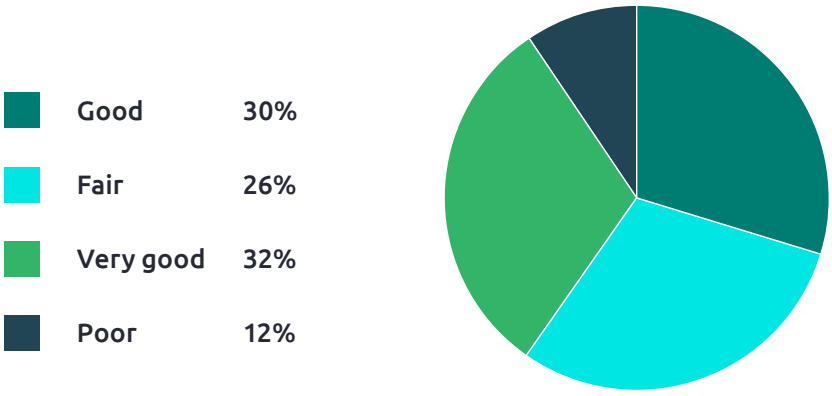
6. **Foster a culture of continuous improvement:**
   Foster a culture of continuous improvement by regularly reviewing and optimizing procurement processes, technology, and performance metrics.

Technology is a tool. It should be seen and utilized as a means that helps accomplish business goals and improves the end-user experience. In other words, it should serve people, not the other way around. True, deploying the right technology in the right way can be a long and complex process, but it doesn't have to be painful.

Informed decisions can only be made based on a data-driven approach where data and analysis guide decision-making, problem-solving, and strategy development. Adequate data quality in corporate procurement is crucial to ensuring that procurement decisions are based on accurate, reliable, and timely information.

In our survey, nearly 62% of the respondents rated their visibility into procurement data as either "very good" or "good". Not surprisingly, companies within this range make use of some of the most advanced procurement technologies. What's remarkable is that some of the 31% of the respondents who selected "fair" also identified the use of technologies ranked leaders in Gartner's classification of Procure-to-Pay suites.

How would you rate the visibility of your Procurement Data (E.g. spend, payables, forecast) across your organisation?



Is it fair to say: *It's not what you have, but what you do with what you have, that makes the difference?* Arguably, most of today's procure-to-pay technologies provide sufficient visibility into data. In working with our customers, we repeatedly find that the challenge remains the limited or incorrect use of functions.

Speaking of challenges faced in gaining this visibility, our respondents reported issues with multiple sources of information or decentralization of data (75%), data quality (15%), access to data (10%), organization structure (7%), or lack of dedicated resources (5%). Data visibility was also mentioned as one of the factors preventing the procurement organization from better meeting the needs of the business.

multiple data **sources**

lack of **integration**

lack of **access**

data **quality**

siloed data- and reporting strategy

decentralized data

organization structure

dedicated **resources** for data/spend analysis

different **sources** of information

number of reporting applications

Improving data visibility requires a combination of technology, process, and cultural changes. Here are some steps you can take to improve data visibility in your procurement organization:

- **Standardize data:**
  Establish clear standards for data collection, formatting, and storage. Use standardized categories, codes, and naming conventions to ensure consistency in data entry.

- **Centralize data:**
  Companies can centralize their procurement data in a single database or system. This can help them analyze the data more effectively and identify patterns and trends.

- **Implement data governance:**
  Create a data governance framework that defines roles, responsibilities, and processes for managing data quality. Establish data ownership, accountability, and stewardship to ensure that data is accurate, complete, and consistent.

- **Use analytics tools:**
  Analytics tools can help companies identify opportunities for cost savings and process improvements. By analyzing procurement data, companies can identify areas where they can negotiate better prices or streamline processes.

- **Build a culture of data-driven decision-making:**
  Companies can promote a culture of data-driven decision-making by providing training and resources to employees. This can help to ensure that employees understand the importance of data and how to use it to make better decisions.

- **Conduct regular data audits:**
  Regularly review data to identify errors, inconsistencies, and gaps. Conduct data quality checks to ensure that the data is accurate, complete, and up-to-date.

- **Continuously improve:**
  Continuously monitor and evaluate data quality to identify areas for improvement. Use feedback from stakeholders to improve data quality processes and practices over time.

Building a first-class data management framework requires time and effort, but the investment pays off quickly. Improved data quality translates into improved data visibility and supports more informed decision-making. On the other hand, it elevates the procurement function within the entire organization and enables it to meet the needs of the business.

Whether in our personal or corporate life, we are surrounded by technology. The key is to apply it in the most efficient way and let it support our needs. Just as we cannot imagine life without a mobile, including apps supporting our communication, health, or productivity, the future of our businesses without adequate technology is no longer viable.

With a variety of options available in the market today, procurement technology—if used well—can and should improve the way you do business and, as a result, contribute to meeting your goals, be it cost savings, compliance, or risk management, to name a few. The right technology, embraced in the spirit of a digital culture in your organization, means a bright future—go for it!



SECTION 3

TECHNOLOGIES

Using technology to shift organization from cost to value driven enterprise

Authors :
Kexing Lu
Raj Sharma
Marc Wallstab
Markus Reckenfeld
Stefan Gaiser

Introduction to the technology section

Nowadays, technology is the main driver of many improvements and innovation in the procurement domain. As a bionic arm to human capital, technology provides a great opportunity to increase efficiency, compliance, transparency, and simplicity in procurement processes. These measures are not 'nice to have' anymore but are key to meet the expectations of internal and external stakeholders while being a prerequisite to future long-term success and potential scaling of operations. Given the growing importance of these measures and the lag in procurement compared to other functional disciplines, the number of procurement technology platforms, data providers, and start-ups are exploding which makes it overwhelming for decision-makers in and outside procurement.

We can say that Source-to-Pay (S2P) platforms start to mature with solutions for both large enterprises and small- and medium-sized businesses (SMBs). They provide solid solutions for supplier management, sourcing, contract management, and procure-to-pay functionalities. This does not mean that organizations are fully content with the selected procurement platform. Recent research by Forrester (Executing A Successful Procurement Transformation) indicated that about 82% of the CPOs regret their decision for a spend management platform. So, there is much to gain in selecting, implementing, and continuously improving technology resulting in maximized adoption. At the same time, emerging technology provides new opportunities for further digitization and automation, but procurement needs to define, plan, and execute these initiatives successfully.

In this section, we present a maturity model that provides guidance in defining, planning, and executing digital procurement initiatives. The model is based on our experience that Source-to-Pay basics must be fixed first before implementing new and emerging technologies. The model describes a logical sequence for implementing technology along the maturity cycle. We then share our view on the typical bottlenecks and also highlight the best practices that successful organizations adopt.

Capgemini technology maturity model

Capgemini Technology Maturity Model shown in Figure 1 explores various procurement technologies that can transform organizations from 'cost' to 'value-driven' frictionless enterprise.

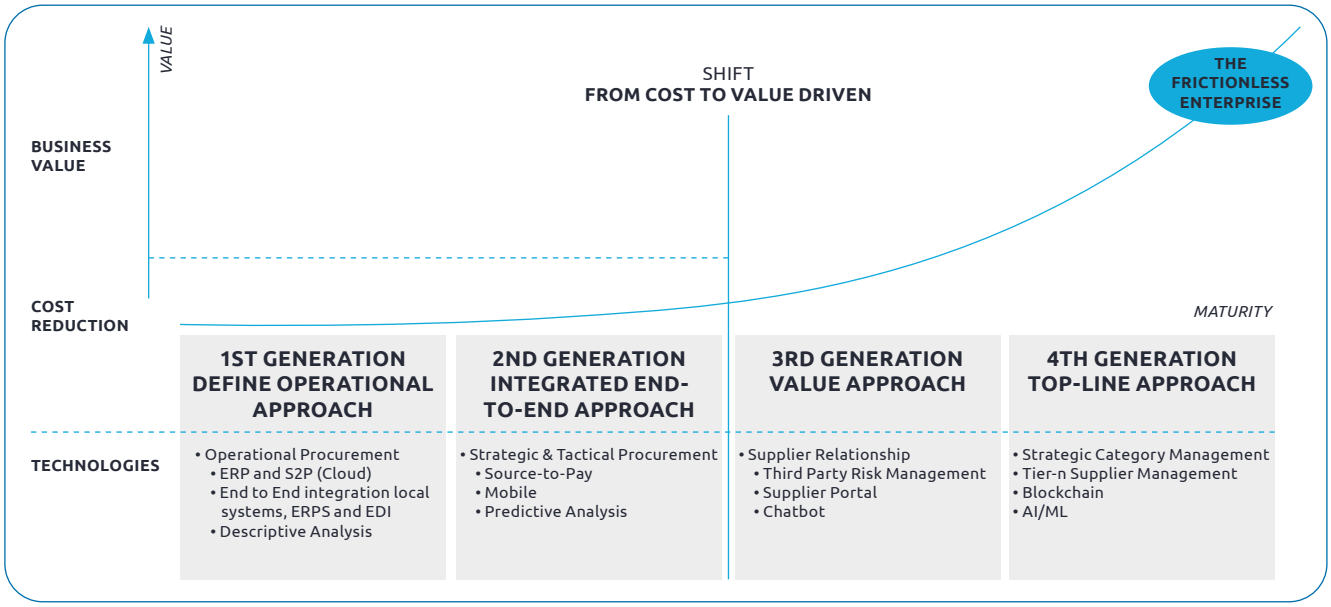


Figure 10: Capgemini Technology Maturity Model

- The 1st generation defines the operational layer where basic procurement technologies such as cloud ERP and Source-to-Pay system, and a global middleware integrates the ERP and Source-to-Pay with other supporting systems for ensuring all systems are communicating with each other.

- The 2nd generation builds upon by adding mobile and advanced analytics along with strategic and tactical procurement functions including approvals for an end-to-end integrated workflow.

- The 3rd generation then enriches the internal data by integrating with 3rd party data providers.

- The 4th generation applies top-of-the-line technologies such as Artificial Intelligence (AI), Machine Learning (ML), Blockchain, Metaverse, and others driving towards a frictionless enterprise.

There is little variance when it comes to choosing the cloud ERP. Gartner Magic Quadrant published in August 2022 identifies SAP, Oracle, Microsoft, and Infor as leaders. Businesses looking to transform their procurement journey need to choose the right technologies and develop a transition plan across the four generations. The following sections outline best practices for the various technologies.

Source-to-Pay procurement technologies:

Procurement processes vary across industry and each business has specific functional requirements. Besides functionalities, other key considerations for selecting the Source-to-Pay technologies are:

- **Integration capabilities –** Source-to-Pay applications must have built-in capabilities for integrating with internal and external systems thereby providing complete visibility into the Source-to-Pay functions.

- **Ease of use –** Reduces the learning curve and increases user adoption, which is considered as

a key factor for success success, among other crucial factors.

- **Flexibility to configure versus customize the solution –** The overall architecture of the Source-to-Pay applications must be configurable so that each change does not require professional services from the Source-to-Pay supplier.

Considerations for selecting procurement solutions:

- **Application hosting –** Dedicated hosting environments offer higher flexibility for configuring the system when compared to multi-tenant environments.

- **Collaboration –** Built-in collaboration tools like chat increases productivity between buyers and suppliers while keeping all conversation within the system.

- **User interface –** Besides intuitive interface, the ability to personalize messages such as broadcast, notification, and alerts in-line and on-screen reduces learning curve motivating users towards higher adoption.

- **Supplier portal –** For conducting business digitally, where through a simple registration suppliers can transact, update information, and respond to buyer inquiries.

- **Configuration –** Rich set of features that allows buyers to configure the solutions easily instead of spending custom dollars for each requirement.

Middleware

Having a global middleware such Dell Boomi, MuleSoft, or others reduces data redundancy and brings data from disparate or silo systems together. A single view or access to all data increases visibility and decision making, while standardizing on all integration options—ETL, EAI, API, etc. Standardization also helps in consolidating or retiring redundant applications.

Analytics

Analytical information provides insights into transactions along with system usage and overall adoption. During the 1st generation, the basic system usage and adoption reports will provide insights for making appropriate investments in areas such as change management and push the entire organization towards overall success. As companies transition from 1st generation to the next levels, advanced reporting such as dashboards and visualizations provide insights into process inefficiencies enhancing the decision-making ability of category managers or program managers to directly address issues and derive higher savings.

Mobile

Workflow activities such as notifications, alerts, and approvals are information that is pushed to the user for taking actions. Procurement solutions that provide 1-click approvals, acknowledgment of notifications, or alerts enhance the overall process efficiency. While the 1st generation provides the foundation or operational background, the 2nd generation builds upon the advanced analytics and system interactivity to ensure end-to-end integration of the systems.

Third party data providers

Having transitioned from the 1st to the 2nd generation, the 3rd generation is about integrating and enriching internal data with risk, review, and compliance information provided by 3rd party data providers. The enriched data, when applied to supplier information, provides a comprehensive view of internal information along with risk, reviews, and compliance, creating opportunities for segmenting suppliers and building stronger relationships with those that align with corporate supplier policies.

4th generation technologies

The 4th generation is about adding advanced technologies such as AI, ML, blockchain, metaverse, and others for further automation and collaboration. AI/ML technologies are commonly used to automate routine tasks, optimize processes, and improve decision-making allowing procurement professionals to focus on more strategic tasks. Further, AI/ML technologies can also be leveraged as intelligent assistants with natural language processing capability, supporting both operational and strategic work. Blockchain can be used to improve supply

chain transparency, traceability, and security in procurement. Typical applications can be used for ensuring the integrity and security of purchase requisitions, orders, receipts, etc., and processing quick and secured transactions such as payments and contracts when specific conditions are met, reducing the need for manual intervention.

Metaverse

In the context of procurement, metaverse and virtual reality (VR) technologies create immersive experiences that enable buyers and suppliers to interact with each other virtually. Metaverse and VR technologies can be used for conducting virtual product demonstrations or collaborating with suppliers in virtual tradeshows, virtual site visits for inspection, and supplier qualification.

The previous sections presented that while identifying, planning, and selecting the right technologies for various levels of the Capgemini Maturity Model is the easy part, implementing them requires anticipating bottlenecks and using best practices to overcome them. A unilateral focus on technology only results in low adoption levels and results in companies getting stuck at level 2.

The most successful technology deployment projects are implemented as a part of a wider procurement transformation program that focuses on people, processes, change management, and most importantly, comes with senior management support for change. The next section covers the most common bottlenecks and the best practices to overcome them as utilized by Capgemini.

Bottlenecks and best practices

As mentioned above, selecting the right technologies is easier than implementing them. In the final section, Capgemini recommends the following proposals for creating a smooth and efficient implementation experience. These proposals are not intended to be considered in a sequential manner, but they can be applied as per the situation. These best practices may be applicable to other technologies, irrespective of the functional discipline. Table 1 summarizes these best practices.

#	BOTTLENECKS	BEST PRACTICES
1	Ambitious, unrealistic expectation, and running multiple projects	Adopt a hybrid approach, starting with a feasible pilot or MVP, and set achievable goals where progress can be measured and monitored, and where applicable, adopt the 'Speedboat' approach
2	Resource and/or talent availability	Make recruitment and people development a strategic activity for ensuring the availability of resources
3	Top management involvement	Must align the strategic and tactical self-interest of diverse stakeholders by promptly correlating corporate goals and financial objectives with business processes.
4	Organic processes	Transform business by automating processes as applicable, based on the selected technologies
5	Change management	Engage change management early, which blends training and development tailored to stakeholder groups and personas
6	Data management, quality, and integration	Standardize integration using a global middleware that identifies opportunities for consolidating applications and integrating disparate systems

Table 2: Bottlenecks and Best practices

Proposal #1 - Develop hybrid approach for managing projects and setting realistic goals and objectives

Developing a hybrid approach may require both waterfall and agile approach but at different stages.

Alignment of project prioritization with corporate goals and financial objectives is imperative. A waterfall approach may be a good option for mid- and long-term planning for managing the self-interests of different stakeholders. Collaborating with technology suppliers and potential system integrators can also help in reprioritizing projects based on their experience and lessons learned from implementing solutions across various industries and SMBs.

Today, Agile is a proven execution methodology that shows fast results as it breaks larger initiatives into smaller pieces aligning closely with the objectives of the project team members, decision-makers, and business users. As a result, there is higher trust and motivation for higher adoption.

Organizations that consider Agile as a golden bullet may encounter difficulties in executing their plans, as both waterfall and agile have a role in the initial phases of the project. We believe that both approaches must be fit for the overall program, and our recommendations are as follows:

- Adopt a hybrid approach (waterfall and agile) which will bring the benefits of both methodologies, especially when implementing comprehensive solutions like Source-to-Pay platforms.
- Educate and explain the benefits of the hybrid approach to team members before the project.
- Waterfall is a reliable approach most applicable with seeking full standardization as this method ensures that (inter)dependencies between people, process and data are managed.
- Agile is a proven execution approach best suited for higher levels of uncertainty and desire for fast results through pilot or MVPs.
- Agile approach also encourages higher collaboration between delivery teams – business, data and steering committees.

Proposal #2 - Make recruitment and people development a strategic activity

Developing a hybrid approach may require both waterfall and agile approach but at different stages.

In the last decade or so, there has been a surge of new technology suppliers providing both niche and complete procurement platform solutions. This also means all organizations are competing to recruit from a limited resource pool. Further digital technologies such as e-signature, chat, chatbots, AI/ML etc. also contribute towards increasing process automation and the overall efficiency. This also means that the recruitment requirements should extend beyond procurement experience to include some of these emerging technologies as well. Our recommendation is as follows:

- Make recruitment and people development a strategic activity
- Assign platform training to users based on the roles

- Seek guidance from platform supplier and system integrator for the best training
- Assign owners for procurement processes and digital technologies
- Ensure resources are assigned prior to project kick-off

Proposal #3 - Drive the strategic and tactical self-interests of various stakeholders

The cross-functional requirements of procurement practices, digitization, and automation initiatives often makes team members focus on their own priorities.

In absence of a strategic approach, the team may propose ambitious plans, have unrealistic expectation, and/or initiate multiple projects, setting up the project towards failure from the very beginning. This is where the top management can provide strategic guidance to the various stakeholders by aligning the priorities with corporate goals, financial objectives, and business process. When strategic and tactical initiatives are not aligned, the desired change may not happen due to visible resistance resulting in high costs incurred for low adoption levels. Our recommendations are as follows:

- Establish a cross-functional sponsor team that is visible and active along the entire program:
  - A project owner committee that provides strategic guidance for aligning the corporate goals, financial objectives, and business processes.
  - Core team that provides financial objectives aligning with corporate goals and the business processes that can be considered.
  - Project team that provides tactical initiatives which aligns with corporate goals and financial objectives.
- Develop a desired benefits case that is signed off at the start of the program and directly ties with the strategic and tactical initiatives identified above.
- Assign track leads and SMEs with the right experience to work with the technology supplier and implementation partner.
- Make prompt decisions based on financial and operational impact.



Proposal #4 - Engage change management early for higher adoption

The new platform, besides bringing in new functionality, also provides new insights and ways of improving and integrating data with third-party data providers.

This new platform, when introduced to the organization with appropriate and relevant role-based training, increases enthusiasm, adoption, and efficiency of the business function. On the flip side, if the new platform is pushed into the organization without proper training, it may yield lower ROI because of one or more of the following points:

1. **Change vision and strategy was not clearly defined –** This introduces variations in the expectation across business leaders and users leading to lower user enthusiasm and adoption.

2. **Suppliers, procurement users, and IT are not fully engaged –** Involve key participants from each organization and provide timely communication so that everyone is informed and ready to embrace the change.

3. **Culture and behaviors hinder change –** Conduct focused role-based or persona-based training to mitigate any cultural and/or behavioral hinderence.

Change management team must be engaged right from the project kick-off so that the training can be blended into the project plan and relevant user community is ready to embrace the change. Our recommendations are as follows:

» Create a check that prepares the organization for change
- Identify various personas in the user community
- Align requirements for each persona
- Ensure that the training provided to each persona aligns with the program objectives

» Manage the change by coordinating training and communication with the user community
- Align with implementation partner for identifying the topics
- Align with technology partner for ensuring access to the training material
- Create a training plan and schedule

» Reinforce the change using the insights offered by the platform
- Identify the level of resistance
- Send follow up reminders for refresher sessions
- Measure success of acceptance levels following each session

Proposal #5 - Standardize integration using a global middleware

There are many point solutions in the market that enrich or enhance the procurement processes.

Implementing such solutions is simple, and easy integration into the ERP or procurement platforms encourages companies to respond to the latest trends and new methods. Though the short-term benefits are tangible, in the long run, there is an on-going effort to resolve challenges such as:

- **Data redundancy –** When similar information is available across multiple applications through multiple integration solutions, it may be difficult

to validate the source of truth.

- **Maintenance and support –** Disparate integration technologies, and redundant or duplicate applications also increases maintenance and support effort.

- **Data management and quality –** The effort required to maintain the data quality will be effected as that effort needs to be replicated across other systems.

- **Availability of skilled resources –** Standardizing on the industry accepted middleware solutions also means that skilled resources are easily available compared to outdated and disparate integration technologies.

Such issues make the overall IT infrastructure complex introducing delays as one or more challenges need to be resolved. Our recommendations are as follows:

» Standardize a global middleware, so that the
- point of failure is reduced for both inbound and outbound integrations
- automated programs that handle the data flow with core systems such as ERP and procurement platforms

» Create a steering committee that reviews and approves each integration for
- reducing data redundancy across multiple applications
- increasing data accessibility seamlessly

» Assign master-data owners who are responsible for providing
- master data management (MDM) strategies
- define data-quality standards

» Enable IT service offerings based on business and functional requirements
- assign a IT service owner, who is responsible for ensuring availability of the assigned service
- define standards for responding and resolving requests with SLA guidelines

Harmonizing data across systems, automating integrations through a global middleware platform, and assigning data owners with an oversight governance team will increase data accessibility. Strategic benefit of streamlining data integration enhances decision making and creates competitive advantages.



SECTION 4

START-UPS

Leveraging innovative start-ups to reinvent procurement processes

Authors :
Dmitar Vojnovic
Bjørn Ravnda
Galib Kazi
Lal Bahadur Sahu
Dries de Mey
Nima-Sebastian Hug
Benjamin Lindhøyen

Procurement leaders are constantly exploring improvements for their procurement systems, and while established providers such as SAP Ariba, Coupa, and Ivalua are also introducing new technologies, there are times when they could move quicker to provide innovative solutions to the market.

This chapter aims to provide insights to the innovative solutions start-ups are offering for the components that form the backbone of a procurement system, including supplier discovery, sourcing, supplier management, contract management, and spend management, and reporting analytics. Moreover, the chapter explores the unique offerings of start-ups, how they are changing traditional approaches, and their potential impact on businesses.

In addition, two significant trends shaping the procurement sector are highlighted—sustainability and Artificial Intelligence (AI); it discusses how these elements can make procurement more ethical, efficient, and intelligent.

To provide a thorough overview of the procurement startup landscape, initially, we set specific parameters to define what qualifies as a start-up in this sector, which helped to create a comprehensive longlist of potential candidates. Each start-up was then further evaluated, narrowing down the longlist to a more focused shortlist. Finally, deep-dive interviews were conducted with the start-ups from the shortlist, which we believed were the most innovative and relevant. These conversations offered valuable insights into their strategies, innovations, challenges, and visions for the future, effectively helping us paint a clearer picture of the overall startup landscape in the procurement industry.

Parameters set for what constitutes a start-up

- Headcount: Max 150
- Age: Max 7 years
- Solution is innovative

A review of the 2020-2021 perspective

In the Digital Procurement POV research paper from 2020-2021, the impact of start-ups on procurement is highlighted in driving innovation by leveraging intelligent automation technologies like Robotic Process Automation (RPA), Artificial Intelligence (AI), and blockchain. Adopting RPA allows for the automation of repetitive, rule-based tasks, while AI focuses on complex processes involving large volumes of unstructured data. Blockchain technology enables secure, transparent, and efficient management of procurement processes such as contract compliance and traceability.

Furthermore, the paper highlights the importance of having an Intelligent Automation Target Operating Model (IA TOM) for successfully implementing these technologies in procurement functions. An IA TOM ensures streamlined operations, minimized resource needs, and efficient governance, which are essential for achieving the full potential of intelligent automation.

Two years later, RPA has already achieved widespread adoption, particularly in contexts such as Enterprise Resource Planning (ERP) and other software interfaces that demand substantial input.

Moreover, it has opened a niche for numerous smaller,

more specialized start-ups focused on implementing RPA solutions designed to significantly reduce the necessity for human intervention, thereby streamlining workflows and improving efficiency.

On the other hand, the blockchain technology has received a somewhat lukewarm reception in the procurement space. This could be due to the need for a broader range of applications to fully demonstrate its potential and value. As a result, we do not believe that blockchain solutions are currently at the top of CPOs' priority lists, as the technology is yet to gain widespread adoption.

Meanwhile, there has been an increase in interest in AI technology within procurement, significantly increasing the number of start-ups whose offerings revolve around this technology. Moreover, AI's capabilities in managing large volumes of unstructured data and automating complex processes make it a tool for transforming procurement, such as off-the-shelf AI tools like ChatGPT. As a result, the growth of start-ups focusing on AI suggests a promising shift towards more intelligent, data-driven procurement solutions.

Since the publication of the previous edition of this research paper, the procurement landscape has seen significant shifts. Chief Procurement Officers (CPOs) now face formidable challenges such as supply chain disruptions, increased regulatory scrutiny, and sustainability demands. Alongside this, they bear added responsibilities to help their organizations adapt to dynamic market conditions like inflation, conflicts, and post-COVID changes. Finally, new transparency and sustainability laws, such as the EU's Corporate Sustainability Reporting Directive (CSRD), have profoundly impacted procurement practices. These regulations have prompted organizations to prioritize ethical sourcing, responsible resource management, and the reduction of environmental footprint in their procurement processes.

How can today's procurement leaders manage to overcome these challenges, and how can start-ups help them become more resilient, sustainable, and collaborative with customers, suppliers, and other stakeholders?

Deconstructing the innovation

The procurement landscape is transforming with the emergence of new technologies and start-ups, which offer both opportunities and challenges for businesses. Among these new players, some repackage old solutions as new ones, while others introduce revolutionary approaches with the potential to reshape the industry.

While this increase in start-ups in procurement has provided businesses with more choices, it has also led to a competitive market, with numerous start-ups challenging the dominance of established companies. This has led to a fragmented market where not all start-ups can sufficiently establish a product-market fit or differentiate themselves.

Moving forward, the industry will continue to experience consolidations as companies seek to join forces or acquire competitors to strengthen their market position and refine their offerings. The wide range of options and the potential for market consolidation highlights the importance of businesses carefully evaluating their procurement needs and the available solutions.

To understand the varied solutions within the startup ecosystem, our exploration is methodically organized around five pivotal components that form the backbone of any efficient procurement system. These include:

1. **Supplier discovery:** The first phase in the procurement process involves finding suppliers who serve as the foundation for many later tasks.

2. **Sourcing:** A critical aspect is making informed, strategic decisions concerning where and how to acquire the necessary resources.

3. **Supplier management:** It involves managing relationships with suppliers and ensuring a seamless flow of goods and services.

4. **Contract management:** It is about administration of contracts with suppliers, including negotiation, compliance, and performance evaluation.

5. **Spend management and reporting analytics:** Uses data to provide insights into spend, supplier performance, cost savings, and potential areas of improvement.



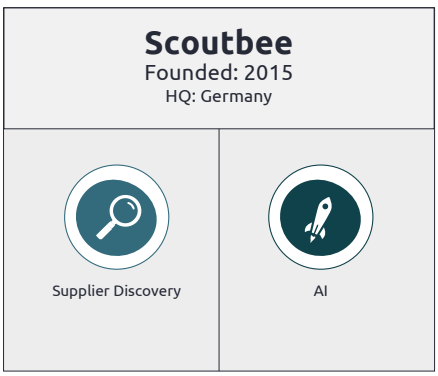
Figure 11: Capgemini Technology Maturity Model

In addition to these five components, we have highlighted two trends that will highly impact procurement in the coming years. Firstly, sustainability reshapes traditional procurement by promoting ethical sourcing, reducing environmental impact, and encouraging social responsibility. Secondly, Artificial Intelligence (AI) is a disruptive technology with wide-ranging applications for procurement that will completely change the industry. To extract insights on these five elements of procurement, we interviewed a selection of start-ups from our longlist.

Supplier discovery

It all starts with finding suppliers, and supplier discovery is a crucial step in the procurement process. It involves researching the market to find suitable suppliers who will be able to deliver the goods or services needed. It is essential for the bottom line as having the best suppliers bidding can correlate directly with improved financial and operational results. However, the sheer volume of available suppliers can be overwhelming, and finding the right supplier to meet specific product quality, reliability, and price requirements can be challenging. Manually scouting all potential suppliers is unfeasible due to the volume of data, the cognitive difficulty of evaluating numerous factors for each supplier, and the substantial time investment required. Instead, AI and machine learning algorithms can screen millions of suppliers within seconds, significantly improving the efficiency and effectiveness of supplier scouting. We have assessed several start-ups in this area and interviewed a few to better understand the current state of solutions for supplier discovery.

Scoutbee provides an effective AI-driven supplier discovery platform that significantly accelerates finding, evaluating, and connecting with suppliers globally. Utilizing sophisticated AI algorithms, Scoutbee can scan and analyze large amounts of supplier data in a fraction of the time. The platform provides an in-depth overview of each potential supplier, offering critical data that includes risk and strategic profiles, ensuring that the suppliers



identified align with an organization's specific needs. Such comprehensive data supports companies in making informed, strategic decisions when choosing suppliers, enhancing supply chain resilience, and achieving operational efficiency. Moreover, Scoutbee's AI capabilities are instrumental in supporting sustainability efforts by quickly identifying and prequalifying sustainable suppliers.

In the rapidly changing global market, the speed and accuracy of Scoutbee's AI tools offer a distinct competitive advantage, enabling companies to quickly adapt their supply bases to meet evolving demands.

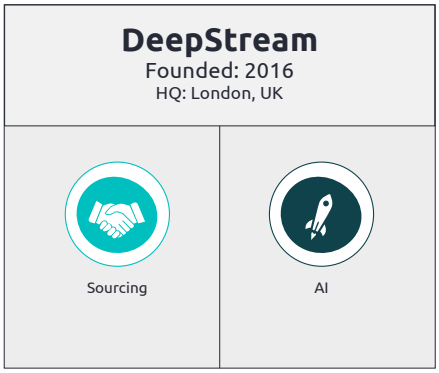
There are also other start-ups in the supplier discovery space we did not interview such as, Qualifyze, Titan, Tropic, Vendr, Buyhive, and Apadua.

Sourcing

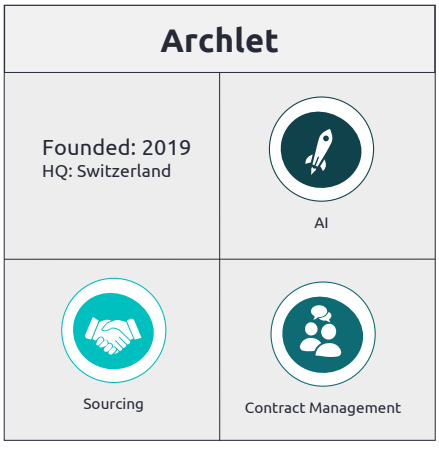
Sourcing identifies, selects, and manages suppliers to fulfill an organization's operational requirements. It involves an extensive process that includes researching, setting benchmarks, and opting for suppliers that fulfill these requirements. A vital part of sourcing involves requesting quotations for new products, negotiating, and analyzing supplier risk. It is not easy to choose the right supplier for purchasing managers, especially today, as selecting a supplier is a significant commitment since it forms the bedrock of numerous subsequent activities. However, selecting the optimal suppliers can have a domino effect, leading to reduced purchasing costs, enhanced profitability, improved customer satisfaction, and better competitiveness.

After finding suppliers the selection process usually involves a series of requests or RFX (Request for Information, Proposal, Quotation) to select the optimal supplier. The data involved in the RFX process is complex, presenting a significant challenge since manually managing all this information can result in human errors and delays. In addition, most businesses currently lack a centralized system to track the status of each component within the RFX process. Moreover, the lack of transparency in the process often leads to procurement managers reacting to issues rather than proactively managing them, eventually ending in unsatisfactory results.

DeepStream's solutions cater to all RFX scenarios, ranging from simple price inquiries to intricate multi-stage strategic tenders, addressing a gap where previous systems were overly complex, time-consuming, and costly to set up. DeepStream primarily targets the sourcing segment of the procurement process, and the platform is designed to be a plug-and-play solution that is intuitive and user-friendly. The platform offers automated solutions for traditional sourcing methods, such as phone calls or emails, which helps reduce transaction costs, mitigate compliance risks, and significantly benefit procurement teams aiming to optimize their resource allocation. In addition, automating routine tasks frees employees to engage in more strategic and value-adding activities, aiding an environment that encourages innovation and cost savings. DeepStream's platform offers a compelling solution for organizations looking to improve efficiency, reduce costs, and mitigate risks.



Beyond the initial victory of winning a contract, **Archlet** seamlessly transitions to ensure the best outcomes in negotiations. This sourcing platform offers AI-powered tools that greatly enhance the contract negotiation process. Its AI-based sourcing analytics highlight key negotiation opportunities, driving



efficiency and competition. Users can create detailed sourcing scenarios considering various factors, enabling more informed and data-backed negotiations. Archlet also provides automatic data validation, ensuring the quality and accuracy of supplier proposals. With advanced analytics and intuitive scenario building, users can thoroughly understand cost drivers and competitive cost comparisons and make holistic decisions that improve negotiation outcomes.

Not only will Archlet move tenders and analytics from Outlook and Excel to one flexible and central platform, the user-centric tender management, analytics, scenario planning, and optimization capabilities scale with the project's complexity. By enabling holistic sourcing decisions incorporating factors such as sustainability, risk, or diversity, their platform empowers every user to make faster and better sourcing decisions.

There are several other start-ups in the sourcing space we did not interview, such as Mysupply.

Supplier management

Supplier management is integral to procurement, ensuring efficient operations and minimizing risks by overseeing and maintaining effective relationships with a company's suppliers. This process involves not only managing all supplier-related information but also facilitating open communication, trust, and collaboration. Given that many companies' supplier bases have become intricate global networks, the task of managing them has grown time-consuming and costly. Adding to the complexity, businesses often still rely on manually entered data, which can lead to errors and inefficiencies. Managing supplier information is a challenge due to the dynamic nature of businesses, including mergers, acquisitions, changes in operations, and policy shifts. Accurate and up-to-date records are essential, especially when more than 50% of a company's revenues are often tied to supplies, requiring continuously updated visibility on what and how a supplier can deliver.

Effective management of supplier relationships is also crucial. It leads to mutual benefits such as access to new technologies, reduced risks, and improved product quality. However, this requires considerable time and effort to overcome barriers like culture and geography. Additionally, evaluating performance which involves tracking key metrics and ensuring compliance, and managing risks within the supplier network calls for constant vigilance.

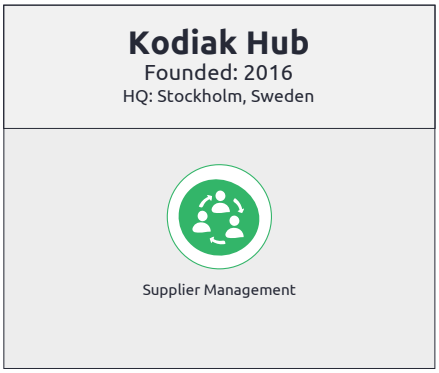
Addressing these multifaceted challenges requires a proactive approach, robust communication, and an investment in technology.

Supplhi is a best-of-breed supplier management platform developed for the B2B industrial equipment and services market. The platform provides comprehensive supplier visibility and data management solutions, delivering valuable insights across multiple supplier tiers. With its data cleansing and integration capabilities, Supplhi ensures supplier information is accurate, standardized, and compatible with various formats and systems. It can also streamline the supplier onboarding process beyond individual companies as Supplhi collaborates with multiple suppliers within the same industry by providing a shared platform and common approach to supply chain management, creating network effects that increase efficiency and multi-tier visibility. Network effects is not a technology but more of a concept, meaning as the network of suppliers grows, the value of the product or service can increase exponentially, and several of the start-ups interviewed use network effects to achieve synergies when managing suppliers.



Kodiak Hub is a Swedish start-up which helps its clients understand suppliers and pinpoint potential collaboration to strengthen supplier relationships, drive top-line value, and additionally predict corresponding risks. Kodiak Hub offers a unique

supplier management solution that combines risk management, compliance, performance, quality, sustainability, and sourcing/procurement. Their core platform provides user-friendly functionalities for information and data management, document management, collaboration between buyers and suppliers, and reports and analytics. In addition, they offer two main service pillars: third-party risk insights and process optimization. Primarily operating in businesses with direct materials, the startup has industry references in all industries, performing risk management as quickly as possible to drive top-line and stakeholder value.



Contract management

Organizations encounter ever-increasing pressure to reduce costs and improve company performance. An essential process within the field of procurement is contract management, which implies the creation, execution, and analysis of contracts to maximize operational and financial performance while reducing financial risk. Contract management is considered a very time- consuming element of business, facilitating the need for an effective and automated contract management system.

Due to its high complexity, contract management in purchasing can present numerous challenges. First, closing contracts is often considered a time-consuming and resource intensive process, as contracts can involve multiple stakeholders, legal considerations, and detailed terms and conditions, causing high complexity. Moreover, the identification and mitigation of risks can be demanding. Second, contract visibility and tracking must be taken care of. Lack of centralized contract repositories and inefficiency in tracking mechanisms (especially for organizations with a high number of contracts) can cause missing deadlines, financial loss, or non-compliance.

Additionally, balancing the expectations and needs of both parties in contract negotiations, together with ensuring legal compliance and achieving a final agreement, requires effective communication and negotiation skills. In addition, organizations need to deal with compliance and legal issues, supplier performance monitoring, and change management. For existing contracts, contract renewal and termination might also be challenging, particularly if no automated reminders or systems are in place. Adopting and managing contract management tools and solutions is very useful for managing e-contracts. This also brings challenges since it needs to be integrated with the existing system and involves data security and migration. In the case of success, this can lead to the ability to make informed and data-driven decisions. These challenges and potential inefficiencies highlight the need for streamlined and automated processes to improve contract management efficiency. In addition, a proactive approach, effective communication, and using technology solutions can enhance contract visibility and efficiency, in turn leading to better outcomes for the procurement department.

Several start-ups have responded to the challenges of contract management; one such startup is Terzo, a company specializing in contract management and analytics. Their primary objective is to unlock key insights from contracts, improving supplier relationships. **Terzo** can be seen as a custodian of contract inventories, streamlining suppliers by weeding out redundancies and showcasing a compliance heatmap for potential risks.



Terzo's primary focus is integrating ESG components into contract creation and upkeep. By utilizing a multi-level approach of advanced contract intelligence, AI-powered contract analytics, and 360-degree supplier relationship monitoring, Terzo addresses the problem of sourcing transparency and associated risks. This approach is built on three core principles. First, contract intelligence offers actionable intelligence that empowers intelligent and ESG-oriented decisions. Second, their contract analytics, backed by artificial intelligence, come equipped with ready-to-use dashboards that convert contract data into actionable, real-time insights. Third, 360-degree supplier relationship monitoring provides an overview of tailored data for every supplier in the portfolio.

With the capability to project future commitments with a five-year forecast, Terzo brings added value to its offering. It also provides visual representation and scrutiny of contract data, including details like access clauses, agreement categories, and regulatory data.

Therefore, due to its comprehensive services and offerings, Terzo has established itself as a vital provider, capable of consolidating redundant suppliers and accounting for the inherent risks involved in contracts. There are also other start-ups in the contract management space that we did not get to interview such as: Pactum, SKUChain, Inhubber.

Spend management, Reporting & Analytics

Spend management is the strategic process of controlling and optimizing expenses associated with procuring goods and services. This process involves tracking, analyzing, and managing the entire lifecycle of procurement activities, from requisition to payment. To effectively manage an organization's spend, it is essential to establish a reliable reporting system that generates and presents meaningful insights and metrics from spend data, supplier performance, and other relevant factors. On the other hand, analytics goes one step further and involves the application of statistical methods and data-driven techniques to identify trends, patterns, and opportunities for optimization within procurement operations.

Procurement departments have historically encountered several obstacles when analyzing and managing spend data. These obstacles are common when, for example, starting to implement spend management in an organization. It often occurs that data from sourcing processes lives in a multitude of spreadsheets and text documents, ordering information resides in so many ERP instances, spend and invoicing data is in different invoicing systems, and experience about supplier performance is not written down but mainly in the heads of long-term employees. This brings several challenges, but some of the most prevalent are:

- **Data fragmentation:** The vast amount of data generated by procurement activities often resides in disparate systems, making it challenging to consolidate and analyze effectively. This fragmentation leads to inconsistencies and significantly limits the ability to gain comprehensive insights.

- **Lack of real-time visibility:** Traditional procurement processes lack real-time visibility into spending patterns, supplier performance, and market trends. This limitation hinders proactive decision-making and may result in missed cost-saving opportunities or increased risk exposure.

- **Manual reporting:** Generating reports in a manual and labor-intensive manner not only consumes valuable time and resources but also introduces the possibility of errors and inaccuracies. The absence of automated reporting tools restricts the ability to provide accurate and timely information to stakeholders.

Emerging technologies offer promising solutions to address the challenges faced by procurement departments, and in many ways, start-ups are leading the charge.

Data consolidation is not rocket-science but is still a high barrier to overcome due to the complexity of companies' IT landscapes and need for large investments and manual effort. While many solutions are trying to tackle this challenge by delivering different platforms, from the big traditional

integrated enterprise solutions to many smaller niche-actors, one notable startup in this space is Ignite Procurement.

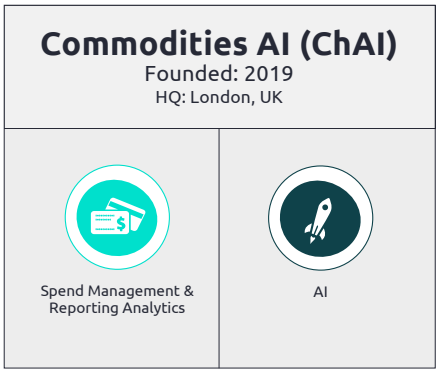
Through their Procurement Analytics feature, **Ignite Procurement** is designed to seamlessly connect data from various sources, such as invoice data and purchase orders, supplier and material master data, budget and contract data, internal classifications, and more. It includes the ability to conduct supplier due diligence, integrating this data into supplier analysis to create a comprehensive supplier 360° view, combined with companies' own data and data from third-party sources. With an ever-expanding library of out-of-the-box integrations for most common ERPs and other relevant systems platforms and built-in categorization that can be adapted to customers' standards, they enable procurement professionals to quickly gain access to a unified view of spend data, eliminating fragmentation and enabling comprehensive analysis.



Once Ignite Procurement has connected to, consolidated, and categorized companies' data, they leverage AI technologies such as dynamic natural-language processing models and machine learning that embed market intelligence, forecasts, and trends to automate data visualization and historical and predictive analytics. This uncovers opportunities and risks, and provides actionable insights, such as key contracts or categories to renegotiate, or even how to minimize the CO2 footprint by redirecting spend. In addition, Ignite Procurement offers a Carbon Accounting module to provide comprehensive insight into CO2 emissions alongside costs. This feature seamlessly integrates with other data sources and analytic tools within Ignite Procurement, offering a holistic understanding of both financial and environmental factors, thereby enabling more sustainable and informed decision-making. Like Terzo, Ignite Procurement shows how AI-powered tools enhance decision-making capabilities and enable procurement professionals to make data-driven choices quickly.

In today's volatile economic climate, precise price forecasting is crucial for the procurement of raw materials and products. While traditional forecasting methods offer value, they are constrained by human data processing capabilities and are susceptible to biases. Often, these methods produce forecasts that lack long-term accuracy, failing to provide insights several months ahead. Such shortcomings in price forecasting can result in unexpected price swings, leading to financial instability, derailing budget plans, and compelling companies to make reactive strategic adjustments.

Solutions such as **ChAI** offer a promising and proactive alternative price forecasting free from human biases. By employing advanced AI algorithms, ChAI can provide data-driven price forecasts of commodities up to 12 months into the future. By leveraging AI's ability to process vast amounts of unstructured data, ChAI identifies key price drivers and presents comprehensive forecasts by processing data from diverse sources such as satellite imagery, freight data, economic statistics, and financial information. This empowers businesses with more precise forecasts, reducing the risk of unforeseen price shocks and providing valuable lead time to adjust strategies accordingly.



Beyond forecasting, ChAI offers market insights as

well as additional tools that enhance commodity budgeting, supply chain cost anticipation, and cost modeling that incorporates both historical and forecasted prices. These features allow businesses to stay ahead of market changes, optimize their procurement and hedging processes, and ultimately safeguard their product margins amid market volatility. AI-driven price forecasting is paving the way for a new era of precision and data-driven decision-making in modern procurement practices, ensuring businesses stay agile, informed, and ahead of market fluctuations.

The challenges faced by procurement departments in spend management, reporting, and analytics can be effectively addressed through the adoption of modern technologies. Data consolidation and integration platforms, AI-powered tools, and predictive analytics provide innovative solutions that streamline processes, enable data-driven decision-making, enhance risk management, and improve overall efficiency. By leveraging these technologies, businesses can revolutionize their procurement processes and gain a competitive edge in the evolving marketplace. As part of the research, we have interviewed Ignite Procurement, Terzo, and Commodities AI, to understand how they are helping their clients achieve this, but the list of innovative new companies is long and ever-expanding, with contributions from, for example, PAAS360, Tacto, Yaydoo, Ravacan, Scalue, Suplari, Simfoni Limited, Intelflow (formerly Lhotse Analytics).

Sustainability

Sustainability has an impact on various aspects of society, the economy, and the environment. Sustainability can contribute to a more balanced and resilient future. Especially in procurement, resilience is a topic that is getting more visibility with recent supply chain disruptions challenging the global network of suppliers. Sustainable procurement particularly means incorporating environmentally and socially responsible considerations into an organization's purchasing decisions. It aims to minimize adverse effects on the planet and society while supporting business longevity and efficiency. In addition, this approach helps in mitigating supply chain risks, enhancing brand image, and fostering innovative, eco-friendly solutions.

The landscape of sustainability regulations and standards is constantly evolving. Keeping up with the changing requirements, ensuring compliance, and adapting procurement practices can be challenging for organizations. A typical challenge in terms of sustainability is supply chain transparency. It can be difficult to trace the origin of raw materials, assess suppliers' sustainability practices, and ensure compliance with ethical and environmental standards. Additionally, not all suppliers are aligned with the sustainability goals that many companies have set for themselves. The availability of sustainable products and services may be limited, especially in certain industries or geographic regions. This limitation can make it difficult to source environmentally friendly alternatives. Encouraging suppliers to adopt sustainable practices can be a challenge. Suppliers may resist changes due to cost concerns, a lack of awareness, or limited resources. Building strong partnerships and collaborative relationships with suppliers is crucial to driving sustainability improvements throughout the supply chain. Also, establishing appropriate metrics and measurement systems to evaluate and report on sustainability performance is complex. Organizations need to develop effective tracking mechanisms and reporting frameworks to assess progress, identify areas for improvement, and communicate their sustainability achievements.

The startup **Ctrl+s** tackles these supplier management challenges by offering specialized tools like **matter+s** and **supplier+s**, which focus on carbon accounting and carbon performance management at the supplier level. Matter+s generates scope 3 upstream transparency using a spend-based approach. By linking procurement data with emission factors from a multi-



regional input-output model, the tool delivers carbon footprint results on a commodity, supplier, and regional level, distinguishing between tier-1 and tier-n emissions. This gives insights on emission hotspots and builds the foundation for carbon reduction efforts. To involve suppliers in the decarbonization process, the platform supplier+s can be used to request information on planned carbon reduction measures and their level of integration from the supply chain. A questionnaire includes a set of predefined reduction measures for different industries, for which the supplier maps out, if these measures are being implemented, to which level they are so far, and which level of implementation they intend to reach within the next years. This way the platform calculates the absolute reduction potential per supplier based on these measures and supports the leading firm in forecasting the reduction performance. This information can then be integrated into the supplier classification process and enables tracking of the new KPI 'CO2' in the supply base.

Another interesting startup is **Carbmee**, which offers a carbon management solution that can calculate the carbon footprint by considering all emissions across the value chain, including the company's, products', and suppliers 'carbon footprint. Their approach is unique as they match, with the help of AI, company data with external databases to determine the correct carbon footprint by considering the entire value chain. This differs from traditional approaches, where spend is the main factor for determining the carbon footprint, and external factors such as inflation can influence measurements. By offering data insights to companies, thorough insight is created that can influence supplier collaboration, as increasing government regulation with associated costs will introduce the carbon footprint as a deciding factor. In addition, the solution has reporting capabilities that can show sustainability transformation and reduction progress, providing reports that have a compliance status with international standards. Carbmee is offering a solution that establishes a new and robust measurement system for measuring carbon footprint in complex industries by not focusing only on spend, but also retrieving emission data through the entire value chain.

Carbmee
Founded: 2021
HQ: Berlin, Germany

Sustainability

Pursuing sustainability should not be considered a distinct responsibility for the sustainability manager, as, in a procurement context, sustainability extends beyond regulatory compliance and contributes significantly to cost-saving initiatives. Furthermore, it represents a strategic alignment between business efficiency and environmental responsibility, as a sustainable approach can reduce operational costs and mitigate supply chain risks.

Given sustainability's growing importance, it needs to be integrated across all levels and functions of procurement, with the CPO leading the way. If procurement fails to adopt and prioritize sustainability, there is a risk that some procurement responsibilities may be reallocated to a sustainability manager or other business functions. Procurement leaders should proactively embrace sustainability to ensure that procurement remains a strategic, influential function within the organization.

Interesting to monitor closely from a sustainability point of view is Terzo, as this startup combines a specific go-to-market strategy, resulting in sustainability-centered go-to-market vision. They are mostly driven by new legislative, regulatory, and stakeholder priorities that place increased pressure on CPOs. Examples include evolutions such as the Business Supply Chain Transparency on Trafficking and Slavery Act (2020), the California Transparency in Supply Chains Act (2010), and the Modern Slavery Act (2015).

Choosing the right path

The emerging technologies highlighted in this chapter are just a handful of the numerous start-ups we have explored. Our team has invested significant time and

effort into researching hundreds of start-ups. So, faced with many choices, how does one make the right decision?

What you need is a solution that encompasses all the facets of procurement discussed here. Some start-ups included may seem like add-ons to the current procurement environment, offering solutions to specific issues. Meanwhile, others provide comprehensive, best-of-breed solutions. Some of the shortlisted start-ups have even entered partnerships to provide better solutions.

While ROI is essential, the priority should be on solutions offering strategic decision support, regardless of current solutions and the company's needs. It is crucial for businesses to carefully weigh the pros and cons of new technologies and seek expert advice before deciding. Companies opting for new technology should also focus on equipping their employees with the necessary training and support to ensure a smooth transition and optimal technology use. If executed correctly, new technology can enhance the company's productivity and efficiency, leading to better overall performance.

Additionally, it is vital to understand that a new technology is not a one-size-fits-all solution for all businesses. Some businesses may need help with implementing automation due to high start-up development and maintenance costs, while others may need specialized technical expertise.

At Capgemini, we assist businesses in implementing new technology holistically through our customized technology transformation journeys.



Conclusion/Summary

The ambition of this study was to give an overview of several key areas of interest in the procurement domain. We have showcased detailed insights in four areas Trending Topics, Procurement Priorities, Procurement Technologies, and Start-ups and below you will find a summary and main takeaway for each of these sections.

Trending Topics

Reducing carbon footprint

We have explored strategies for reducing your carbon footprint through procurement with our tailored four-step methodology, Measure>Focus>Act>Monitor. How to measure emissions and use this information to focus efforts in the most efficient manner, utilizing the carbon reduction levers at our disposal, the levers being quantity management, product/service optimization, and supplier engagement. Capgemini has tools like the Capgemini Low Carbon Navigator to support our clients in this area. Following strategy implementation, there is a need to monitor and adjust your carbon reduction strategy over time. A key component of utilizing procurement for carbon reduction is the alignment of procurement strategy with the corporate ESG strategy, ensuring sustainability is at the heart of procurement processes and policies.

Inflation

Global Inflation has become a key concern for CPOs; it resembles a storm at sea, with governments and businesses taking on the roles of ship captains, diligently working to navigate through the challenges it presents. Procurement functions have a tremendous opportunity to mitigate these risks and help create a more resilient supply chain by equipping buyers with the right knowledge, skills, and tools to do so. Creating an inflation risk matrix will identify priority categories to focus on, and data needs to be leveraged, to drive productive discussion with internal and external stakeholders.

Supply chain decoupling

We have seen that full supply chain decoupling is now unlikely, but we can expect a shift towards competing blocks of supply chains, which will be closely connected with the global geopolitical landscape. Companies can respond to these risks through both technology and strategic approaches. This approach can alert us in advance of potential problems through increased supply chain visibility and enable alternative solutions to be put in place. Exploration of developing technologies with automation or 3D printing and utilization of digital inventories can reduce the need for offshoring. Developing circular economies for products can prevent future risks due to natural resource availability, while also positively impacting business sustainability. Examining the current challenges that are having a significant business impact, reviewing the resilience and sustainability of existing supply chains can position companies to gain a competitive advantage in the future.

Procurement driven innovation

Innovation is a driving force behind progress, growth, and success in today's competitive world. Procurement has a key role to play in driving innovation within a company by owning the relationship with the supply base, by identifying, and sourcing new and innovative products and services, and promoting a culture of continuous improvement within the organization. To become strategic and accelerate inventive change, procurement departments must focus on innovation in procurement strategy. Supplier encouragement is key to fostering an environment of innovation and can be achieved by encouraging collaboration between suppliers.

Procurement Priorities

Risk management

We have seen that globalization has brought growth but has also increased the complexity of supply chain risks. Through continuous proactive risk management, companies can develop mitigation strategies for external and internal risks, implement best practices in governance, and establish alert mechanisms to enable businesses to manage those risks effectively.

Unleashing the power of AI

AI has undeniable potential to improve procurement effectiveness, but we need to carefully consider its challenges and second-degree effects. We need to ensure that AI systems are developed with fairness and accuracy in mind and that we are aware of the theoretical limits of AI.

Ultimately, the successful adoption of AI in digital procurement enablement rrequires an approach where human expertise is combined with the power of AI to drive innovation and create value—the foundations of Industry 5.0. By addressing these challenges and harnessing the power of AI, organizations can unlock the full potential of procurement data, achieve their business objectives, and work towards creating a more innovative and sustainable future.

Sustainability

The need for sustainability is driving organizations to rethink their procurement practices. By incorporating sustainability into their procurement decisions, organizations can reduce their environmental impact. This also requires reskilling the workforce, and according to our survey respondents, the skills required in the future include awareness about global supply chain changes, digitalization, relationship building, and commercial skills.

Employing technology and data to benefit the procurement function

Technology is a tool, and it should be utilized to accomplish business goals and improve the end-user experience. Creating a digital culture in corporate procurement requires a multipronged approach that involves technology, processes, and people. Ensuring sufficient focus on process improvement and people can lead to efficient implementation of key technology. Any technology will require good data to maximize its potential, and data management takes effort, but investment here can provide quick returns. Improved data quality translates into improved data visibility, which supports a more informed decision-making. This in turn elevates the procurement function within the entire organization and enables it to work more collaboratively with operational stakeholders to meet the needs of the business.

Procurement Technologies

Working more collaboratively with business stakeholders can shift an organization from a cost-driven enterprise to a value-driven enterprise. Technology helps accelerate this transition, as evidenced by the Capgemini Maturity Model, which illustrates the progression from operational procurement and 1st generation technologies towards the cutting-edge solutions of blockchain, AI/ML, and the emerging Gen AI capabilities. Key considerations of integration, ease-of-use, and flexibility are key when considering Source-to-Pay technologies. The most successful technology deployment projects are implemented as part of wider procurement transformation programs that focus on people, processes, change management, and most importantly, senior management support for change. We have seen the common pitfalls of procurement technology implementation and the best practices on how to prevent them. Learning from these can set any project up for success in delivering value back to the business.

Start-ups

The procurement technology area is booming with new start-ups entering the market offering unique solutions that are changing traditional approaches, and we have reviewed their potential impact on business. As with any industry, start-ups have the advantage of being nimbler and more innovative, but a typical weakness is that they only cover a part of the pain points for procurement leaders. To counter this, we are seeing that some start-ups are partnering up to offer more comprehensive solutions to their clients. As with any technology implementation, companies should not underestimate the need to dedicate personnel to the implementation project. This can be more pertinent with start-ups, especially those that might not have the industry-specific knowledge needed to get the best out of their tools for your business.

In our opinion, the topics described in this study provide a glimpse of the discussion points in CPO offices worldwide, in various capacities. While we remain optimistic that some of the influencing factors will resolve on their own or not resurface, we also recognize that some emerging trends have the potential to change the future of procurement forever.

We hope you enjoyed reading the Capgemini Intelligent Procurement Study.



Appendix Authors and Contributors

Core team



Daniel Fichtlscherer
Consultant
Capgemini Invent, Germany
Industrial Procurement
daniel.fichtlscherer@capgemini.com



Dico van Dijk
Head of Procurement
Capgemini Invent, Netherlands
Head of Procurement
Transformation NL
dico.van.dijk@capgemini.com



Kadir Tekin
Director
Capgemini Invent, Germany
Industrial Procurement
abduelkadir.tekin@capgemini.com



Nadine Reidenbach
Senior Consultant
Capgemini Invent, Germany
Industrial Procurement
nadine.reidenbach@capgemini.com



Christina Koch
Consultant
Capgemini Invent, Germany
Industrial Procurement
christina.koch@capgemini.com



Thomas Gannon
Director
Capgemini Invent, Norway
Procurement Transformation
thomas.gannon@capgemini.com



Lukas Grünewald
Consultant
Capgemini Invent, Germany
Industrial Procurement
lukas.gruenewald@capgemini.com

Start-ups



Dries de Mey
Consultant
Capgemini Invent, Netherlands
Supply Chain Transformation
dries.de.mey@capgemini.com



Bjørn Ravndal
Senior Manager
Capgemini Invent, Norway
Intelligent and Sustainable
Operations / Manufacturing
bjorn.ravndal@capgemini.com



Benjamin Lindhøyen
Senior Consultant
Capgemini Invent, Norway
Intelligent and Sustainable Operations
benjamin.lindhoyen@capgemini.com



Nima Hug
Consultant
Capgemini Invent, Germany
Industrial Procurement
nima-sebastian.hug@capgemini.com



Dmitar Vojnovic
Managing Consultant
Capgemini PBS, Netherlands
LoB Sourcing & Procurement
dmitar.vojnovic@capgemini.com



Galib Kazi
Engagement Manager
Capgemini APPS, Germany
eProcurement
galib.kazi@capgemini.com



Lal Bahadur Sahu
Operation Manager
Capgemini APPS, Germany
eProcurement
lal.a.sahu@capgemini.com

Technologies



Stefan Gaiser
Managing Consultant
Capgemini APPS, Germany
eProcurement
stefan.gaiser@capgemini.com



Marc Wallstab
Senior Consultant
Capgemini APPS, Germany
eProcurement
marc.wallstab@capgemini.com



Markus Reckenfeld
Managing Business Enterprise Architect
Capgemini APPS, Germany
eProcurement
markus.reckenfeld@capgemini.com



Raj Sharma
Solution Architect
Capgemini BSv, Americas
Cognitive Procurement Services
raj.l.sharma@capgemini.com



Kexing Lu
Senior Consultant
Capgemini APPS, Germany
eProcurement
kexing.lu@capgemini.com

Trending topics



Marcin Sztafrowski
Senior Manager
Capgemini BSv, Poland
Procurement Transformation
marcin.sztafrowski@capgemini.com



Maciej Żebrok
Senior Director
Capgemini BSv, Poland
Cognitive Procurement Services
maciej.zebrok@capgemini.com



Maïwenn Gony
Senior Consultant
Capgemini Invent, France
Procurement Transformation & Sustainable Procurement
maiwenn.gony@capgemini.com



Christopher Brendtner
Associate Consultant
Capgemini Invent, Germany
Industrial Procurement
christopher.brendtner@capgemini.com



Augustin Le Diberder
Managing Consultant
Capgemini Invent, France
Procurement Transformation & Sustainable Procurement
augustin.le-diberder@capgemini.com



Othman El Bouchattoui
Managing Consultant
Capgemini Invent, France
Procurement Transformation & Sustainable Procurement
othman.el-bouchattoui@capgemini.com



Thorben Riske
Consultant
CCapgemini Invent, Germany
Industrial Procurement
thorben.riske@capgemini.com



Dominik Knotte
Senior Manager
Capgemini Invent, Americas
Industrial Procurement
dominik.knotte@capgemini.com



Pia Steffes
Senior Consultant
Capgemini Invent, Germany
Industrial Procurement
pia.steffes@capgemini.com



Sarah Wozny
Consultant
Capgemini Invent, Germany
Industrial Procurement
sarah.wozny@capgemini.com

Procurement priorities



Karolina Gogol-Milkowska
Senior Consultant
Capgemini BSv, Poland
Cognitive Procurement Services
karolina.gogol-milkowska@capgemini.com



Nimish Sarraf
Managing Consultant
Capgemini Invent, Americas
Industrial Procurement
nimish.sarraf@capgemini.com



Shiva Prasanna V
Managing Consultant
Capgemini BSv, India
Procurement Transformation & Sustainable Procurement
shiva-guru.prasanna-v@capgemini.com



Jan Piet Hoekstra
Consultant
Capgemini Invent, Netherlands
Procurement Transformation
jan-piet.hoekstra@capgemini.com



Greg Bateup
Procurement Practice Lead
Capgemini BSv, Poland
Cognitive Procurement Services
greg.bateup@capgemini.com



Robin Jaspers
Consultant
Capgemini Invent, Netherlands
Procurement Transformation
robin.jaspers@capgemini.com

Sponsor



Kai Hasenklever
Vice President
Capgemini Invent, Germany
Industrial Procurement
kai.hasenklever@capgemini.com



Philippe Bruneteau
Director
Capgemini Invent, Americas
Industrial Procurement
philippe.bruneteau@capgemini.com



Sanjeev Singh
Principal
Capgemini APPS, Americas
Procurement Transformation
sanjeev.a.singh@capgemini.com



Richard van Schip
Senior Director
Capgemini Invent, Netherlands
Intelligent and Sustainable Operations
richard.van.schip@capgemini.com



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