

THE AGE OF ARTIFICIAL INTELLIGENCE,
DISCONTINUITY, AND SUSTAINABILITY
TRANSITION:

**NEW COMPETENCIES FOR A
NEW ERA OF PROCUREMENT**

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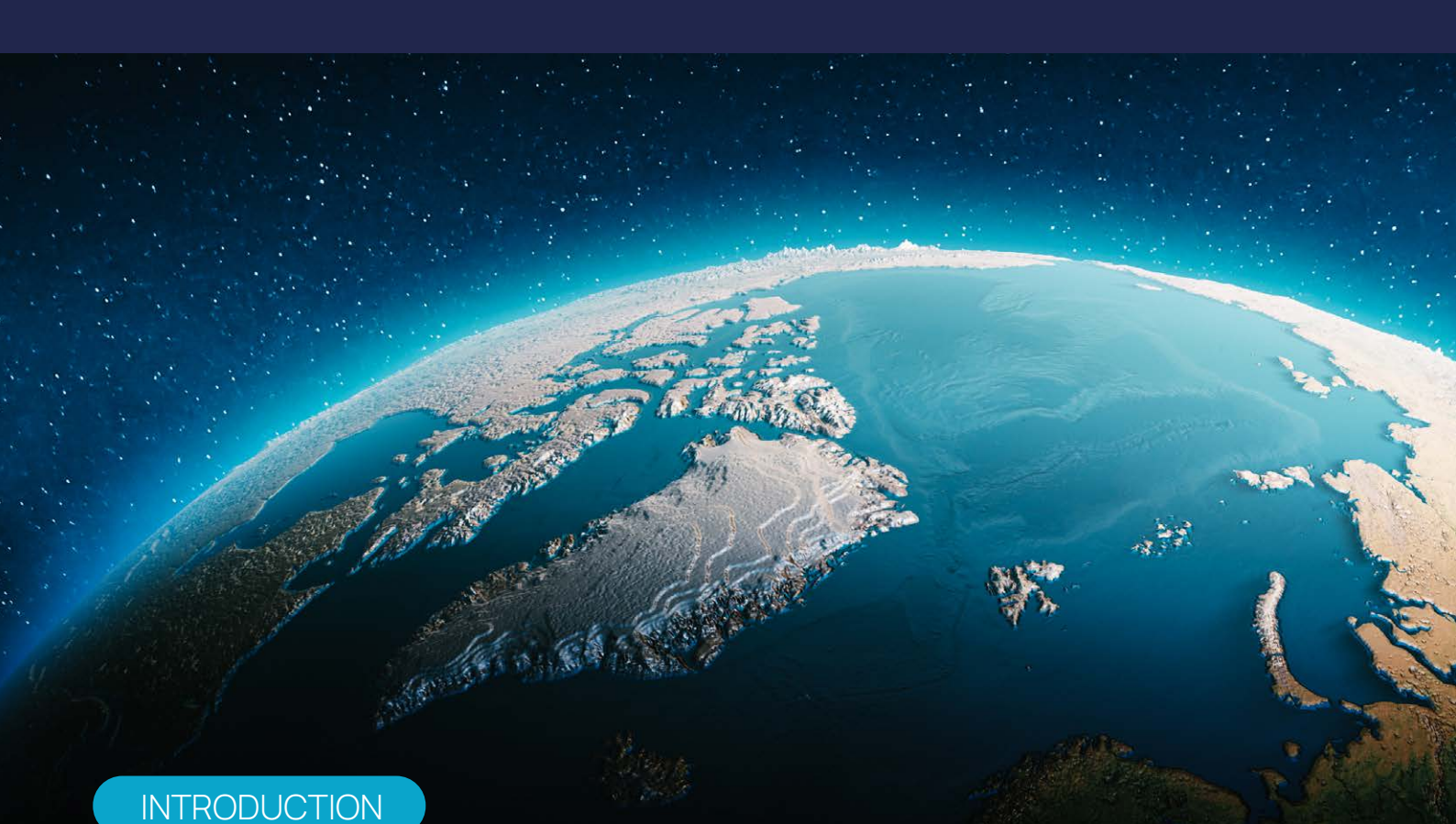
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INTRODUCTION

GLOBAL AND GENERAL PERSPECTIVES

WHAT IS COMPETENCE?

Based on the academic work of Le Boterf (1994)¹ and Deist & Winterton (2005)², we propose the following definition:

Competence is the mobilization or activation of a variety of knowledge, know-how and personal attributes in specific contexts for the successful performance of a task or activity.

Let's highlight 3 points:

- Competence is not a single piece of knowledge or an isolated area of expertise.
- It's an ability to combine and mobilize resources (personal and external), and not just to possess them.
- It is contextual (it depends on the situation) and evolutionary (it develops with experience).

WHAT ARE THE FOUR MAJOR MACRO-TRENDS THAT WILL SHAPE THE COMPETENCIES OF 2030?

1. **Digitization and Artificial Intelligence** are set to have the most significant impact on the transformation of competencies and professions worldwide, according to the World Economic Forum's latest «Future of Jobs» global study.
2. **The fragmentation of the world order and rising economic uncertainties** are linked; they constitute the second macro-trend. The Sino-American rivalry, the invasion of Ukraine, the tariff war - these reveal a shift towards a world of opportunistic alliances and ideological blocs. The «rules-based order» is being challenged by power-driven dynamics (Acharya, 2018)³. International institutions (WTO, UN, IMF etc.) are struggling to guarantee cooperation. In Western

¹ Le Boterf, G. (1994). De la compétence. Essai sur un attracteur étrange, 1994, 16-18.

² Le Deist, F. D., & Winterton, J. (2005). What is competence? Human resource development International, 8(1), 27-46.

³ Acharya, A. (2018). The End of American World Order. Polity Press.

countries, inflationary prospects and stagnation (OECD)⁴ are fuelled by this unprecedented economic uncertainty, itself reinforced by global climate change.

3. Environmental transition is the third macro-trend. Despite the economic turmoil, the World Economic Forum points out that almost 50% of employers worldwide plan to step up their efforts and investments to reduce greenhouse gas emissions.

4. Demographic change is the fourth macro-trend. The aging of the population in Western countries and, in contrast, the growth of the working-age population in many low-income economies are transforming the world order. India and sub-Saharan Africa will provide more than two-thirds of new entrants to the labour market in the coming years. For OECD countries, the old-age dependency ratio will average 32 elderly people per 100 working people in 2023, rising to 53 per 100 in 2050. In response, many Western employers are planning to invest in lifelong development of competencies, and to accelerate automation.



WHAT ARE THE CONSEQUENCES OF THESE MACRO-TRENDS FOR THE TRANSFORMATION OF PROCUREMENT COMPETENCIES BETWEEN NOW AND 2030?

This is the central question we're going to answer, focusing on the impact of the 3 most influential macro-trends:

- 1. Artificial Intelligence**
- 2. Fragmentation of the world order and economic uncertainties**
- 3. Sustainability transition**

WHAT ARE THE GLOBAL CONSEQUENCES OF THESE MACRO-TRENDS?

- › **39% of competencies will change by 2030** («Future of Jobs Report» World Economic Forum). Many competencies - digital competencies in particular - lose half their value in less than 5 years (McKinsey Global Institute). In contrast, the lifespan of a competency in 1985 was 30 years.
- › **The competency gap will be the number one obstacle to business transformation between now and 2030.**
- › **Contrary to common fears, there will be net job creation by 2030, not job destruction.** According to the World Economic Forum study, 92 million jobs will be lost, but 170 million will be created. Net job creation is estimated to be 78 million, a net increase of 7% between now and 2030. The two main reasons for this net job creation are new technologies, in particular Artificial Intelligence, and the green transition.

⁴ The OECD forecasts an average growth rate of less than 2% for developed countries through 2030 (OECD, 2024)

PART 1

ARTIFICIAL INTELLIGENCE: A DISRUPTION OF PROCUREMENT COMPETENCIES?



80% of Chief Procurement Officers worldwide plan to deploy Generative Artificial Intelligence over the next three years.

Today, only 36% have significantly deployed it (EY Global CPO Survey: 2025 outlook).

Gartner predicts that by 2028, at least 15% of daily work decisions will be made autonomously by AI agents, compared with 0% in 2024.

To determine whether Artificial Intelligence is disrupting Procurement competencies, we propose to answer these four questions:

1. What are Generative AI and AI agents?
2. How can Generative AI and AI agents be used in Procurement?
3. Are Generative AI and AI agents a threat or an opportunity for Procurement professionals?
4. How can we successfully achieve human-machine complementarity in Procurement?

1. WHAT ARE GENERATIVE AI AND AI AGENTS?

Understanding how Generative AI and AI agents work, and their technical limitations, gives us a better grasp of their uses in Procurement and their potential for transformation.

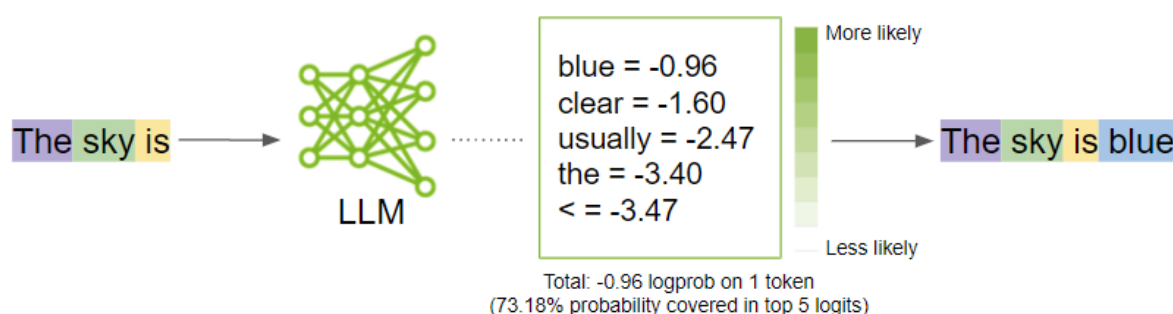
A. WHAT IS GENERATIVE AI?

Generative AI (GenAI) is a category of AI that focuses on creating data and content in response to prompts.

Generative AI uses deep learning models, in particular language models (such as OpenAI's ChatGPT, a Large Language Model) to generate text, code and interactive responses.

These language models are trained on huge quantities of data to learn patterns and structures and to be able to produce them. They are trained on tokens: the minimal unit of text that AI understands and manipulates. For example, in English, the word «cat» is 1 token, while the word «unbelievable» is broken down into several tokens: «un», «believ», «able».

Mathematically, generative modeling estimates the probability that a token (or sequence of tokens) will appear, given a specific context (i.e. previous tokens) (Figure 1).



Source : Nvidia developer A.Surla

B. WHAT ARE THE TECHNICAL LIMITATIONS OF GenAI?

Being based on probabilities, GenAI doesn't «understand» meaning like a human: it predicts what is probable, not what is «true». It can therefore generate inaccuracies or hallucinations

It is dependent on its training data and may reproduce biases, errors, or stereotypes embedded in those datasets.

If proprietary or confidential data is used, it must be secured within the company so as not to generate sensitive content externally.

It can produce ethically inappropriate content, infringe copyright or be misused for malicious purposes (deepfakes, disinformation, etc.).

Another important technical limitation is the “context window”. This is the number of tokens a GenAI model can process at a given time to generate a response. The rest is «forgotten» (outside direct context). As a result:

- GenAI models may be unable to handle very long documents (e.g., procurement contracts spanning hundreds of pages) or multiple documents within a single project.
- They may struggle to maintain conversational coherence or support complex reasoning across fragmented or lengthy exchanges.

- These models have no persistent memory—only a temporary context memory, limited to what is reinjected into the context window.
- Lastly, their performance is dependent on the quality of user prompts, which may vary depending on the user's skill level.

AI agents represent a major breakthrough compared to the inherent limitations of GenAI alone.

A number of technical solutions have already been developed to address these limitations (such as fine-tuning and Retrieval-Augmented Generation). However, AI agents represent a major breakthrough in overcoming some of GenAI's constraints: they enable autonomy, memory, planning, access to external resources, and feedback loops—whereas a standalone GenAI model is limited to immediate, goal-less generation.



C. WHAT IS AN AI AGENT? HOW DOES IT WORK?

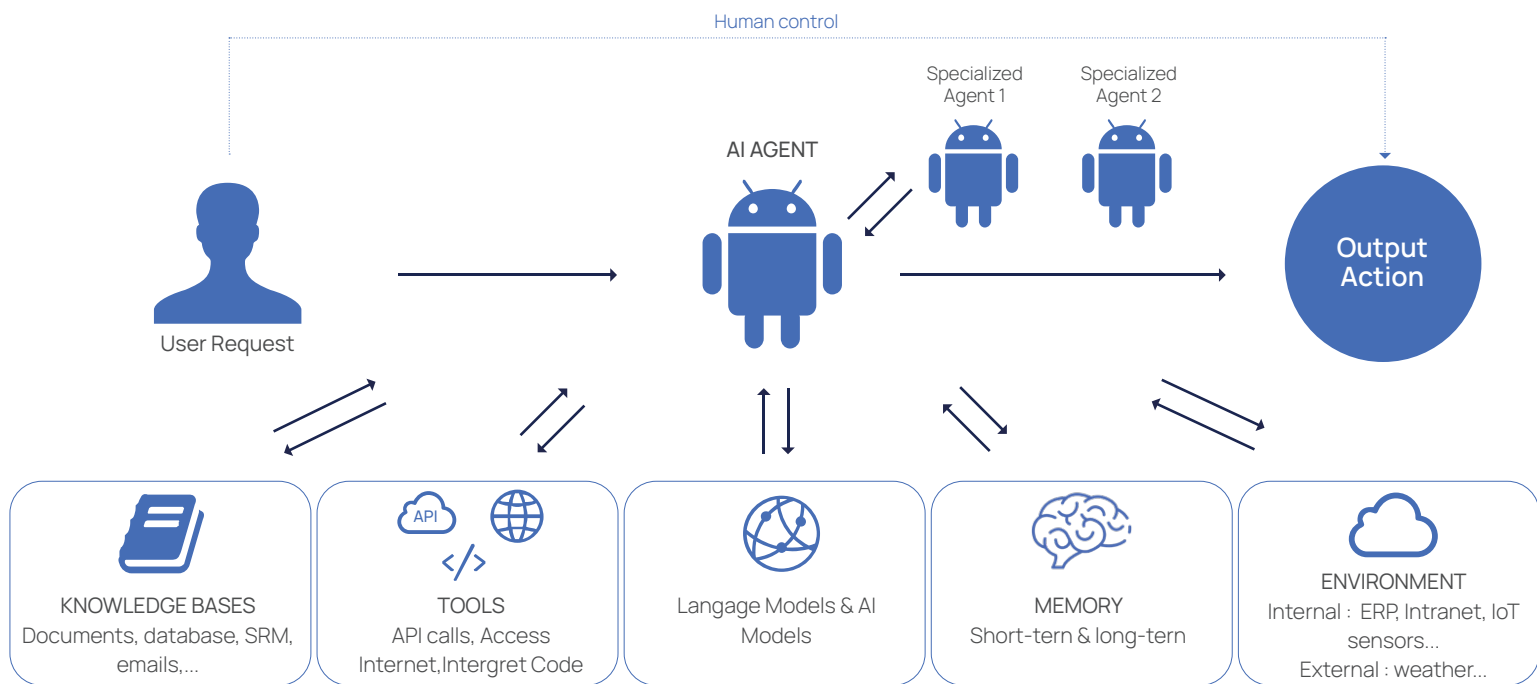
An AI agent is an Artificial Intelligence system that exhibits autonomy and is capable of orchestrating, planning, and executing tasks through interaction with its environment—both internal and external. It mobilizes tools (e.g., web browsers, APIs), GenAI models, and resources (e.g., documents, knowledge bases, query histories) to achieve a given objective. (Figure 2).

An AI agent breaks down an objective into subtasks, coordinates multiple reasoning steps, and retains persistent memory, enabling it to learn over time through interaction. It follows an iterative approach, adjusting its actions based on results. It may also collaborate with other specialized agents (e.g., comparison, summarization, or validation agents), allowing for mutual correction and the execution of complex, multi-step tasks.

It is thus capable of planning, orchestrating, and executing multi-step processes without continuous human intervention—hence the term **autonomous agent**, although human oversight remains, in our view, essential.

While the advancements over standalone GenAI are significant, certain technical limitations persist.

Figure 2: AI Agent Architecture (proposed by N. Tréhan)





D. WHAT ARE THE TECHNICAL LIMITATIONS OF AI AGENTS?

Despite the term “autonomous agent,” an AI agent is not an autonomous brain. It is built upon powerful components—GenAI models, tools, memory modules—but remains highly dependent on the quality of the underlying models, the effectiveness of orchestration, the relevance and structure of its knowledge base, and the precision of the objectives assigned.

In systems with several agents working together, we run the risk of poor synchronization, redundancy or conflicting actions.

Finally, as [Satya Nadella \(Microsoft CEO\) points out](#), AI agent “entitlement” is a key challenge. This refers to defining access rights (i.e., which data the agent can access) and authorized scopes of action (e.g., is the agent authorized to process supplier invoices?). This raises crucial issues of security, confidentiality, accountability, auditability, and compliance.

Limits related to environmental impact will be addressed in part 3.

[In short, although AI agents have not yet been widely deployed in Procurement, they represent a significant advancement over standalone GenAI.](#) Let us now examine how Generative AI and AI agents can be applied in Procurement and the benefits they may deliver.

2. HOW CAN GENERATIVE AI AND AI AGENTS BE USED IN PROCUREMENT?

A. WHICH PROCUREMENT TASKS CAN BE PERFORMED BY GENERATIVE AI?

The concept of [work pixelation](#) refers to the fragmentation of professional activities into smaller, more specialized units. In Procurement, this pixelation can facilitate the application of GenAI - particularly when these tasks are repetitive and standardized. As an example, the decomposition of the source-to-pay process into multiple specialized tasks and subtasks facilitates the application of Generative AI.

Based on the key stages of the Procurement process, we propose specific use cases for GenAI at each step. All of these use cases have already been deployed in procurement functions (Figure 3). It goes without saying that contextual complexity and data quality are critical factors influencing the outcomes.

Figure 3: Use cases of GenAI in Procurement (proposed N. Tréhan)

Procurement process		GenAI use cases
1	Spend analysis	- Identify patterns, anomalies, rogue spend and savings opportunities - Categorize tail spend
2	Needs formalization	- Automate the creation of basic-repetitive specifications
3	Market intelligence	- Analyze market trends, historical data, regulatory environments, new entrants...
4	Supplier search	- Suggest panel suppliers - Identify potential suppliers based on specific criteria
5	Risk monitoring	- Provide supplier risk profile - Provide early external warning - Predicts supplier failures - Create scenarios
6	RFx	- Draw up standardized sections based on predefined templates. - Analyze past RFx and outcomes to improve the content and structure of new RFx - Generate and send automated RFx
7	Bid evaluation	- Compare quotations - Search for similar quotations in internal database - Detect inconsistencies in supplier responses - Score suppliers
8	Supplier negotiation	- Suggest negotiation strategies - Draft tailored letters requesting savings based on up-to-date data - Negotiate with suppliers via emails/platforms with the adapted language and tone (for basic- standard purchases)
9	Supplier onboarding	- Automate document request and collection - Check compliance (ESG- regulatory...)
10	Contract management	- Generate draft contracts (suggesting standard clauses, terms and conditions) - Compare legal terms - Identify inconsistencies - Check the inclusion of certain points, their validity - Manage contractual deadlines - Summarize contracts
11	PO and invoice	- Automate the creation and sending - Reconcile invoices and resolve discrepancies
12	Performance monitoring	- Track KPIs and Compare suppliers - Generate customized reports and analytics dashboards - Suggest improvement plan - Enrich supplier data to improve KYS

B. WHAT USE CASES CAN BE CARRIED OUT BY AI AGENTS IN PROCUREMENT?

Many Procurement projects

- leverage **specialized micro-agents** (e.g., Document Comparison Agent, Web Scraping Agent, Data Extraction Agent, Document Classification Agent etc.).
- chain and coordinate these micro-agents through an **orchestrating AI agent** to manage segments of the procurement process (e.g., sourcing, supplier selection, contract management).

For example, an **RFx generation agent** can orchestrate the sequential creation of RFIs, RFPs, and RFQs. A **bid analysis agent** can coordinate offer analysis, comparison, and formulate recommendations. A **supplier risk analysis agent** can verify supplier compliance, automatically send document requests when records are missing or outdated, and monitor financial health, ESG criteria, and reputational signals. The agent is connected to external databases and Supplier Risk Management (SRM) solutions and can issue alerts, with minimal human intervention.

Some service providers are beginning to offer **category strategy agents**: they analyze expenses, cost structures, panel suppliers, gather external information and identify cost-cutting opportunities.

Given the revolution underway with the use of GenAI and AI agents in Procurement, should we be concerned about the long-term viability of the Procurement profession?

The rise of AI represents an opportunity for procurement professionals

3. GenAI AND AI AGENTS: THREAT OR OPPORTUNITY FOR THE PROCUREMENT PROFESSION?

Here we answer 2 questions:

1. Is the Procurement profession reaching the end of the road?
2. Is the job of “Category buyer” headed for obsolescence?

A. IS THIS THE END OF THE ROAD FOR THE PROCUREMENT PROFESSION?

First and foremost, it's essential to **distinguish between tasks and a profession**. Certain procurement tasks are likely to be automated—or even rendered obsolete—but the profession of **the buyer is expected to evolve rather than disappear**.

The rise of AI should be viewed as an **opportunity for procurement professionals**, particularly as it coincides with a pivotal moment marked by deep organizational transformation and environmental change. We identify four key reasons supporting this view:

1. **A growing number of tasks assigned to buyers**: the automation of routine and repetitive tasks is coming at just the right time; since the Covid crisis, workloads and the diversity and multiplication of tasks have reached record highs. They continue to grow, with CSR compliance, decarbonization, contractual reviews etc. On average, AI users save **57 minutes per day**, with the most advanced users gaining up to **3 hours daily**⁵. Over time, AI users are expected to become **3 to 4 times more productive** than their peers.

⁵ <https://www.odoxa.fr/wp-content/uploads/2025/02/Odoxa-pour-Artefact-IA-au-travail.pdf>



2. The increasing complexity of the Procurement profession Complexity continues to skyrocket for buyers: they have to manage perpetual polycrisis (e.g., climatic and geopolitical), persistent inflation, energy transition, and shortages (water is going to be the topic of the coming decade). They are expected to manage supply dependencies, address the decoupling of the global economy, and reconfigure entire value chains. AI can play a dual role in this context: it offers significant time savings, enabling buyers to concentrate on these highly strategic and complex issues, and it provides analytical and decision-making support—provided, of course, that it is used appropriately and that the user has mastered the necessary competencies.

3. The intensification of knowledge requirements: In the face of increasing complexity and the novelty of emerging issues, access to knowledge conditions the relevance of buyers. Questions such as: How does the Carbon Border Adjustment Mechanism (CBAM) apply in practice? How can one negotiate entry into a consortium? How can one build and deploy an AI agent? — highlight the growing need for advanced and specialized knowledge. GenAI represents an opportunity in this regard, as it democratizes access to knowledge—as long as users are able to assess the credibility, traceability, and quality of the information produced.

The Indian perspective offers an enlightening approach. As Aravind Srinivas, co-founder of Perplexity AI, points out: “We do not see AI—even in its most sophisticated form—as a competitor to human intelligence. Rather, we see it as a tool that can freely transmit knowledge and nourish reflection beyond borders and languages. Like the sutras⁶, it does not replace human thought; it amplifies it.”⁷ This mindset may help explain the exceptionally high adoption rate of AI in India: in a country of nearly 1.5 billion people, 93% of students and 83% of employees report using AI on a daily basis.

4. A decline in available and productive workforce: the aging population in developed countries and the late entry of graduates into the job market, coupled with the “Great Resignation” since the Covid pandemic and “quiet quitting” are the main causes. This challenge is particularly acute in Europe, where labor productivity has increased by only 0.6% since the Covid crisis—compared to 6.0% in the United States over the same period⁸

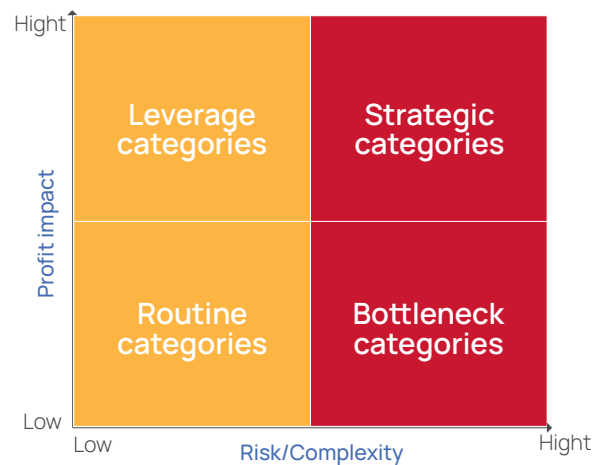
In summary, AI is emerging at a timely moment. Rather than leading to the disappearance of the Procurement profession, it is expected to enhance and enrich it.

However, the question of whether category management as a function is becoming obsolete remains open to debate.

⁶ A sūtra is a short and structured text intended to convey spiritual, philosophical, or practical knowledge.

⁷ <https://www.lesechos.fr/idees-debats/cercle/opinion-vu-de-linde-lia-et-laces-a-la-sagesse-2147659>

⁸ Source : European Central Bank



B. TOWARDS THE END OF “CATEGORY BUYERS”?

With the widespread deployment of AI agents specializing in distinct stages of the Procurement process, some observers foresee the gradual disappearance of traditional category management—especially with the emergence of AI agents dedicated to category strategy.

Two central ideas underpin this perspective:

- › The «commoditization of the commodity manager»—that is, the automation of their role.
- › The delegation of negotiation tasks to AI Procurement agents, which interact directly with supplier-side AI agents, structured by category. In such scenarios, the category manager evolves into a manager of AI agents or an orchestrator of multiple e-marketplaces.

Subject to the progress of AI in organizations and the removal of inherent obstacles (data quality,

entitlement management—i.e., access and usage rights—security etc.) these two ideas could be valid for «routine» and «leverage» Procurement categories, as per Kraljic's purchasing portfolio matrix (above).

These categories typically involve standardized, repetitive purchases in open supplier markets.

In the case of «routine categories» (non-critical class C purchases or «tail spend») with many references and suppliers, the implementation of e-marketplaces and e-procurement solutions is already well underway. In many organizations, the entire «Procure to Pay» process is already automated. Some companies have even begun to automate negotiations for such categories—for example, [Walmart](#). These strategies not only reduce maverick spending (purchases made outside Procurement policy) but also contribute to significant gains in Procurement productivity.

Automating supplier negotiations at Walmart

Walmart cannot conduct targeted negotiations with all of its 100,000 or so suppliers. **For suppliers associated with «routine categories» or «tail spend»**, Walmart has tested the automation of negotiations with AI-based software including a text interface (chatbot): **Pactum**. Discounts, payment terms or contractual conditions are negotiated based on objectives defined by Walmart. After a 3-month pilot project, launched in 2021 at Walmart Canada, involving 89 suppliers and 5 buyers, the solution was then extended to the USA, Chile and South Africa.

From a technological standpoint, **Pactum** was able to conduct simultaneous contractual negotiations with 2,000 suppliers. By 2023, agreements had been signed with 68% of the suppliers approached, generating average savings of 3%.

According to official press releases, 83% of suppliers found the system easy to use and appreciated the opportunity to make counterproposals

For «Leverage categories», where the financial stakes are significantly high but criticality remains limited, competitive bidding is key. In such cases, it is entirely conceivable that procurement processes could be further automated—beyond current practices—through the use of specialized AI agents handling various stages of the procurement cycle and interacting directly with supplier-side AI agents. Nonetheless, human supervision and final validation must remain essential safeguards. For instance, when an AI solution conducts negotiation autonomously, the final contractual commitment must be reviewed and approved by a human buyer. Issues related to accountability and legal responsibility are of paramount importance.

For the «strategic» and «bottleneck» Procurement categories, the end of the «category manager» is a misguided and dangerous idea.

Here are 2 major explanations

1. For these highly critical Procurement categories, only the status of «preferred customer» grants access to supplier innovation and opportunities for co-development. This status helps to mitigate risks in times of tension or shortages, as suppliers tend to prioritize their preferred clients. It is therefore essential for buyers to develop differentiating strategies with these suppliers; they must imagine ways of doing business, of creating value together that distinguish them from other buying companies. They must not be just another average customer, but rather THE CUSTOMER the supplier wishes to work with as a priority, one to whom the supplier is willing to

dedicate resources, whatever its size. This calls for creativity.

The use of GenAI tends to homogenize the ideas developed by employees. A research conducted jointly by Harvard Business School, MIT, the Wharton School, the University of Warwick, and BCG shows that the diversity of ideas produced by participants using GPT-4 for creative tasks was 41% lower than that of participants who did not use it⁹.

2. Complexity is inherent to these procurement categories. In some cases, suppliers may also be clients. In others, securing supply requires developing new suppliers, supporting emerging technologies, and doing so in collaboration with competitors through alliances or the creation of consortia, (e.g., the consortium formed by Nestlé, PepsiCo, Suntory, and L'Oréal to industrialize Carbios' enzymatic plastic recycling technology). In yet other cases, buyers must manage conflicted tripartite relationships in which suppliers are imposed by a customer. In these categories, buyers are expected to be able to solve complex problems, with a strong business orientation.

Interestingly, the research referenced above shows that using GenAI for complex business problem-solving tasks does not improve professional performance—on the contrary. When participants used GenAI for such tasks, their average performance declined by 23% compared to those who completed the tasks without technological assistance.



⁹ Candelon, Kraye, Rajendran, and Zuluaga Martínez (2023) How People Can Create—and Destroy—Value with Generative AI <https://www.bcg.com/publications/2023/how-people-create-and-destroy-value-with-gen-ai>

For these Procurement categories, category management is key: it must be creative, business-oriented and at the heart of differentiating value creation.

AI agents don't intuitively understand strategic or emotional issues as a human would (political arbitrage, cultural finesse, or influence strategies, for example).

Classifying, extracting, comparing, processing data faster than any human is one thing, but inventing concepts and making meaningful associations is quite another. Machines lack critical thinking and abstraction. However, they can serve as valuable assistants for speeding up and facilitating data collection and prior analysis.

The long-term challenge is to combine the computing power of machines with the critical and creative power of human beings - only then will new models of value creation emerge. This is

precisely what is at stake in these highly strategic Procurement categories, and it lies at the core of the new competency framework for procurement professionals.

4. ACHIEVING HUMAN-MACHINE COMPLEMENTARITY IN PROCUREMENT :

The success of AI will depend more on humans (70%) and their competencies, than on the technology itself (Table 1).

Table 1 : Success factors for AI projects in Procurement organizations¹⁰

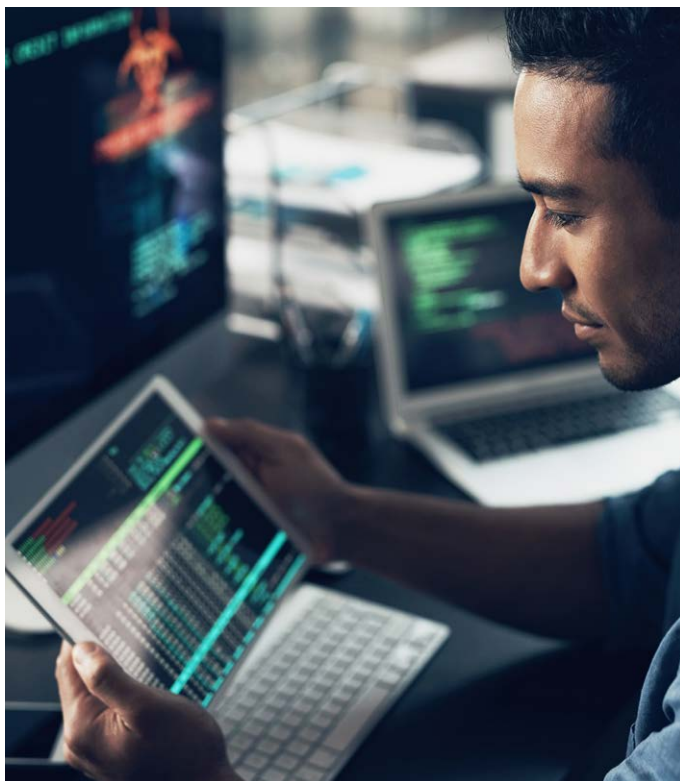
10%	Algorithms: Generative AI models
20%	Technology/ IT: - Data quality and availability - Data platforms - Visualization tools
70%	Humans - Competencies - Motivation, mobilization - Change management - Governance - Change in processes and methods

¹⁰ Executive Perspectives BCG « The Future of Procurement with AI : Maximizing Value Potential in 2025 »

A. WHAT NEW COMPETENCIES ARE REQUIRED IN PROCUREMENT?

A machine doesn't think, it just calculates. If the initial question is wrong, the machine's answer may be correct according to the question asked, but potentially dangerous for the user, as it doesn't correspond to reality. So it's up to the user to **understand how the algorithms work**, and to learn how to ask the right questions.

As AI takes hold in the Procurement function, computational thinking will become a core competency for the 21st century buyer. **Computational thinking** is a structured way of thinking and solving problems as a programmer would¹¹. It's not coding or programming, and it's not just for computer scientists. It's about knowing how to break down a problem into sub-problems that can be solved by a machine, spot regularities (patterns), demonstrate abstract thinking, and design a series of step-by-step instructions (i.e., algorithmic thinking). This approach strengthens the ability to formulate (prompt), analyze,



supervise, and leverage GenAI tools and AI agents in an efficient and responsible way. For example, for a buyer, this means knowing how to describe a Procurement workflow that an AI agent can execute. The buyer will translate business logic into instructions that AI can understand.

AI lacks common sense. Maintaining a **critical mindset** is essential when using it. As with a GPS, overreliance can lead to a loss of one's own sense of direction, and potentially to permanent disorientation.

This critical thinking will be all the sharper if buyers are trained in how to interact with the machine (computational thinking) and if they possess robust **data literacy**—understanding the nature, source, quality, and lifecycle of data—as well as **data analysis** competencies.

In Procurement, machines can now deliver enormous volumes of segmented and correlated data across a wide range of domains: spend analysis, supplier metrics, lead times, and more.

Yet, we observe among student populations (the next generation of buyers) that correlation is often confused with causation, and that while the concept of average is generally understood, that of the median is far less clear.

Furthermore, regular use of GenAI in a professional setting may reduce users' critical reasoning abilities. This is the finding of research conducted by Carnegie Mellon University and Microsoft¹². Frequent reliance on AI-generated responses can lower the cognitive effort invested by users. Instead of fully mobilizing their capacities for reasoning, creativity and analysis, they are often content to validate the apparent relevance of an answer. Over time, this passive use could weaken the mental mechanisms that sustain critical thinking, leading to a form of cognitive numbness. This would reduce our **epistemic vigilance**, i.e., our ability to assess the credibility of information before believing or using it.

¹¹ Wing Jeannette (2006) Computational thinking Communications of the ACM, Volume 49, Issue 3

¹² Lee, Hao-Ping Hank, et al. "The Impact of Generative AI on Critical Thinking: Self-Reported Reductions in Cognitive Effort and Confidence Effects From a Survey of Knowledge Workers." (2025).

In summary, buyers need to master at least 6 core competencies in terms of AI (Table 2).

Table 2 : The 6 key AI competencies for Procurement professionals (proposed de N Tréhan)

Buyers' competencies in relation to AI	Description
1. Algorithmic literacy	- Understand the fundamental principles of AI technologies used in procurement (e.g., GenAI, LLMs, AI agents) - Identify AI blind spots
2. Computational thinking	- Structure effective prompts for GenAI: break down tasks, formulate requests, iterate - Collaborate with AI agents: define objectives, break down workflows into subtasks, supervise execution plans
3. Data literacy	- Understand the nature of data (structured/unstructured), its sources, and its quality - Know how to interpret datasets (data tables, metadata, variables) - Identify data "black holes" (e.g., underrepresented populations, missing or misclassified data)
4. Data analysis	- Interpret AI-generated indicators (e.g., prediction scores, confidence scores) and outputs (e.g., confusion matrices, clusters) - Understand basic statistical concepts (e.g., mean vs. median, correlation vs. causation) - Analyze predictive outcomes
5. Critical thinking and Epistemic vigilance	- Identify cognitive and data biases (e.g., selection bias, confirmation bias, representativeness bias) - Detect incoherent or erroneous outputs (e.g., hallucinations) - Assess the reliability of information (epistemic vigilance): compare, triangulate, contextualize
6. Ethical, legal and accountability literacy	- Know the key legal and regulatory frameworks (e.g., GDPR, AI Act, right to explanation, algorithm audits) - Master ethical AI principles: inclusivity, fairness and privacy, transparency, and explainability, robustness, security and safety, accountability etc. - Understand the social impact of AI (e.g., exclusion, surveillance, polarization) - Understand the environmental impact of AI



B. WHAT IF AI COULD MAKE US MORE HUMAN?

In our view, if we wish to benefit fully from the potential of AI, we must strengthen our human capabilities in order to move toward a meaningful and effective human-machine hybridization.

As the economist [Jean Fourastié](#) put it so eloquently:

«The machine leads man to specialize in the human».

We need to be even better at what makes us different. It's one thing to sort data and photos faster than any human, but it's quite another to demonstrate critical thinking, abstraction, and intuition. All major scientific breakthroughs have stemmed from these human faculties. Galileo and

Einstein, for example, formulated laws and theories that were not directly observable, and with very little data available at the time, by challenging prevailing thinking, using intuition, abstraction and creativity.

Tomorrow's challenge is to combine the computing power of machines with the critical, creative power of human beings.

At the organizational level, gaining a competitive advantage will depend on achieving a high level of collaboration between machines, which excel in computation, and humans, who are deeply capable of critical reasoning, creativity, and social, emotional, relational, collaborative and imaginative competencies—all of which machines fundamentally lack.

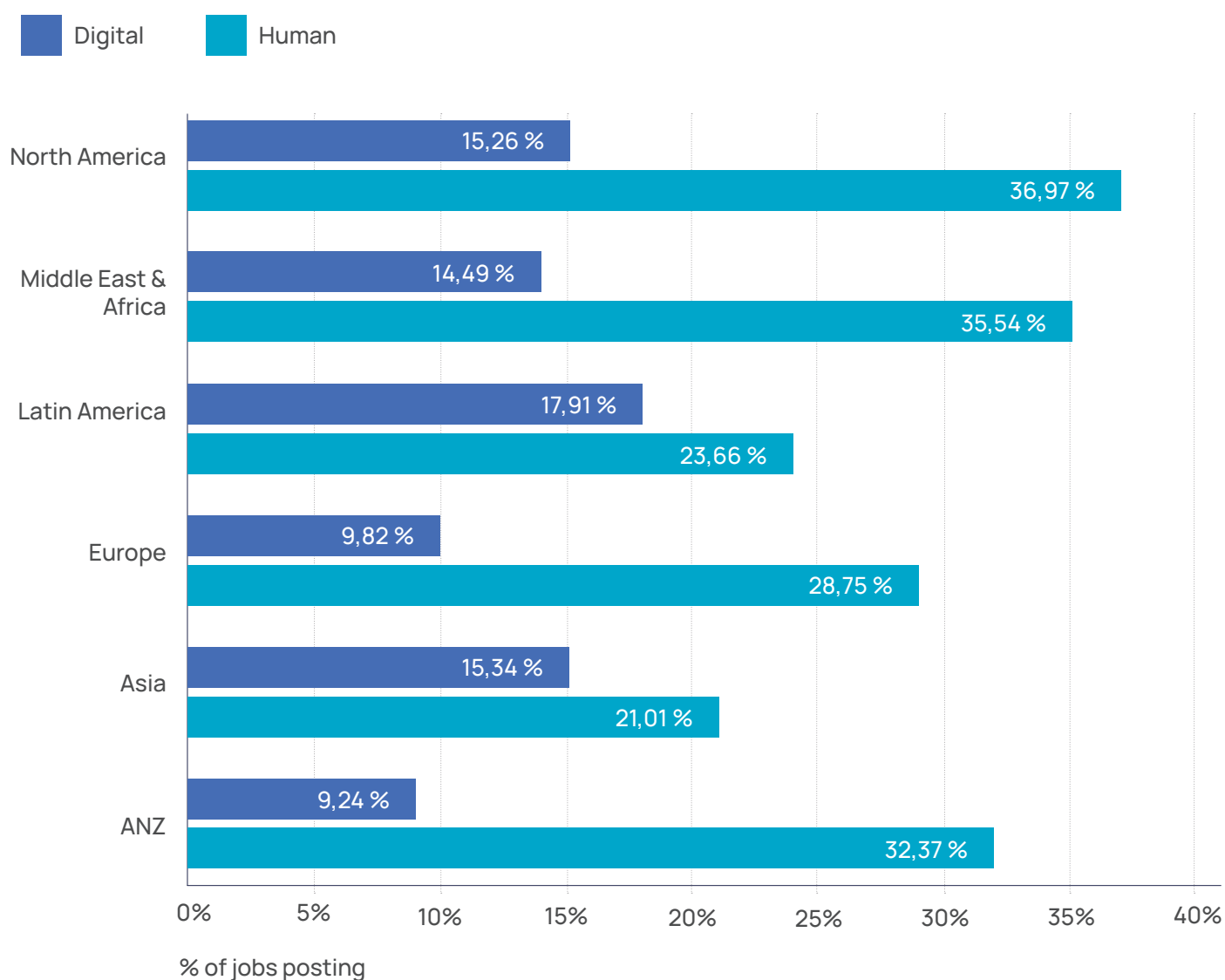
It is precisely from this human-machine complementarity that a new form of value creation will emerge.

Indeed, the demand for human-centered competencies is exploding in the age of AI (Figure 4)¹³. Human competencies are twice as much in demand as technological competencies: they are 2.4 times more in demand in North America, and 2.9 times more in Europe.

The five most sought-after human competencies are leadership, emotional intelligence, creativity, critical thinking and complex problem-solving - all considered vital for fostering collaboration, driving innovation, and leading organizational change.

Figure 4 : Share of demand for human and digital competencies by region –

Source : Global state of the skills economy – Cornerstone - 2024



¹³ <https://www.cornerstoneondemand.com/resources/article/global-state-skills-economy-2024/>



PART 2

THE ERA OF DISCONTINUITY: A RENEWAL OF PROCUREMENT COMPETENCIES

The era of discontinuity means facing polycrisis, disruptions, bifurcations and accelerations. **For companies, two imperatives emerge: first, to survive, and second, to transform in order to thrive in this chaotic world.** The Procurement function must support the company at every stage of this «Business as (un)usual».

In this section, we answer two questions:

- 1. What competencies are required to keep the company ahead of the game?**
- 2. What competencies are needed to transform the business?**

1. WHAT COMPETENCIES ARE REQUIRED TO KEEP THE COMPANY AHEAD OF THE GAME?

A. A. BEYOND RISK MANAGEMENT COMPETENCIES: ORCHESTRATING RESILIENCE

Risk management aims to limit the probability of undesirable events occurring and/or minimize their impact before they materialize.

Just because a buyer has risk management competencies does not mean they know how to manage resilience.

In a world where unpredictable crises (climatic catastrophes, wars, pandemics...) are becoming increasingly frequent, violent and self-amplifying, risk management competencies are no longer sufficient. The challenge is resilience. This is the ability to face a crisis, to continue operating despite disruptions, to adapt, and to recover in the shortest possible time. It also includes the ability to reinvent oneself.

Risk management and resilience management are complementary, but **just because a buyer has risk management competencies doesn't mean they know how to manage resilience.** This is a crucial competency in Procurement - the survival of the company depends on it. Most crises emerge in value chains, spread through them and strike companies with full force.

According to BCG, only 10% of companies have real resilience capabilities¹⁴.

It is therefore essential for buyers to know how to conduct **stress tests** on the value chain. This involves **knowledge of scenario development.** Here, **Systems thinking** is key: a value chain involves thousands of suppliers from tiers 1, 2, 3 and beyond, from all over the planet. A buyer must understand the system as a whole, identify its characteristics, understand the flows and spot the interdependencies. The ultimate aim is to map critical vulnerabilities according to changes in various system parameters (e.g., according to IPCC scenarios). It is also crucial to account for second-order effects.

A buyer will be all the more relevant if they have a strong intelligence of their environment and the **ability to pick up on weak signals.** Their geo-politico-economic intelligence should not be restricted to the company's sector or Procurement category. Day and Schoemaker(2005)¹⁵ underline the importance of «scanning the periphery» to identify subtle clues to future transformations. **The buyer must be a sentinel of change.**

Once the stress tests have been carried out, the potential impacts need to be quantified: estimates of financial losses, increases in Procurement costs, etc. Contingency plans and supply chain reconfigurations must be drawn up.

¹⁴ <https://www.bcg.com/publications/2022/necessity-to-build-operational-resilience-framework>

¹⁵ Day, G. S., & Schoemaker, P. J. (2005). Scanning the periphery. Harvard business review, 83(11), 135.



While buyers already possess these skills in quantification and contingency planning, **knowing how to act in crisis situations** must be one of the new competencies. It's impossible to anticipate everything or control everything. Like "special forces", buyers must train through full-scale crisis simulations. The aim is to develop **their decision-making agility, operational flexibility and capacity for frugal innovation** - i.e., formulating effective responses with limited resources in extreme conditions.

It goes without saying that proficiency in digital tools and data analytics is essential for value chain resilience.

B. MANAGING THE WAR ECONOMY

The world is currently shifting from a «peace economy» to a «war economy», characterized by mistrust, fragmentation of trade and the predominance of power relationships over law and international cooperation. Two empires, China and the United States, are going head to head. But through them, it is a global, systemic battle: an economic and civilizational confrontation encompassing every nation, because all countries are economically, politically and geographically interdependent.

According to Farrell and Newman (2019)¹⁶, **states exploit economic interdependencies** to exert coercion over other countries, controlling critical nodes such as financial systems (e.g., SWIFT), value chains (e.g., semiconductors), access to critical resources (e.g., water, gas, rare earths), technologies (e.g., graphic processors), and by

imposing tariffs and standards. According to Farrell and Newman, these are «**Weaponized Interdependence**» strategies. Real armed conflicts exacerbate these strategies.

Effectively managing the war economy means managing dependencies, as highlighted by Baverez (2024)¹⁷. Dependencies between states have repercussions at company level.

In our opinion, **this management of dependencies will intensify and become a management of shortages** for 2 main reasons:

1. The global energy transition and decarbonization are intensifying certain needs (copper, permanent magnets, lithium, recycled materials such as polyester, etc.) and accelerating supply/demand imbalances.
2. Climate change is accelerating the scarcity of certain resources (water, natural rubber, cocoa, etc.).

Access to rare resources and critical technologies determines survival. The suppliers who control them choose their customers and impose their terms. As our previous work¹⁸ has already highlighted, the buyer must be able to decipher power relationships (Tréhan and Pourrat 2016-2019), identify levers of power and activate new strategies of influence (Tréhan and Falcy 2022). In situations where the supplier is dominant and critical, we need to move beyond traditional supplier relationship management and work on supplier motivation to get them to consider their customer as a preferred customer (Tréhan 2011).

¹⁶ Farrell H., Newman A. AL (2019) Weaponized Interdependence: How Global Economic Networks Shape State Coercion. International Security 44 (1): 42–79.

¹⁷ Baverez D. (2024) Bienvenue en économie de guerre ! Novice

¹⁸ Tréhan, N., & Pourrat, C. (2016). Processus de reprise de contrôle d'un client en situation d'extrême dépendance sur un fournisseur stratégique: le cas Orange-Apple. Comptabilité Contrôle Audit, 22(2), 11-37.

Tréhan, N., & Pourrat, C. (2016). Control recovering process over a strategic supplier by an extremely dependent customer: the Orange-Apple case. Accounting Auditing Control, 22(2), 11-37.

Tréhan, N., & Falcy, S. (2022). Comment devenir un client plus attractif et plus performant grâce à l'évaluation inversée, un mode de contrôle singulier générateur de confiance. Finance contrôle stratégie, (25-2).



C. NAVIGATING COMPLEXITY

In this chaotic world, the ability to navigate complexity is an essential competency for a buyer. Managing complexity means understanding shifting, multi-actor, uncertain and interdependent systems, and **acting effectively without controlling everything**. **Systems thinking** is crucial: it's the art of understanding interconnections, emerging dynamics and feedback loops in complex systems, enabling the buyer to act in a more relevant and sustainable way.

In other words, **any buyer who specializes in a «category», «family» or «project» will only be relevant if they think holistically, beyond their own «category», «family» or «project».**

One challenge lies in the fact that Westerners are mostly trained in Cartesian thinking: breaking down a problem into simpler elements

to solve, sequential and logical processing etc. Computational thinking, the competency needed to interact with AI, is highly Cartesian.

A buyer needs to master both: computational thinking AND systems thinking. It may seem difficult, but don't worry: it can be learned, and just like sport, the more you practice, the more natural and enjoyable it becomes!



2. WHAT COMPETENCIES ARE NEEDED TO TRANSFORM THE BUSINESS?

42% of CEOs worldwide believe that their company will not be viable within 10 years if it continues on its current path¹⁹. Transforming the business to thrive in the future is fundamental.

A. ACTING AS AN “ENTREPRENEURIAL BUYER”

The role of the Procurement function is not only to support the business, but also to contribute to its transformation.

In our new economic paradigm, we can no longer copy and paste from the past. To paraphrase Einstein, we cannot solve our problems with the same thinking we used to create them. Buyers need to develop entrepreneurial competencies. The goal is not to create a company, but to create value for the company. An entrepreneur is not an inventor.

What is an entrepreneur? What are their competencies?

According to the famous economist Schumpeter, an entrepreneur is capable of deploying a broad economic vision, mobilizing his or her energy to shake up the propensity for routine, and conceiving and concretizing new combinations that create innovation.

An entrepreneur sees possibilities where others see problems. They know how to seize opportunities and can turn an idea into an innovation. Entrepreneurs initiate change. In

terms of interpersonal competencies, they know how to influence, mobilize and unite people around a common goal. This is a matter of leadership capability.

In the absence of advanced business acumen, a buyer cannot act as a catalyst for genuine strategic transformation.

They will only be truly effective if they have a deep understanding of their company's current business and its potential future developments. Without this business acumen, they cannot act as a detector of weak signals, or as a technology scout guiding the company's technological renewal. They cannot be a vector of genuine strategic transformation.

This entrepreneurial competence must be deployed at three levels:

- First, the buyer needs to develop entrepreneurial competencies internally with business partners
 - to question their needs, habits and underlying objectives, and open up new horizons.
- Second, the buyer must develop entrepreneurial competencies in the act of buying itself - to question procurement processes, consumption habits, and practices (e.g., is buying our only option?).
- Third, the buyer must develop entrepreneurial competencies externally with suppliers: they must question methods, sourcing tools, sourcing

¹⁹ PwC's 28th Annual Global CEO Survey Reinvention on the edge of tomorrow (2025)

zones, SRM, and performance indicators. Above all, they must explore beyond traditional supplier ecosystems and adopt an entrepreneurial approach within research ecosystems, with competitors, institutions, and associations etc.

At the root of every entrepreneurial approach lies questioning, and therefore a different way of thinking.

B. THINKING IN “DOUBLE-LOOP”

In the new age of Procurement, the buyer must develop «Double-Loop» thinking, as defined by Chris Argyris (1976)²⁰.

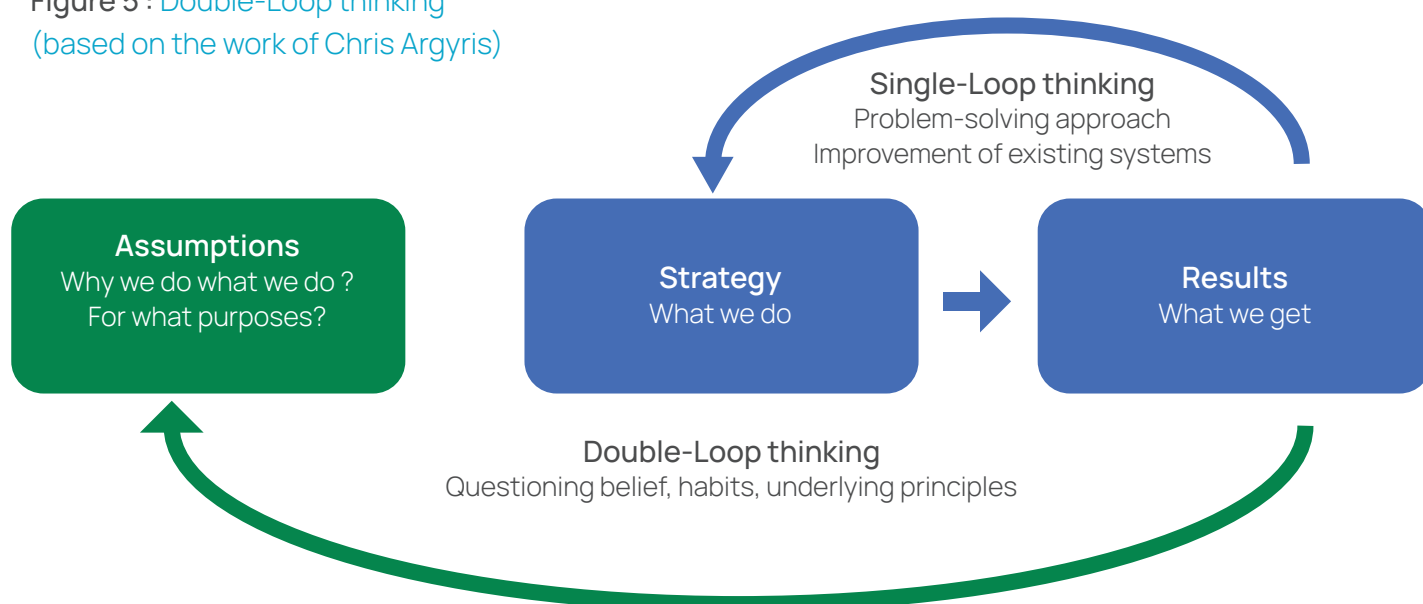
Within organizations, most thinking follows a “Single-Loop” approach: a strategy or action is implemented, a result is obtained, and efforts are made to improve that result. This is an optimization logic, focused on problem-solving without questioning the initial strategy or underlying assumptions. Admittedly, this can be interesting, but in our chaotic world, the challenge

is to question the beliefs, habits, and principles underlying our actions. **We didn't invent the light bulb by improving the candle.**

The buyer must develop Double-Loop thinking.

Why do we do what we do? For what purpose? These are the real questions: they define “Double-Loop” Thinking (Figure 5). This is the sine qua non condition for adopting an entrepreneurial approach and achieving a genuine transformation that creates differentiating value.

Figure 5 : Double-Loop thinking
(based on the work of Chris Argyris)



²⁰ Argyris, C. (1976). Single-loop and double-loop models in research on decision making. Administrative science quarterly, 363-375.

Let's take an example: a purchaser in a hospital buys an MRI scanner. They aim to optimize the TCO - maintenance costs, energy costs, etc. This reflects a focus on optimizing the existing system – “Single-Loop” thinking. What would “Double Loop” thinking look like? Why am I buying an MRI scanner? Why not consider an «Imaging as a Service», pay-per-use system, rather than purchasing and tying up capital?

Another example: Why buy energy to power an industrial process, when there are facilities nearby or within the company that generate waste heat that could be recovered?

Like Leonardo da Vinci, a master of questioning, we need to cultivate the precious art of knowing how to ask questions. We're all born with this natural ability: from age three to five, we're constantly asking «Why?»: «Why is the sky blue?», «Why do we throw things away when they still work?». This ability needs to be nurtured and encouraged, so that we hold onto it. It's not only a powerful driver of creativity and transformation, but also of learning, and understanding the world. Learning to learn is an essential 21st century competency.

C. LEARNING TO LEARN

In a world where the obsolescence of competencies is accelerating, and know-how is rapidly being disrupted, **the ability to acquire new knowledge will be more valuable than knowledge itself.**

According to the global «Talent Trends» study by Randstad Enterprise²¹, the ability to learn is among the top three recruitment criteria for very young and senior talent.

For a buyer, these questioning and learning competencies are indicators of great curiosity and humility – qualities that are especially important when working with internal business partners.



Satya Nadella
CEO Microsoft

Source: «Hit Refresh: The Quest to Rediscover Microsoft's Soul and Imagine a Better Future for Everyone

We need to be insatiable in our desire to learn

Contributing to business transformation requires this learning dynamic. This is precisely what Satya Nadella, CEO of Microsoft, explains in his book «Hit Refresh», in which he recounts his effort to transform Microsoft.

For him, insatiability in the desire to learn is not only an individual quality, but a collective imperative in a rapidly changing world. It's no longer enough to be competent in a field: we need to cultivate an attitude of intellectual humility, active curiosity and constant self-questioning. Nadella emphasizes the shift from a «know-it-all» culture to a «learn-it-all» culture.

In summary, the table 3 presents an overview of the 6 key competencies for buyers in the era of discontinuity (table 3).

²¹ <https://interactive.randstadenterprise.com/2025-talent-trends-gt>

Table 3 : 6 key competencies in the age of discontinuity (proposed by N. Tréhan)

Buyers' Competencies in the Era of Discontinuity	Description
1. Orchestrating resilience	- Build scenarios - Conduct stress tests - Demonstrate acute sensing of weak signals - Operate effectively in crisis situations - Develop decision-making agility
2. Managing the economy of war and scarcity	- Deploy a long-term, forward-looking vision - Decode power and dependency dynamics - Identify levers of power and influence with suppliers - Know how to motivate critical suppliers, to become a "preferred customer"
3. Navigating complexity	- Develop systemic analysis (understanding interactions, interdependencies, feedback loops etc.) - Apply critical thinking (questioning, prioritizing, detecting cognitive biases) - Be able to decide and act without controlling everything
4. Being an entrepreneurial buyer	- Develop business acumen - Master ambidexterity: the ability to explore and exploit opportunities - Mobilize internal and external energies - Initiate change
5. Double-loop thinking	- Deploy a questioning dynamic - Stimulate creativity - Shake up routines and assumptions
6. Learning to learn	- Cultivate curiosity - Exercise ability to acquire knowledge

PART 3

SUSTAINABILITY TRANSITION: A TRANSITION OF PROCUREMENT COMPETENCIES



75% of Chief Procurement Officers worldwide plan to implement sustainable Procurement practices to generate long-term value for their companies.²² Decarbonization is the number one priority for 84% of them. Biodiversity is a fast-growing concern. Social issues come in third place. **In our view, the global environmental transition cannot take place without a social transition**, as the success of climate policies depends on their social acceptability and their ability to create new sustainable economic equilibria.

In this section, we answer two questions

- 1. What competencies are needed to understand and initiate the transition?**
- 2. What competencies are needed to speed up the transition?**

1. 1. WHAT COMPETENCIES ARE NEEDED TO UNDERSTAND AND INITIATE THE TRANSITION?

Mastering specialized technical knowledge is a prerequisite for understanding the transition. It involves first acquiring knowledge, then mastering tools and methodologies. Secondly, the hybridization of specialized knowledge is the key to effectively initiating the transition.

A. MASTERING SPECIALIZED TECHNICAL KNOWLEDGE

- Procurement is on the front line of many environmental issues (Tréhan 2022)²³. Supplier-related **CO₂ emissions** (upstream Scope 3) account for between 60% and 90% of a company's carbon footprint, depending on the sector. Procurement plays a critical role in measuring and reducing upstream Scope 3 emissions. It is therefore essential to master knowledge related to CO₂ emission measurement (and its limitations), product life-

cycle analyses and associated software tools, as well as emission reduction levers – including their cost and impact (e.g., through marginal abatement cost curves).

Knowledge related to **energy** is among the most sought-after²⁴ – not only to enable measurement and action at the supplier level (by encouraging them to adopt renewable energy, self-production, etc.), but also to address Scope 2 emissions (indirect emissions from purchased energy) through Power Purchase Agreements (PPAs), purchases of «Energy Management Systems», and generation or storage solutions.

In our view, knowledge of the digital carbon footprint will become critical for buyers. Data center energy consumption is expected to more than double by 2030 (source: IEA). If current policies remain unchanged, the digital sector could account for 15% of global emissions by 2035 (source: The Shift Project). Moreover, an exchange of around twenty questions with ChatGPT requires the equivalent of half a liter of water²⁵. **Digital technologies are both an environmental problem and a solution to environmental challenges**: that's the complexity of and the duality of the modern business age. It's why the knowledge needed to buy and consume low-impact digital technologies will be key.

Beyond the carbon footprint, knowledge of **the environmental footprint** is essential. Some sectors are more advanced than others on this subject, in particular buyers in the building and construction or electrical and electronic products sectors, due to regulations such as the obligation to provide «Environmental Product Declaration» in Europe and in some American states.

²² EY Global CPO Survey : 2025 Insights

²³ Tréhan (2022) The race for carbon neutrality: Procurement on the front line- Understanding decarbonization to make the right moves <https://info.ivalua.com/decarbonization-english>

²⁴ World Economic Forum « Futur of Jobs » 2025

²⁵ Li, P., Yang, J., Islam, M. A., & Ren, S. (2023). Making ai less thirsty <https://arxiv.org/pdf/2304.03271>

As far as the environmental footprint is concerned, **water and biodiversity are, in our view, the two crucial subjects Procurement needs to master** (how to measure, reduce, preserve, restore etc.). Even before aiming to create value, in this domain Procurement must act as a risk manager for the company. The potential losses are enormous: water scarcity is increasing, and the collapse of biodiversity is leading to declines in agricultural yields and future shortages in resources such as fish stocks, natural rubber, cocoa, coffee, and patchouli.

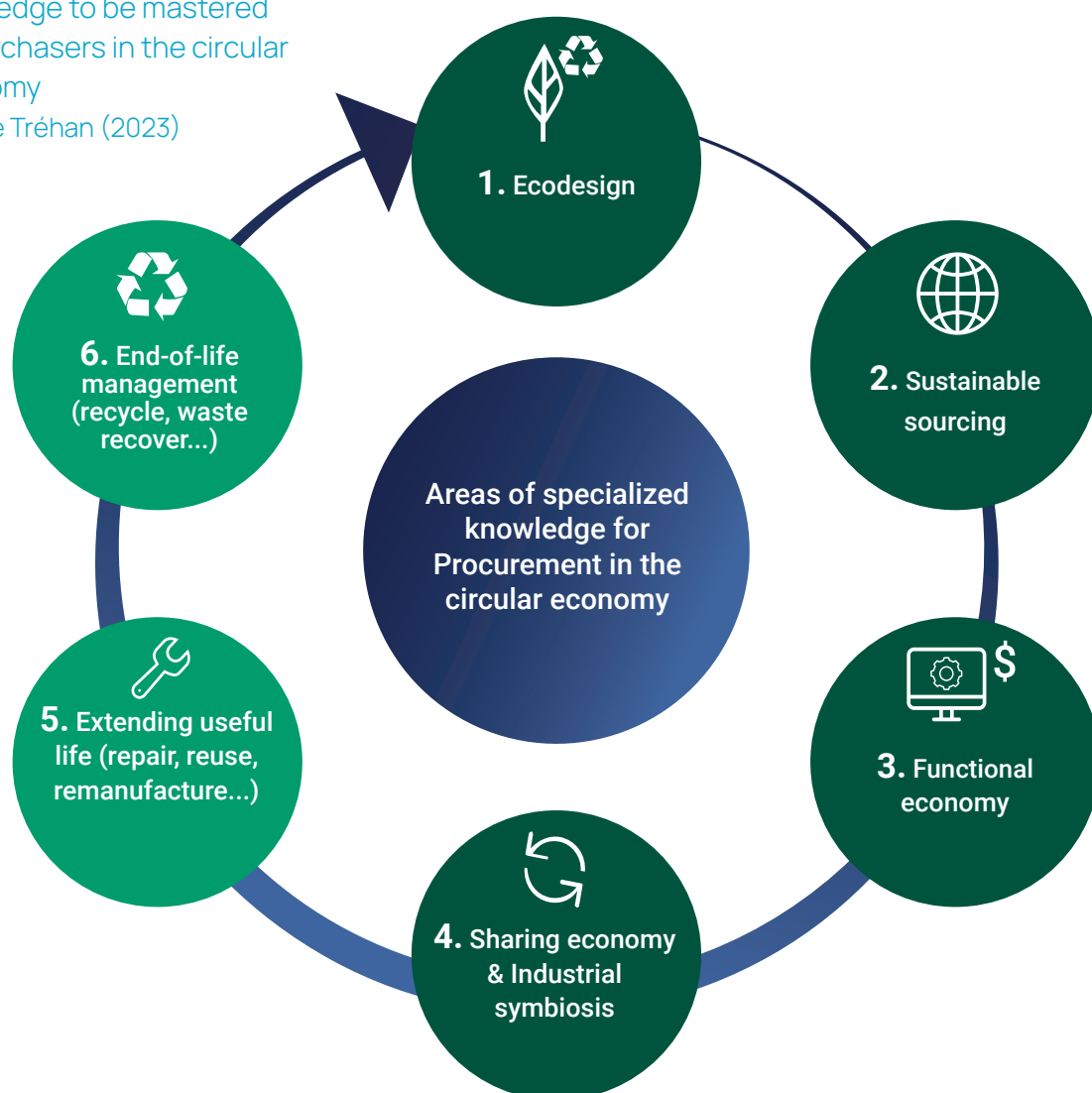
Plastics pollution must also be included among the specialized areas of knowledge. Beyond its massive environmental impact, companies face an annual financial risk of 100 billion USD if governments require them to cover the costs

of plastic waste management²⁶. The CSRD (Corporate Sustainability Reporting Directive) explicitly addresses microplastics, which are also monitored by the CDP.

In response to these challenges, buyers must have solid knowledge of the **circular economy** (Tréhan 2023)²⁷ particularly across six dimensions where they can, in our view, exert influence – not limited to the traditional 3Rs of Reduce, Reuse, and Recycle (Figure 6).

- › 55% of global GDP depends on a high-functioning biodiversity (source : Swiss Re)
- › 60% of global GDP is linked to the economic value of water use (source : WWF)

Figure 6 : The 6 dimensions of specialized knowledge to be mastered by purchasers in the circular economy
Source Tréhan (2023)



²⁶ <https://www.cdp.net/en/plastics>

²⁷ Tréhan (2023) Circular Economy: Opening New Routes with Procurement - <https://info.ivalua.com/natacha-trehan-circular-economy-research-en>

Worldwide, demand for environmental competencies increased by 76% in 2024²⁸ and continues to grow. According to the World Economic Forum, «green competencies» are a differentiating asset for those who master them.

- › Procurement teams also need to master specialized knowledge in the social domain. This includes specific knowledge of suppliers' working conditions (health and safety, working hours, precarious work, etc.), equal opportunities (absence of discrimination, equal pay, etc.), the inclusive economy (local SMEs, social and solidarity economy suppliers, minority-owned businesses, etc.) and labor rights (trade union rights, child labor, forced labor, etc.).

Among all the areas of knowledge to be mastered, we believe that expertise related to living wages (as distinct from minimum wages) will become increasingly critical. India has launched an ambitious initiative to shift from a minimum wage system to a living wage framework for its population. Some Procurement Departments are further ahead than others: L'Oréal and Unilever, for example, are implementing living wage policies with their main suppliers worldwide.

- › In both environmental and social domains, legislation and regulations largely shape the specific competencies that Procurement must master. Accordingly, knowledge of these frameworks is critical. Many of the world's regulations share a common base and require the same essential and complex competency: the ability to map value chains and trace flows. In Europe, we have the Deforestation Regulation (EUDR), the introduction of the Digital Product Passport, the Corporate Sustainability Due Diligence Directive (CS3D), and the Corporate Sustainability Reporting Directive (CSRD). The United States has the Uyghur Forced Labor Prevention Act, and the UK, the Modern Slavery Act. It's not mastery of a single type of knowledge that's required; it's a combination of specialized knowledge, in terms of content, tools and methodologies. Hybridization of specialized knowledge is the key.

Hybridization is in itself a competency to master.

B. HYBRIDIZING SPECIALIZED KNOWLEDGE

We are witnessing a fragmentation of knowledge and expertise, driven by hyperspecialization, in response to increasingly specific and contextual needs. In a rapidly changing world, the hybridization of knowledge has become indispensable for buyers engaged in corporate social responsibility (CSR) initiatives. Hybridization is in itself a competency to master. It refers to the ability to mobilize, combine and articulate knowledge from different disciplinary or professional domains, in order to respond to complex issues requiring a systemic approach. For buyers, it's no longer simply a question of mobilizing the traditional technical, economic and legal knowledge of their profession, but of being able to combine it with other knowledge. While the sheer volume of knowledge to be mobilized could seem daunting, it's reassuring to know there's help at hand: GenAI is a powerful support tool.



²⁸ Annual trends: Global state of the skills economy 2024 Cornerstone

Here, we would like to highlight a hybridization of knowledge which, in our view, lies at the heart of the future of Procurement. This is the ability to combine social and environmental knowledge with financial knowledge. **This is a key expectation of General Management:** they must demonstrate to investors, shareholders and all stakeholders that they are able to measure environmental and/or social risks in financial terms, throughout their value chain, and that they have quantified and implemented plans to preserve their competitive edge and guarantee their resilience. These are the core requirements of the new sustainability reporting standards – such as the international IFRS S1 and S2 or the European CSRD. In concrete terms, Procurement must be able to integrate the price of carbon into their total cost models and, beyond carbon, be able to **quantify the main negative externalities**²⁹ and base their decision-making criteria on these quantifications.

financing needs to combat climate change are estimated at USD 8 to 9 trillion through 2030, and over USD 10 trillion between 2031 and 2050³¹ (i.e. 7-9% of global GDP).³²

How can we solve this triple constraint:

Urgency + Innovation needs + Significant costs = ?

In our view, there's only one answer = **Cooperate!** Procurement has a critical role to play in enabling such cooperation, which will take on increasingly unconventional and complex forms.

In this context, **behavioral competencies are essential to accelerate the transition.** They include the ability to: (A) orchestrate complex ecosystems, (B) catalyze collective intelligence and (C) tame ambiguity.

The ability to combine social and environmental knowledge with financial knowledge is a top expectation of General Management

2. WHAT COMPETENCIES ARE NEEDED TO SPEED UP THE TRANSITION?

We're in a race against time: six of the nine planetary boundaries had already been crossed by 2022. Without a drastic reduction in CO₂ emissions, the 1.5°C global warming threshold will be reached as early as 2030. On the current trajectory, global temperatures could rise by 3.2°C by 2100.³⁰

According to the International Energy Agency, 46% of the technologies required to achieve carbon neutrality by 2050 are under development. Annual

A. ORCHESTRATING ECOSYSTEMS

To accelerate the environmental and social transition, buyers will increasingly be building and leading internal and external ecosystems, with private and public players, and reconciling sometimes divergent interests.

We observe this trend in 5 types of ecosystems

1. Fair and inclusive value-chain ecosystems: How can we accelerate social impact in global value chains? Buying companies can work together in coalitions or alliances to implement social standards and share best practices, with the help of NGOs. Examples include the «Ethical Trading Initiative», which brings together buyers, suppliers, trade unions and NGOs to advance human rights, and the «Business Commission to Tackle Inequality», with which Unilever works to promote decent wages.

²⁹ In economics, a negative externality is an indirect effect generated by an activity without this effect being reflected in a market price (e.g. soil pollution). However, it represents a risk of potential future costs for the company (fines, stranded assets, loss of investors, SC disruptions...).

³⁰ AR6 Synthesis Report: Climate Change 2023 IPCC <https://www.ipcc.ch/report/ar6/syr/>

³¹ <https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023>

³² It's worth noting that inaction costs the community far more! According to the National Bureau of Economic Research, a 1°C rise in global temperature would lead to a 12% reduction in global GDP over 6 years.

2. Knowledge-sharing ecosystems: How do we facilitate and accelerate the decarbonization of a value chain? By joining forces with other buyers who share the same suppliers, to agree on calculations for the Product Carbon Footprint, share tools, help each other meet regulatory requirements, pool audits etc. This is what buyers in the chemical industry are doing with «Together for Sustainability» (TfS) and in the pharmaceutical industry with the «Pharmaceutical Supply Chain Initiative» (PSCI). And it's less expensive than going it alone!

3. Innovation ecosystems: How can we find decarbonization solutions for the most carbon-intensive sectors, finance them and accelerate their impact? By engaging multiple buyers to commit to purchase volumes that will create a demand signal and foster the development of emerging technologies. This is what buyers are doing with suppliers and institutions within the «First Movers Coalition».

4. Territorial ecosystems or symbioses: How can we promote the circular economy and generate savings? By creating territorial symbiosis with other companies, where waste and co-products from one company become resources for others (heat recovery, for example), where assets are no longer purchased individually but in lots and

pooled, and where infrastructure is shared. This is what several companies have orchestrated within the Kalundborg symbiosis in Denmark and the Dunkirk symbiosis in France.

The buyer is an ecosystem facilitator

5. Internal ecosystems: How can we make a success of an environmental and social transition project? By federating and mobilizing the relevant internal stakeholders within a community of sharing and exchange. This internal ecosystem will enable the project to be co-constructed. Its success depends on the buyer's ability to animate and connect internal and external ecosystems, and to articulate their heterogeneous or even contradictory expectations.

In our view, **the buyer is an ecosystem facilitator**.³³ They must develop ecosystemic competencies. This is the ability to navigate with intelligence, responsibility and agility in multi-actor, multi-dimensional and interdependent environments. They must be able to create a common narrative or shared vision. Their ability to catalyze collective intelligence is a prerequisite for project success.

³³ Tréhan (2023) Procurement function: a new name is urgently needed. <https://www.decision-achats.fr/Thematique/strategie-achats-1236/Breves/Fonction-Achat-II-est-temps-de-changer-de-denomination--386570.html>



B. CATALYZING INTELLIGENCE

Catalyzing collective intelligence means listening, structuring, stimulating and aligning diverse energies **in service of a common creation, greater than the sum of its parts.**

Deux points spécifiques sont à souligner.

- Firstly, for buyers, one of the greatest difficulties in catalyzing collective intelligence is that they must perpetually manage conflicting injunctions: «Develop local sourcing... while leveraging global economies of scale», «Accelerate lead times... while respecting the rigorous sourcing process»...

Mastery of group dynamics is therefore essential, as internal players (R&D, Finance, Production, Marketing, etc.) and external ones (suppliers, NGOs, competitors, distributors, etc.) often have heterogeneous or even antagonistic interests. They must be able to identify power plays and interdependencies between players, and quickly detect the driving forces behind them. Understanding leadership dynamics, conformity, silence, or conflict within a collective is critical.

- Secondly, ecosystems involve a wide variety of stakeholders. To catalyze their collective intelligence, buyers must be **able to establish shared forms of governance** (distributed or participative). Moreover, as these stakeholders increasingly work in hybrid and asynchronous modes, buyers must also demonstrate an affinity for digital technologies that facilitate co-construction: co-ideation platforms, collaborative whiteboards, stakeholder mapping tools, discussion forums, group chats, hackathons etc.

Finally, as some of these ecosystems are eminently complex, they will have to tame ambiguity.



C. TAMING AMBIGUITY

Ambiguity, in an increasing number of ecosystems, stems from two relatively new parameters for Procurement: (1) **coopetition** and (2) **polymorphous suppliers**.

1. Cooperation is a response to the triple constraint of «Urgency + Need for innovation + Significant costs», but to achieve truly effective solutions, this cooperation usually involves integrating competitors. It thus becomes coopetition, the alliance of cooperation and competition. Beyond the challenges of environmental and social transition, **we are convinced that coopetition will become increasingly common to secure value chains, influence dominant suppliers, industrialize emerging technologies, develop new suppliers etc.** (Tréhan & Pourrat 2019)³⁴.
2. We define a «**polymorphous supplier**» as a supplier that simultaneously assumes multiple roles or adopts different statuses over the course of its development (Tréhan 2016).³⁵ **Concretely, this means a supplier who can be a customer, a competitor or a partner all at the same time. Once again, these situations are set to become increasingly frequent.**

On the one hand, the circular economy favors the emergence of polymorphous suppliers. For example, **Saarstahl Ascoval** is the main supplier of sustainable rails to **SNCF** (produced from 100% recycled steel), but it is also SNCF's primary client for used rails, purchasing one-third of the rails removed each year.

On the other hand, data-driven strategies are reshaping corporate boundaries and giving rise to polymorphous suppliers. For instance, **Vodafone**, a telecom operator, is a partner supplier to banks; yet by developing M-Pesa—a mobile phone-based system for microfinance and money transfer—it has become a competitor to some of those same banks.



As a result, buyers will increasingly have to tame ambiguity in their relationships with polymorphous suppliers, in alliances with competitors and in a world that is itself eminently ambiguous. This is no easy task for Westerners nourished by Cartesianism (where $1+1=2$) and Judeo-Christian thought (where good is opposed to evil). In contrast, **Taoism offers valuable insights**, as it welcomes paradoxes and complementary opposites. Buyers must develop great plasticity and an emotional capacity to «be at ease with discomfort and uncertainty».

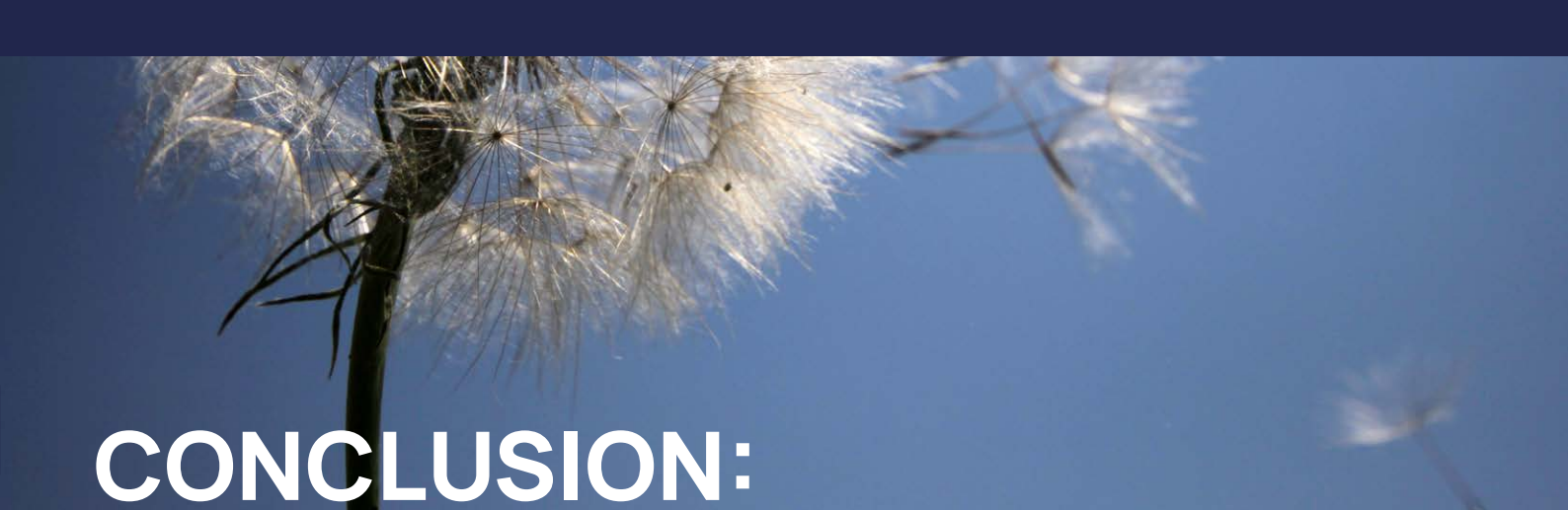
To sum up, here is a table summarizing the key competencies of buyers in the era of environmental and social transitions (Table 4).

³⁴ Tréhan, N., & Pourrat, C. (2019). Exploring the Influence of Power in the Dynamics of Customer-Supplier Coopetition in the Case of Supplier Dominance. *Management international*, 23, 27-41.

³⁵ Tréhan, N., & Pourrat, C. (2016). Processus de reprise de contrôle d'un client en situation d'extrême dépendance sur un fournisseur stratégique: le cas Orange-Apple. *Comptabilité Contrôle Audit*, 22(2)

Table 4 : The five key competencies in the era of environmental and social transitions
(proposed by N. Tréhan)

Buyer competencies in the era of sustainability transitions	Description
1. Developing specialized technical competencies	- Master carbon footprint and environmental footprint - Understand the circular economy and its levers - Map and trace a value chain - Know key regulations and reference laws - Acquire specific social knowledge (working conditions, equal opportunity, inclusive economy, labor rights, living wages...)
2. Hybridizing specialized knowledge	- Apply transversal thinking - Demonstrate cognitive curiosity - Creatively articulate heterogeneous knowledge - Integrate carbon pricing into total cost of ownership (TCO) - Quantify negative externalities
3. Building and maintaining ecosystems	- Unite stakeholders - Initiate and develop network-based connections - Manage with agility
4. Catalyzing collective intelligence	- Practice active listening - Identify group dynamics (power plays, momentum effects...) - Establish and sustain a climate of trust - Orchestrate collaboration (governance models, digital literacy...)
5. Taming ambiguity	- Develop cognitive, emotional and behavioral plasticity - Deploy emotional stability in the face of uncertainty and uncomfortable situations - Demonstrate your ability to discern



CONCLUSION: MASTERING SO MANY COMPETENCIES?

› Does a buyer need to master all 17 competencies?

No! All competencies are contextual: They have value in a given context, to resolve a specific professional situation. Depending on the company's strategy, its sector, the buyer's position, and the category managed, certain competencies should be prioritized over others.

› Should they master them immediately?

Again, the answer is no. Competence is not an inventory: It's a capacity in motion, to be sustained. What matters is not immediate mastery but the ability to continuously evolve. A buyer's strength lies in being a professional in constant development, able to mobilize, strengthen, adapt, and grow competencies in response to emerging challenges.

› Must they master them perfectly?

The answer remains no. All competencies are developmental: They grow over time through experience (as individuals mature) and experimentation. It is a dynamic process of learning and adjustment. Fear of imperfection hinders creativity, innovation and experimentation. Mistakes are an inherent part of the learning journey.

› To be a good buyer, must they master Procurement competencies?

Admittedly, mastery of competencies is a prerequisite for performance, but [enthusiasm for the job and passion in practice are also significant factors in performance](#). The news is good: the job of buyer - which is undergoing a complete revival - is becoming more and more exciting and rewarding.

In conclusion, let us recall the words of Franklin D. Roosevelt :

«The only thing we have to fear is fear itself.»





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