



Automation and Artificial Intelligence in Public Procurement - Between Vision and Reality

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Introduction - The Strategic Importance of Public Procurement in the Modern Era

Public procurement is one of the most powerful levers of influence on both the economy and society. In every country worldwide, it accounts for enormous annual budgets - often 15–20% of national GDP - dedicated to acquiring goods and services for government institutions, healthcare systems, education, defense, and infrastructure. Its impact goes far beyond logistics: procurement decisions shape innovation, employment, competitiveness, and, above all, the trust between citizens and government.

Procurement decisions are never just about comparing prices. They affect the competitiveness of SMEs, influence foreign investment, drive innovation within the national economy, and determine whether a country can achieve its strategic goals - from national security to environmental and social sustainability (ESG). In recent years, public procurement has shifted from a bureaucratic necessity to a **strategic instrument for policy-making**.

Yet over the past decade, public procurement has come under unprecedented pressure:

- **There is a growing demand for transparency and accountability** from citizens, the media, and oversight bodies.
- **Heavy regulation** that slows down processes and requires strict compliance with rigid standards.
- **Commitments to ESG goals** - reducing emissions, encouraging diversity and inclusion, and promoting the circular economy.
- **Constant budgetary pressure** - governments must reduce costs against the backdrop of persistent deficits.

At the same time, the global environment has grown more complex. We have moved from an open, globalized system to a multipolar world where protectionism, trade restrictions, and “buy-local” policies are becoming increasingly common.

These trends limit access to external markets and force public procurement bodies to navigate a less stable, more fragmented reality.

Within this context, automation and artificial intelligence (AI) are emerging as transformative forces.

These technologies are not just “nice-to-have” tools but catalysts for fundamental change: converting slow, bureaucratic processes into intelligent, transparent, and efficient systems; enabling real-time risk detection; promoting innovation; and embedding values of sustainability, professionalism, and public trust at the heart of procurement.

The key question is no longer whether AI should be introduced into public procurement, but how it should be deployed responsibly - to strengthen the public interest, guarantee accountability, and unlock the vast potential within governmental and international systems.

The Strategic Advantages of Automation and AI Transparency and Real-Time Oversight

Transparency is at the core of any public system, but in procurement it is absolutely critical.

Complex tenders, lengthy paperwork, and poor documentation have long created fertile ground for inefficiency and suspicion. AI-driven systems are changing the rules:

- **Continuous monitoring:** Every stage - from bid submission to contract signing - can be tracked and analyzed in real time.
- **Intelligent alerts:** Algorithms detect anomalies, such as unrealistically low bids that may indicate unreliable suppliers, or repeated delivery delays.
- **Public accessibility:** Open data allows citizens, journalists, and civil society organizations to monitor processes and ensure equal treatment.

The result is stronger oversight, increased public trust, and a practical management tool that enables decision-makers to respond immediately rather than retrospectively.

Operational Efficiency and Cost Savings

Public procurement processes are traditionally cumbersome, characterized by eligibility committees, manual checks, and lengthy legal procedures. Automation changes this equation:

- **Automated bid intake** - AI can scan documents and perform an initial review without human involvement.
- **Eligibility filtering** - the system instantly identifies which bidders meet mandatory requirements.
- **Dynamic reporting** - instead of manual spreadsheets, dashboards update in real time.

The outcome is significantly shorter timelines and millions saved in overhead. More importantly, professionals are freed from routine administrative work and can focus on strategic activities: supplier management, market forecasting, and the development of innovative procurement strategies.

Data-Driven Risk Management

In today's interconnected supply chains, risk management is not optional – it is essential.

- **Integrating diverse data sources:** AI can combine financial statements, global news, logistics data, and economic indicators to identify emerging risks.
- **Early forecasts:** Supplier bankruptcies, war-related supply disruptions, or unusual price fluctuations can be flagged before they occur.
- **Rapid response:** Procurement teams can activate contingency plans, diversify suppliers, and prepare in advance, rather than reacting to crises after the fact.

This marks a shift from reactive procurement to proactive procurement – enhancing resilience not only in economic terms but also in matters of national security.

Driving Innovation and Sustainability

AI's strength lies not only in analyzing cost and quality, but also in integrating broader values such as carbon footprint, ESG compliance, and social contribution.

- **Sustainability:** Smart systems can directly incorporate carbon emissions or social impact into supplier evaluations.
- **Innovation:** Vendors are encouraged to offer more than the cheapest product – from green solutions to digital services.
- **Circular economy:** AI-enabled procurement policies can prioritize suppliers who recycle materials or reduce waste.

Thus, public procurement becomes a driver of innovation and sustainability, rather than a mere channel for financial transactions.

Key Challenges and Barriers

Data Quality and Reliability

AI is only as strong as the data it relies upon. Incomplete, outdated, or biased data can lead to misleading outcomes.

Governments must therefore invest in building clean, standardized, and reliable data infrastructures.

Cybersecurity Risks

Digital procurement platforms are prime targets for cyberattacks.

A single breach could expose sensitive documents and derail entire tenders.

Robust cybersecurity policies, advanced encryption, and compliance with international standards are non-negotiable.

Skills and Cultural Gaps

Public procurement professionals are often trained primarily in legal and procedural aspects.

Adopting AI requires new competencies: data analysis, algorithmic literacy, and the ability to interpret intelligent dashboards.

This demands cultural change, new training programs, and even the creation of hybrid roles such as “Data Procurement Officers.”

Ethics and Accountability

Who is responsible for a decision made by an algorithm?

How can stakeholders appeal a “machine’s decision”?

Systems must include explainability features (Explainable AI) and governments need clear regulatory frameworks that define accountability, transparency, and citizens’ rights.

International Case Studies

European Union

The EU is leading broad initiatives to digitalize public procurement.

In many member states, data-driven platforms are already mandatory, with AI applied to bid analysis, supplier performance tracking, and measurement against sustainability targets.

Asia – China and South Korea

In China, integrating AI into procurement is considered a matter of national security. Systems monitor supply chains and flag vulnerabilities as part of an “economic security” strategy.

In South Korea, AI tools predict healthcare demand, reduce shortages of essential medicines, and improve the availability of medical equipment.

Israel

Israel's defense sector and leading industries have already embedded AI in inventory management, failure prediction, and early detection of logistics bottlenecks.

These proven use cases can serve as models for civilian sectors such as healthcare, education, and infrastructure.

Personal Case Study

A Success Story from the Field

In a project I led with a major Israeli defense company, we faced the critical challenge of inventory management.

Delays in delivery and uncertainty in supply created real risks for advanced technology development.

The solution was an **AI-driven demand forecasting and inventory management model**:

- Integrating historical data with global market forecasts.
- Real-time analysis of supplier behavior and reliability.
- Simulating alternative scenarios in the event of supply disruptions.

The results were dramatic:

- Spare parts availability increased by **35%**.
- Inventory costs dropped by **millions of shekels**.
- The procurement department was repositioned from a “support function” to a **strategic partner** within senior management.

This project demonstrated that AI in procurement is not a distant vision but a **practical, present-day solution** - capable of delivering tangible results even in complex, high-risk environments.

Practical Recommendations for Implementation

1. **Establish a modern regulatory framework** - with clear boundaries for AI use, mandatory transparency, and mechanisms for appeals.
2. **Adopt a phased approach** - begin with focused pilots (e.g., supplier evaluation, demand forecasting), measure results, then scale.
3. **Invest in human capital** - develop training, certification, and career pathways for procurement professionals in data and AI.
4. **Foster international collaboration** - build common standards, especially through IFPSM, to ensure alignment and transparency across borders.
5. **Create regional “control offices”** - an EU-level model to ensure standardized measurement, oversight, and knowledge sharing.

Conclusion

Balancing Technology with Public Responsibility

Automation and AI are not substitutes for human judgment – they are force multipliers. They enable procurement professionals to focus on leadership, strategy, and innovation rather than being trapped in daily bureaucracy.

Yet challenges remain skills gaps, cybersecurity threats, and ethical dilemmas. To realize the potential, **bold leadership is required** – leadership that recognizes procurement not merely as a technical function but as a **strategic instrument for shaping economies, societies, and nations**.

My own experience in Israel's defense industry, combined with international developments, shows that the right blend of technology, regulation, and human expertise can transform public procurement from a slow, bureaucratic mechanism into a **national strategy for transparency, innovation, and resilience**.

