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USE OF NEW AND INNOVATIVE TECHNOLOGIES FOR PUBLIC PROCUREMENT

Dr. Rajesh Shakya, Senior Procurement Specialist, World Bank

Knut Leipold, Lead Procurement Specialist, World Bank

Disruptive Technology Hype

Cybersecurity Solutions

Big Data Analytics

Digital Twins

Cloud Computing

Chatbots and Virtual Assistants

Augmented Reality (AR)/Virtual Reality (VR)

Smart Contracts

Robotic Process Automation (RPA)

Internet of Things (IoT)

Blockchain

E-Procurement Systems

Artificial Intelligence (AI)

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Potential Benefits (1)

E-Procurement Systems

Modern e-procurement platforms streamline the procurement process by automating and digitizing various stages, from tendering to contract management. These systems improve transparency and efficiency, reducing the time and cost associated with procurement activities.

Examples of e-procurement initiatives and platforms in various African countries:

- **South Africa, Nigeria, Kenya, Ghana, Tanzania, Uganda, Rwanda, Zambia, Botswana, Namibia**

Blockchain

Blockchain technology enhances transparency and security in procurement by creating immutable records of transactions and contracts. This can help prevent fraud, ensure compliance, and improve the traceability of procurement processes.

The Government of **Estonia** has experimented with blockchain for public procurement to create an immutable ledger of procurement activities, reducing fraud and improving transparency.

Potential Benefits (2)

Artificial Intelligence (AI)

AI can analyze large volumes of data to provide insights and predictive analytics, helping procurement professionals make informed decisions. AI can also automate routine tasks such as document review and vendor scoring, freeing up time for strategic activities.

The **City of San Francisco** uses AI to streamline the bid evaluation process by analyzing historical bid data to identify patterns and potential biases, which helps in selecting the most suitable suppliers.

The **UK's National Health Service (NHS)** uses AI for predicting the demand for medical supplies and optimizing procurement strategies.

Big Data Analytics

By analyzing data from various sources, public procurement agencies can identify trends, optimize spending, and make data-driven decisions. Big data analytics helps in forecasting demand, managing risks, and evaluating supplier performance.

Public procurement departments, like those in **New York City**, leverage big data to analyze spending patterns and identify cost-saving opportunities, optimizing procurement strategies and negotiations.

Potential Benefits (3)

Cloud Computing

Cloud-based procurement solutions offer flexibility, scalability, and accessibility. These platforms facilitate collaboration, provide real-time data access, and enable integration with other systems.

European Union has implemented the e-Procurement Platform, which allows member states to conduct procurement processes online. This platform centralizes and standardizes procurement activities, making it easier for businesses to participate in public tenders across Europe.

The **U.S. General Services Administration (GSA)** uses cloud-based solutions for contract management, allowing for real-time updates, document sharing, and collaboration across different departments.

Robotic Process Automation (RPA)

RPA can automate repetitive and rule-based tasks in procurement, such as invoice processing and purchase order management. This reduces manual effort, minimizes errors, and speeds up procurement cycles.

The **Australian Government** has used RPA to automate various procurement workflows, such as bid submissions and contract approvals, which streamlines operations and enhances efficiency.

Potential Benefits (4)

Augmented/Virtual Reality (AR/VR)

AR/VR are emerging technologies with significant potential to transform public procurement processes. Although their use in this field is still evolving, these technologies offer innovative ways to improve efficiency, enhance decision-making, and streamline various aspects of procurement.

The **City of Helsinki** has experimented with VR for virtual inspections of construction projects, allowing procurement officials to review and assess sites remotely, reducing travel and improving decision-making.

Chatbots and Virtual Assistants

Chatbots and virtual assistants are increasingly being used in public procurement to enhance efficiency, improve user experience, and streamline various aspects of the procurement process.

The **Government of Canada** has deployed chatbots to assist vendors and procurement staff with questions about procurement procedures and tender submissions, improving accessibility and support.

Potential Benefits (5)

Smart Contracts

Enabled by blockchain, smart contracts are self-executing contracts with the terms directly written into code. They automatically enforce and execute contract terms when predefined conditions are met, reducing the need for intermediaries and improving contract compliance.

In **Estonia**, smart contracts are employed to automate the execution of procurement agreements, including payment releases and compliance checks.

In **India**, pilot projects are exploring the use of smart contracts to streamline procurement processes, automate contract execution, and improve transparency and accountability.

Digital Twins

Digital twins are increasingly influencing public procurement by providing advanced tools for planning, managing, and optimizing procurement processes.

Beijing has developed a digital twin to support smart city initiatives. The digital twin is used for public procurement related to urban development, transportation management, and environmental monitoring. It helps in planning and executing large-scale projects by providing detailed simulations and predictive analytics.

Disruptive Technology Reality

- ❑ Technology vs. People
- ❑ Leadership
- ❑ Resource Allocation
- ❑ Institutional Capacity
- ❑ Does e-Procurement need innovative technologies?
- ❑ Technology adds complexity
- ❑ Technology has its price
- ❑ You cannot outsource trust to technology

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Thank You!