Emerging Technologies for Public Administration Effectiveness

Author: Emilio Bugli Innocenti

ENACT Report

> The report explores how emerging technologies like AI, big data, and blockchain can enhance decision-making and efficiency in Arab public institutions

> It examines global trends, case studies, and challenges unique to the region, offering strategies to leverage innovation for improved governance, service delivery, and economic growth

> The document emphasizes the importance of tailored digital strategies, robust infrastructures, and fostering a culture of innovation to achieve effective digital transformation in public sector operations

https://www.unescwa.org/publications/emerging-technologies-innovation-arab-public-institutions

The role of emerging technologies and innovation in enhancing effectiveness and decision-making in Arab public institutions

Emerging Technologies for Public Administration Effectiveness

Objectives

- Explore the potential of emerging technologies and innovation to increase effectiveness of public institutions in the Arab region

- Analyze the current their trends and needs

- Discuss how emerging technologies have been addressing those needs

- Focus on Digital Public Initiatives based on data related technologies among government agencies and their role in enhancing service effectiveness
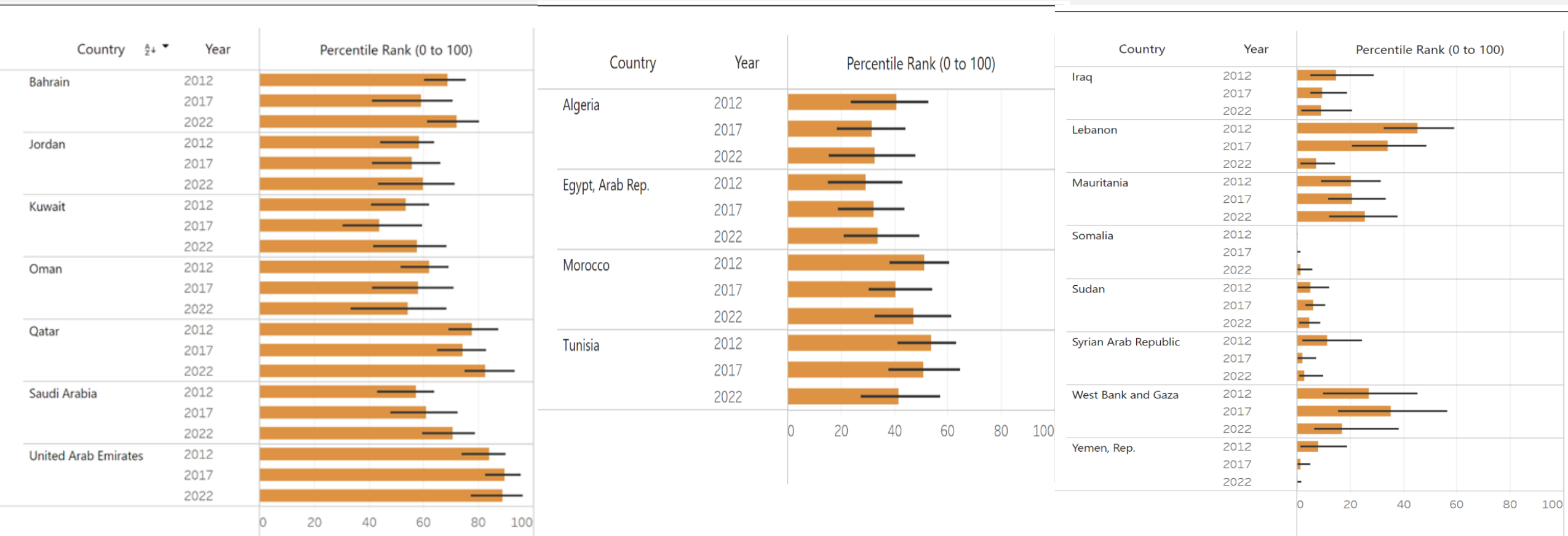
Effectiveness in the Public Sector (WBI report)

- ✓ **World Bank governance effectiveness indicators (WBI),** capture perceptions of the quality of public services: independence from political pressures, policy formulation and implementation, and the credibility of the government's commitment to such policies

- ✓ **Effectiveness in the public sector** refers to the ability to efficiently achieve its intended objectives and outcomes o serve the public interest

- ✓ **Effectiveness includes**: Goal Achievement, Efficiency, Accountability, Quality of Service, Equity and Fairness, Adaptability and Innovation, Stakeholder Engagement, Measurable Outcomes, Legal and Ethical Compliance, Long-Term Sustainability, Public Trust and Confidence.

https://www.worldbank.org/content/dam/sites/govindicators/doc/ge.pdf

Grouping Arab Countries

Government Effectiveness indicator

Grouping Arab Countries

- Grouping Rationale: Grouping based on similar socio-economic conditions and digital maturity, and WB's governance effectiveness:

Clusters:

  - Conflict and Post-Conflict Countries: Iraq, Lebanon, Libya, Mauritania, Palestine, Somalia, Syria, Yemen
  - North Africa: Algeria, Egypt, Morocco, Tunisia,
  - GCC Countries and Jordan: Bahrain, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, UAE

- Purpose: Tailoring **digital strategies** to specific regional needs and contexts

Global Trends in Emerging Technologies

- **AI and Machine Learning**: Enhancing predictive capabilities in government decision-making, e.g., for health care and urban planning

- **Big Data Analytics**: Utilizing large datasets for improved policy-making, trend analysis, and public sector transparency

- **Blockchain**: Ensuring secure and transparent record-keeping in areas like property registration and election systems

- **IoT**: Optimizing resource management and public utilities, e.g., smart metering for energy consumption

- **Cloud Computing**: Enhancing scalability and accessibility of government services, reducing infrastructure costs

- **Digital Twins**: Used in infrastructure management for remote monitoring and predictive maintenance

Global Trends in Emerging Technologies

- **Virtual/Augmented Reality (AR) for training and assistance**: can provide real-time, hands-on guides for workers, eg, training firefighters using AR simulations of emergency scenarios

- **GIS for planning**: helps visualize spatial data, aiding governments in allocating resources for underserved communities

- **5G technology for improved connectivity**: Enhancing communication for emergency services with faster and more reliable connections

- **Social Media and Online Engagement Platforms**: Governments can engage citizens in public consultations via social media, making participatory processes more accessible

- **Cybersecurity measures for data protection**: protecting citizen data in government databases is paramount to maintain trust

- **Digital Public Infrastructure (DPI)**: digital identity, digital payments and data exchange

- **Digital Public Goods (DPG):** open-source software, open data, open AI models, open standards

Digital Public Infrastructures & Digital Public Goods

- **DPI r**efers to digital systems, platforms, and frameworks that governments use to provide services to their citizens. A strong DPI has three foundational systems—identity, payments, and data exchange—that together can make life easier in important ways

- **DPG** are generally defined as "open-source software, open data, open AI models, open standards, and open content" that align with privacy laws, best practices, and help attain the Sustainable Development Goals (SDGs)

DPI Case Studies (World)

Estonia's e-Government System

Key Features: e-Residency, e-Voting, e-Tax Filing, X-Road platform

India's Aadhaar System

Key Features: Unique identification number across a wide population

Kenya's Digital Initiatives

Key Features: Huduma service centers, e-citizen portal, M-Pesa for financial inclusion

Rwanda's e-Government

Key Features: electronic tax system, e-Justice system

DPI Case Studies (Arab region)

Egypt Post

Egypt has leveraged DPI to modernize public services through its national postal network. In partnership with the United Nations Development Programme (UNDP)

Jordan E-Government and Digital Identity Systems

Jordan has been developing robust DPI to improve public service delivery through initiatives like e-identity and e-payment systems

Somalia Digital Public Infrastructure in Post-Conflict

Initiatives to introduce e-identity and digital cash transfer systems have been essential for distributing aid and fostering institutional legitimacy.

Challenges in Digital Transformation

- Common Global Challenges: Addressing issues like cybersecurity, data privacy, and digital literacy.

- Region-Specific Challenges: Infrastructure development needs, adapting to cultural differences, and promoting inclusivity

Recommendations for the Arab Region

- **Digital Strategy Development**: Emphasizing the need for comprehensive and holistic digital strategies.

- **Innovation and Governance**: Promoting a culture of innovation and robust data governance mechanisms.

- **Infrastructure Investment**: Highlighting the importance of investing in digital infrastructure and human capital.

- **Citizen-Centric Services**: Encouraging the development of services centered around citizen needs and feedback

Tailored Roadmap for the Arab Region

- **For Conflict and Post-Conflict Countries**: Focusing on basic digital infrastructure and mobile services.

- **For North Africa**: Expanding broadband, supporting tech ecosystems, and advancing digital governance.

- **For GCC Countries and Jordan**: Developing AI and data-driven governance, enhancing cybersecurity, and adopting citizen-centric digital services.

Key Messages

- Relationship between Governments and citizens has been evolving

- Citizens demand better efficiency, transparency and service delivery

- Emerging technologies offer an opportunity to address these demands

- Digital Public Infrastructure (e-identity, e-payments, data exchange) plays a fundamental

- Successful cases studies show how digital transformation has been used

Key Messages (2)

- For Arab countries to fully harness the benefits of digital transformation, it is imperative for them to develop comprehensive digital strategies that are tailored to specific national and regional contexts, emphasizing the development of human capital and digital infrastructure.

- To achieve a successful digital transformation in the Arab public sector, the report calls for a collaborative, multi-stakeholder approach to innovation, with a focus on creating an enabling policy environment.

- **Vision for the future**: Emphasize Digital Public initiatives, Policy and Collaboration and efficient, inclusive, sustainable digital governance.

Q&A