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Shared Prosperity Dignified Life

ENACT Kick-off Webinar – Online Event

Emerging technologies for enhancing operations and services in public sector

20 March 2023

Outline

- Enabling Ecosystem
- Big Data
- Artificial Intelligence
- Geospatial Technologies
- Immersive Technologies
- Blockchain
- Potential Impact & Benefits

Digital & Emerging Technologies

Improving public sector operations & Services


Enabling
Ecosystem

Enabling Ecosystem

Definition:

- Set of infrastructure and technologies that are critical for deploying and enabling emerging technologies (high speed internet/broadband, data centers, cloud computing and cybersecurity).
- Connectivity/Broadband: Wide Area Networks, Mobile Networks (3G/4G/5G), Wi-Fi networks, Fiber-optics.
- Data Centers: Scalable and reliable, are essential for processing and storing vast amounts of data generated by emerging technologies such as national data centers for Government services.

Enabling Ecosystem

- Cloud computing: Access computing resources over the internet, including software applications, servers, storage, and databases - hosted services (IaaS, PaaS, SaaS) offering several advantages:
  - Scalability: resources can be easily scaled up or down
  - Accessibility: resources are accessible from any location
  - Reliability: offerimng robust security and backup measures
  - Increased Collaboration, Disaster Recovery, Mobility, Loss Prevention, Cost Savings
- Private cloud, public cloud or hybrid cloud

Enabling Ecosystem

- Cybersecurity: Ensures the security of networks, data systems, and digital assets – it is essential to protect against cyber attacks, data breaches, theft, damage or other malicious activities.
- Many Arab states have realized that the security of cyberspace is an integral part of their economic systems and a matter of national security.
- Arab Cybersecurity Strategy (ACSS) is a 5-year plan which provides guidance and best practices on cybersecurity.


Big Data

Big Data

Definition:

- Set of tools, techniques and technologies used to process, store, analyze, and visualize large and complex data sets, allowing users to gain insights from the data and making data-driven decisions;
- Datasets can come from different sources, including social media platforms, web analytics and sensor networks, and may include structured, semi-structured, and unstructured data;
- Characterized by Volume, Velocity, Variety & Veracity (**4 V's**).

Big Data

Uses:

- Secure and transparent voting system while ensuring that votes are counted accurately and tamper-proof;
- Monitoring public health data to identify patterns & potential outbreaks;
- Improved disaster response through real-time data analysis and mapping;
- Analysis of SM data to better understand public sentiment and opinion;
- Analysis of census data to better understand demographic trends and population changes.

Artificial Intelligence

Artificial Intelligence

Definition

- Systems that are designed to learn from data, adapt to new inputs, and improve their performance over time, without being explicitly programmed.

Uses

- Analysis of vast amount of data to identify patterns, trends, and anomalies to inform decision-making;
- Identify suspicious patterns and behaviors, which can trigger investigations and save taxpayer money;

Artificial Intelligence

Uses

- AI-powered chatbots provide 24/7 customer support and answer common questions from citizens;
- Predict when government assets, such as roads, bridges, and public buildings, will require maintenance;
- Enhance public safety by analyzing data from various sources (social media, IoT sensors, surveillance cameras) to detect potential threats and alert law enforcement officials.

Geospatial Technologies

Geospatial Technologies

Definition:

- Set of tools and techniques (GIS, RS, GPS) used to collect, store, analyze, and visualize geospatial data (location dimension) providing valuable insights into spatial relationships and patterns, and enabling improved decision-making.

Uses:

- Urban planning - finding the right location for a business/public institution by mapping available buildings, filtering square footage value, zoning and overlaying traffic density and crime statistics;

Geospatial Technologies

Uses:

- Mapping out areas with high concentrations of vulnerable populations, such as low-income households, and help governments reduce the time and costs associated with providing targeted resources and services to those areas;
- Makeing it simple for the public to self report potholes and other problems like water and gas leaks, graffiti, etc. using a smartphone app to click on the location of the problem;

Immersive Technologies

Immersive Technologies

Definition:

- Set of digital technologies (VR, AR, MR) that enable users to experience virtual or augmented environments in a way that simulates real-world experiences.
- The Metaverse is a linear progression of VR, AR, MR.

Uses:

- Entertainment & Tourism: Virtual forums, events, concerts, cultural site visits & recreation of historical sites - useful for people with disabilities;

Immersive Technologies

Uses:

- Healthcare: remote consultations and medical training;
- Education: help learners visualize complex concepts;
- Training: train law enforcement officials to handle high-stress situations or emergency responders to manage natural disasters or terrorist attacks;
- Public services: live discussions with government officials and virtual visits to government sites


Blockchain

Blockchain

Definition:

- A decentralized digital ledger technology allowing multiple parties to maintain a continuously growing list of records. (blocks)
- Each block contains a timestamp and a link to the previous block, creating a chain of blocks.
- Once a block is added to the blockchain, it cannot be altered or deleted without altering all subsequent blocks, providing a high level of security and immutability.

Blockchain

Uses:

- Secure and transparent **voting system** while ensuring that votes are counted accurately and tamper-proof;
- Secure and decentralized **identity verification** system reducing fraud;
- Track **tax collection** and ensure that they are made on time;
- Secure and tamper-proof **land registry** preventing land disputes;
- Track the movement of goods through the **supply chain** helps in preventing fraud while increasing transparency.

Potential Impact & Benefits

- Optimized government processes & back-office operations;
- Targeted and timed government programmes and projects;
- Improved planning, faster and more accurate decision-making;
- Better policy outcomes;
- Reductions in services time and cost;
- Improved, innovative and optimized services

Potential Impact & Benefits

- More cooperation & exchange between all stakeholders;
- Better understanding of the needs of citizens & communities and targeted plans for the delivery of related services;
- Effective response to emergencies and natural disasters;
- Increase citizens' engagement and participation;
- Offering new opportunities for private sector and young entrepreneurs.

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ENACT Project

Thank You

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